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CardioVascular Journal of Africa (official journal for PASCAR)

JOINT MEETING

The 23rd Panafrican Course on Interventional Cardiology and 27th National Congress of the Moroccan Society of Cardiology



**Tangier - Morocco
October 13-15, 2022**



Twenty third PanAfrican Course on Interventional Cardiology SMC-PAFCIC 2022

13-15 October 2022

PAFCIC Board:

Founding President: Mohamed Ben Farhat

Course Chairman: Habib Gamra

Course Directors: Mohamed Ben Farhat
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Horst Sievert

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Adel Bouraghda, Algeria
Sami Mourali, Tunisia
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Yemi Jonhson, Nigeria
Roland N'guetta, Cote d'Ivoire
Patrick Serruys, The Netherlands
Fethi Betbout, Tunisia
Fehmi Remadi, Tunisia
Alain Cribier, France
Augusto Pichard, USA

Live Transmission Sites:

- Cedars Sinai Medical Center – Los Angeles, USA
- Sunninghill Hospital, Johannesburg, South Africa
- University Hospital, Casablanca, Morocco
- Humanitas Research Center, Milan, Italy
- international Medical Center, Jeddah, Saudi Arabia
- Kings College Hospital, London, United Kingdom

Disclaimer

The Abstracts for SMC-PAFCIC 2022 were reviewed by the PASCAR Interventional Cardiology Task Force (PASCIT) and not by the Editor-in-Chief, Regional Editors or reviewers of the *Cardiovascular Journal of Africa*. Only accepted and presented abstracts are published.

Dear friends and colleagues,

Welcome to PAFCIC 2022.

We are delighted to invite you to the 23rd edition of the Panafrican Course on Interventional cardiology that will be held in the beautiful city of Tangier (Morocco) jointly with the 27th edition of the national Moroccan Society of Cardiology (SMC 2022). We are sincerely grateful to the board of the Moroccan Society of Cardiology and especially its president Pr Abdelhamid Moustaghfir for accepting to host PAFCIC in Morocco and reunite with our community in a face to face but also in an online format.

As for the previous years, PAFCIC will be organized under the auspices of The Tunisian Society of Cardiology and Cardiovascular Surgery (STCCCV) and The Panafrican Society of Cardiology (PASCAR) with the contribution of the working groups on interventional cardiology of the African national societies such as GTCI, AGIC and others. PASCAR the association of structural and cardiovascular intervention of PASCAR will be heavily involved.

We are honored by organizing this edition under the auspices of the American Society for Cardiac Angiography and Intervention (SCAI).

The program will be case learning based with several live transmission from the four corners of the globe, case discussions and keynote lectures by renowned speakers. Africa Fellows Summit will be organized for the ninth year in a row, jointly with PAFCIC and will comprise an exciting program dedicated to the young generation.

So we are excited and delighted to have you join us physically and or virtually this year to share together knowledge and experience in a friendly environment.

For the board of directors,



Pr Mohamed Ben Farhat



Pr Horst Sievert



Pr Habib Gamra

In Association with Africa Fellows Summit How to: Step by step

Thursday October 13th, 2022

10:00 – 11:00

How to perform PCI of a long CTO lesion by antegrade approach
Step by Step

PAFCIC Hall

Chairs: Fahd Chaara – Omer Goktekin – Hadi Abu-Hantash – Awad Mohammed – Fehmi Remadi

Facilitators: Ahmed El Guindy – Marouane Boukhris

Online Moderator: Majed Hassine

Live from International Medical Center
Jeddah – KSA

 ASAHI INTECC

Operator: Khalid Tammam

Antegrade Wire Escalation: Strategies in difficult anatomies

Using wires safely and effectively

Antegrade dissection and re-entry: what works and what does not?

Omer Goktekin, Turkey

Marouane Boukhris, France

Ahmed ElGuindy, Egypt

11:00 – 12:00

How to perform Balloon Mitral Valvuloplasty
Step by Step

PAFCIC Hall

Chairs: Kanji Inoue – Rachid Mechmeche – Mohamed Ben Farhat – Assad Chaara – Essia Boughezala – Fethi Betbout – Naima El Haitem

Facilitators: Jamel Langar – Nesma Ben Dagha

How to perform transseptal

Introducing the Inoue balloon

How to negotiate the balloon to the mitral valve

Challenging cases

Q&A

Ahmed Suliman, Sudan

Kanji Inoue, Japan

Assad Chaara, Morocco

Habib Gamra, Tunisia

Thursday October 13th, 2022

12:00 – 13:00

How to treat aortic coarctation Step by Step

PAFCIC Hall

Chairs: Abdelfattah Abid – Nadia Felat – Fatima Ouarda – Abdelelil Farhati – Horst Sievert – Fekria Abid – Faouzi Maatouk

Facilitators: Elyes Neffati – Dorra Abid

Imaging assessment	<i>Dorra Abid, Tunisia</i>	10 min
Indications for intervention	<i>Maiy ElSayed, Egypt</i>	10 min
Modalities of intervention: balloon or stent?	<i>Ilyes Neffati, Tunisia</i>	10 min
Live in-a-box case of aortic coarctation	<i>Horst Sievert, Germany</i>	10 min
Complications and late follow-up	<i>Semi Mourali, Tunisia</i>	10 min

13:00 – 14:00

LUNCH

14:00 – 14:45

Live from Humanitas Research Hospital Milan – Italy

PAFCIC Hall

Contemporary approach of complex PCI in Multivessel Disease

Operator: Antonio Colombo

Chairs: Mohamed Sobhy – Augusto Pichard – Imad Al Haddad – Amine Jemel – Khaled Ould Beya – Wissem Sdiri

14:45 – 15:15

Debate: Management of complex MVD in 2022

PCI is preferred to CABG in most patients

Gregg Stone, USA

CABG is superior to PCI in most patients

Imed Frikha – Amine Jemel, Tunisia

15:30 – 16:30

Live from University Hospital Casablanca Step by Step



Operator: El Ghali Benouna

Chairs: Alain Cribier – Augusto Pichard – Mohamed Sobhy – Leila Bezdash – Essia Boughezala – Imad Al Haddad – Abdallah Mahdhaoui

Facilitators: Kamel Boughalem – Nadhem Hajlaoui

Thursday October 13th, 2022

16:30 – 17:30

Challenging cases of TAVI

Chairs: Alain Cribier – Morched Marouane – Kamel Boughalem – Mpiko Ntsekhe – Adel Etriby – Semia Emez – Abdelfattah Abid

TAVI in a patient with a Starr mitral prosthetic valve:
Does it matter?

Nadhem Hajlaoui, Tunisia

Life time management ahead of time

Kamel Boughalem, France

TAVI in a patient with aortic homograft

Imad Al Haddad, Jordan

TAVI: problematic scenario, how to manage?

Mohamed Sobhy, Egypt

17:30 – 18:00

Visit of exhibitions

Moderated Poster Session 1

Moderators: Fares Azaiez – Mehdi Boussaada – Najat Mouine – Nabil Berrada

18:00 – 19:00

European Heart Journal @ SMC – PAFCIC

SMC Hall

Chairs: Filippo Crea – Abdelhamid Moustaghfir – Habib Gamra – Mohamed Alami – Saadia Abir – Abdoul Kane – Abdallah Mahdhaoui

The year 2022: Top papers in ischemic heart disease in the
European Heart Journal

Filippo Crea, Italy

Challenges with research in Africa

Mpiko Ntsekhe, South Africa

Tunisian experience with Multi-center Controlled Randomized
Trials in interventional cardiology

Rania Hammami, Tunisia

Revascularisation of patients with left ventricular dysfunction:
How and when?

Bernard Gersh, USA

18:00 – 19:00

Keynote Lecture

SMC Hall

Chairs: Mohamed Ben Farhat – Abdelhamid Moustaghfir – Lillia Zakhama – Horst Sievert – Rachid Boujenah – Habib Gamra

Lessons from 20 years of TAVI: Implications for the introduction
of TAVI in Africa

Alain Cribier, France

19:30 – 20:00

Official Opening Ceremony

Friday October 14th, 2022

08:30 – 09:30

Africa PCR @ PAFCIC
Live transmission from Sunninghill Hospital,
Johannesburg, South Africa

SMC Hall

Complex PCI with physiologic assessment and imaging

Operator: Farrel Hellig

Chairs: Stephen Lee – Mpiko Ntekhe – Horst Sievert – Mohamed Sobhy – Kais Battikh –
El Ghali Benouna – Jonathan Byrne – Fehmi Remadi

Facilitators: Habib Gamra – Yemi Johnson

Introduction – session objectives

Mpiko Ntekhe, South Africa

Live transmission from Johannesburg

*Operator: Farrel Hellig,
South Africa*

Take home message

Ahmed Sulliman, Sudan

09:30 – 10:00

Keynote lecture live from Japan
Supported by Terumo

SMC Hall



Chairs: Samir Ztot – Faouzi Drissi – Yemi Johnson – Roland Nguetta – Nashwa Abderrahim –
Maboury Diao

Retrograde CTO PCI: Where are we now?

Shozo Ishihara, Japan

10:30 – 11:00

Visit of Exhibitions
Moderated Poster Session 2

SMC Hall

Moderators: Hédi Ben Slima – Hichem Denguir – El Ghali Benouna – Amale Tazi

09:30 – 11:00

CSI Africa
@PAFCIC

PAFCIC Hall

Chairs: Horst Sievert – Fatima Ouarda – Nadia Fellat – Maiy El Sayed – Ilyes Neffati –
Habiba Drissa – Abdehadi Alkadidi – Max Amor

Transcatheter closure of paravalvar leaks: Rationale,
techniques and outcome.

10 min

Recorded case paravalvar leak closure.

12 min

Martin Swaans, The Netherlands

Pulmonary valve implantation, devices, results

10 min

Recorded case of pulmonary valve implantation

12 min

Mario Carminati, Italy

Acute stroke intervention

10 min

Recorded case of acute stroke intervention

12 min

Horst Sievert, Germany

Friday October 14th, 2022

12:00 – 13:00

Catheter base therapy for refractory angina
Live from Kings College Hospital, London



Operators: Jonathan Hill – Ian Webb

Chairs: Youssef Ben Ameer – Sana Ouali – Emmy Okello – Mohamed Jeilan – Abdeddayem Haggui – Majed Hassine – Morshed Marouane

Facilitators: Jonathan Byrne – Kais Battikh

Pharmacotherapy for refractory angina
Giuseppe Rosano, UK

13:00 – 14:30

LUNCH

14:30 – 15:30

Innovation session
Techniques you have never seen before

PAFCIC Hall

Chairs: Stephen Lee – Adel Etriby – Jamel Langar – Khelil Hamza – Leila Hached – Habib Boussadia – Semi Milouchi – Omer Goktekin

Facilitators: Zied Ibn Elhadj – Ahmed Suliman

Rendezvous techniques for peripheral artery disease

Max Amor, France 7 min

Snowy biodegradable PFO device

Horst Sievert, Germany 7 min

Pulmonary arterio-venous malformation embolization

Khelil Hamza, Tunisia 7 min

A new technique to close the LAA without leaving a device

Stefan Bertog, USA 7 min

A new technique to repair left ventricular rupture

Farrel Hellig, South Africa 7 min

New transcatheter therapy for HFrEF patients

Horst Sievert, Germany 7 min

15:30 – 16:30

Live from Shaab Khartoum Hospital
Left main bifurcation PCI

PAFCIC Hall

Operator: Awad Mohamed

Chairs: Saad Subahi – Patrick Joly – Hadi Abu-Hantash – Habib Ben Ahmed – Fethi Betbout – Ibrahim Touré – Skander Ben Omrane – Ahmed Suliman

Facilitators: Jonathan Byrne – Mejd Ben Messaoud

Friday October 14th, 2022

16:30 – 17:00

Visit of exhibitions
Moderated Poster Session 3

PAFCIC Hall

Moderators: Hichem Denguir – Meriem Drissa – Zainab Raissouni – Mohamed Alami

17:00 – 18:30

Live transmission from Cedar Sinai Medical Center,
Los Angeles, USA

SMC Hall

Operator: Raj Makkar

Chairs: Augusto Pichard – Rachid Boujenah – Mohamed Sobhy – Aicha Aouad –
El Ghali Bennouna – Imad Al Haddad – Lilia Zakhama – Ramesh Daggubati

Facilitators: Horst Sievert – Habib Gamra

Live Transmission

Operator: Raj Makkar

Tricuspid Valve implantation and repair

Keynote Lecture

New devices for aortic, mitral and tricuspid repair

Raj Makkar, USA



Saturday October 15th, 2022

08:30 – 09:15

How to manage a high bleeding risk patient with ACS

PAFCIC Hall

Chairs: Sidi Mhamed Ould Ethmane – Jawad Chaara – Rania Hammami –
Leila Hached – Samir Kammoun – Habib Boussadia – Mourad Gahbiche

Facilitators: Mustapha Hattatoui – Fehmi Remadi

How do I manage HBR patients with ACS in Tunisia

Mejdi Ben Messaoud

How do I manage HBR patients with ACS in Morocco

Samir Ztot, Morocco

How do I manage HBR patients with ACS in Kenya

Mohamed Jeilan

How do I manage HBR patients with ACS in Nigeria

Yemi Johnson



09:15 – 10:00

Challenging cases of primary PCI

Chairs: Marouane Boukhris – Faouzi Maatouk – Ramesh Daggubati – Majed Hassine –
Mourad Jarrar – Donia Ben Zerouel – Helmi Kammoun

Facilitators: Awad Mohamed – Kais Battikh

Case 1

Selim Boudiche, Tunisia

One remaining vessel, which one to choose?

Ghizlane Cherradi, Morocco

Case 3

Hadi Abu-Hantash, Jordan

Case 4

Nashwa Abderrahim, Sudan

Case 5

Maboury Diao, Senegal

Take Home Message

Awad Mohamed, Sudan

10:00 – 11:00

How to approach a heavily calcified lesion? SCAI @ PAFCIC session



Chairs: Ramesh Daggubati – Mirvat Alasnag – Adel Etriby – Nadham Hajlaoui –
Ilyes Neffati – Habib Gamra

Facilitators: Jamel Langar – Samir Ztot

Algorithmic approach for a calcified lesion

Mohamed Sobhy, Egypt

Use of imaging to assess calcium

Habib Ben Ahmed, Tunisia

When and how to use guide extensions

Adel Etriby, Egypt

How to proceed with a non-dilatable lesion

*Abdullah Shehab,
United Arab Emirates*

Rotational atherectomy – step by step

Ramesh Daggubati, USA

Saturday October 15th, 2022

11:00 – 11:30

Visit of exhibitions
Moderated Poster Session 4

Moderators: Mehdi Boussaada – Nashwa Aberrahim – Aicha Aouad – Aida Soufiani

11:00 – 12:00

Left atrial appendage closure in 2022. How and when?
Supported by Boston Scientific

PAFCIC Hall



Chairs: Abdelhamid Moustaghfir – Habiba Drissa – Youssef Ben Ameer –
Maiy El Sayed – Soraya Ben Youssef – Leila Bazdeh – Faouzi Drissi – Abdeljelil Farhati

LAA Closure: Atrial appendage closure in 2022: How and when? **Habib Gamra**

12:00 – 14:00

Complications by The masters under the auspices of
GTCI – AGIC – PASCi – CardioAlex

PAFCIC Hall

Chairs: Stephen Lee – Helmi Kammoun – Mohammed Sobhy – Abdullah Shehab –
Kamel Boughalem – Faouzi Addad – Zied In El Hadj

Facilitators: Awad Mohamed – Wissem Sdiri

A little move turns into a nightmare

Michael Haude, Germany

Complication a severely calcific lesion

Damiano Regazzoli, Italy

Unexpected shock during TAV1

Augusto Pichard, USA

What you fear most during TAV1

Patick Joly, France

A complicated left main PCI

Jonathan Byrne, UK

Unreported technique for lost stent retrieval

Jamel Langer, Tunisia

Unusual coronary perforation

Max Amor, France

Balloon rupture during valvuloplasty

Ahmed Suliman, Sudan

14:00 – 14:30

Closing keynote lecture

PAFCIC Hall

Chairs: Abdelhamid Moustaghfir – Mohamed Ben Farhat – Horst Sievert – Habib Gamra

The future of PCI: Transitioning from Ischemia to
Vulnerable Plaque

Gregg Stone, USA

Closing remarks / Meeting highlights

Mohamed Ben Farhat – Habib Gamra – Horst Sievert

Thank you to our partners

Platinum



Gold



Silver



Entry ID	Name	Surname	Country	English Title
1382	BENDAHO	HAJAR	Morocco	Alterations in left ventricular function in patients with aortic stenosis and preserved ejection fraction: the value of global longitudinal strain. Experience of the cardiology department at IBN ROCHD hospital university in Casablanca.
1383	BENDAHO	HAJAR	Morocco	Gender can influence parameters and prognosis of mitral stenosis? Experience of the Cardiology department of the IBN ROCHD Casablanca hospital center.
1388	Amira	ABOURICHE	Morocco	Insights into the clinical course and therapeutic response of Anthracycline-Induced Cardiotoxicity in Breast Cancer Patients: Casablanca Cardio-Oncology Unit experience
1392	oumayma	Hattab	Morocco	A severe non-ischemic hypokinetic cardiomyopathy revealing an axial ankylosing spondylitis: a case report
1397	Ahmed	Makni	Tunisia	Ostial stenting versus left main cross-over stentig in isolated ostial left anterior descending artery disease
1398	Fekih	Ridha	Tunisia	Heart failure with preserved ejection fraction: Association between the left atrium strain and the NT-ProBNP
1400	HAJAR	BENDAHO	Morocco	Evaluation of right ventricular dysfunction concomitant to left ventricular dysfunction in cardiotoxicity induced by Trastuzumab in patients followed for HER2+ breast cancer: Experience of the cardio-oncology unit at IBN ROCHD hospital university, CASABLANCA.
1401	El Ghiati	Hanaa	Morocco	Management of hypertension in severe forms of Posterior Reversible Encephalopathy Syndrom (PRES)
1402	Tamirat Moges	Moges	Ethiopia	Rheumatic mitral valve regurgitation diagnosed after device closure of Secundum Atrial Septal Defect in a 6-year-old girl from Ethiopia: Case report. case report
1405	HAJAR	BENDAHO	Morocco	Diabetes mellitus predisposes to the risk of cardiovascular mortality in patients with breast cancer? Experience of the cardio-oncology unit at IBN ROCHD hospital university, CASABLANCA.
1426	Lokman	Hafsa	Morocco	RIGHT VENTRICULAR THROMBUS REVEALING BEHCET'S DISEASE
1427	OUAOUICHA.	HIND	Morocco	INFERIOR STEMI REVEALING TYPE A AORTIC DISSECTION
1435	ZAKARIA	EL MARRAKI	Morocco	Postpartum dilated cardiomyopathy associated with Pulmonary embolism relevant to APS(antiphospholipid syndrome): a rare association (case report)
1436	ZAKARIA	EL MARRAKI	Morocco	Post-covid myocarditis simulating acute coronary syndrome:
1437	ZAKARIA	EL MARRAKI	Morocco	Coronary aneurysm: a rare etiology of coronary syndrome with ST segment elevation (case report) :
1441	DAHMANI	Houda	Morocco	MD
1444	MAHOUNGOU MACKONIA	Noel Maschell	Morocco	Epidemiological study of infective endocarditis at the IBN Rochd University Hospital in Casablanca.
1448	SARA	ABOURADI	Morocco	Type 2 diabetics presumed to be normotensive: Masked hypertension, urinary albumin excretion rate and echocardiographic screening
1452	SARA	ABOURADI	Morocco	Prognostic value of diastolic dysfunction in acute myocardial infarction: a prospective study.
1455	EL-AZRAK	MOHAMMED	Morocco	Sudden cardiac death risk stratification of the early repolarization syndrome: An updated review of the literature
1470	Abid	Slim	Tunisia	Assessment of glycated hemoglobin predictivity in the severity of coronary artery disease in patients with or without diabetes
1475	BOUHADOUNE	YOUSRA	Morocco	Right ventricular infarction: Epidemiological, clinical and angiographic characteristics and the outcomes through the experience of a Moroccan cardiology department

Entry ID	Name	Surname	Country	English Title
1481	Zaid	AMMOURI	Morocco	High risk pulmonary embolism : Management in CHU Ibn Rochd cardiology intensive care unit
1482	Boutaleb	Amine mamoun	Morocco	Guidewire induced distal obtuse marginal perforation : Case report and review of literature
1483	Boutaleb	Amine mamoun	Morocco	Coronary artery stent total dislodgement in brachial artery
1489	Nouha	Mekki	Tunisia	Late complications following Fontan procedure: a unicenter case series
1491	Nouha	Mekki	Tunisia	Percutaneous reinterventions following the Fontan procedure
1494	OUERGHI	MOHAMED HICHEM	Tunisia	Percutaneous treatment of a giant aneurysm of carotid with a covered stent
1499	MAHOUNGOU MACKONIA	Noel Maschell	Morocco	CLINICAL FINDINGS AND CHARACTERISTICS OF CULTURE-NEGATIVE INFECTIVE ENDOCARDITIS
1503	Maaroufi	Anass	Morocco	Basal characteristics of the cardio-oncology registry of chemotherapy induced cardiovascular toxicity: about 2329 patients
1504	EL MOUSAID	MERIEM	Morocco	Influence of Direct Oral Anticoagulants on Rates of Oral Anticoagulation for Atrial Fibrillation
1505	Maaroufi	Anass	Morocco	Prevalence, predictors and real-world management of NSTEMI with multivessel diseases
1506	MAAROUFI	ANASS	Morocco	Infective endocarditis profile, prognostic factors and in-hospital mortality: 6-year trends from a tertiary university center in Morocco
1508	Amri	Meriam	Morocco	Clinical characteristics and prognosis of surgical patients due to infective endocarditis
1511	Amri	Meriam	Morocco	Heart failure in endocarditis patients: characteristics and prognosis
1516	Chaima	Ghorbel	Tunisia	Pulmonary arterial hypertension in pediatric cardiology Epidemiological profile, management and survival in Tunisia
1518	charif	hana	Morocco	A LOOK AT SUPPORT HEART FAILURE : EXPERIENCE OF THE HEART FAILURE TREATMENT UNIT OF THE IBN ROCHD UNIVERSITY HOSPITAL
1520	Syrine	Benjeddou	Tunisia	Heart Rate Recovery after exercise in children
1521	Emna	Derbel	Tunisia	Perforated balloon technique: a safe and simple method to deal with no-reflow phenomenon
1525	charif	hana	Morocco	Particularity of congestive heart failure in elderly versus young moroccan patients .
1526	Fatma	Sghaier	Tunisia	Three vessels coronary artery disease; A challenge to treat in Tunisian conditions
1527	Fatma	Sghaier	Tunisia	Clinical, anatomical and prognostic characteristics of coronary artery disease in Tunisian diabetics
1530	Ali	Khorchani	Tunisia	Echocardiographic findings in patients with improved heart failure
1531	BENOTHMAN	Rihab	Tunisia	Pulmonary Valve Replacement After Tetralogy of Fallot Repair
1532	charif	HANA	Morocco	Paradox of obesity is it valid in Moroccan patients followed with chronic heart failure with reduced ejection fraction ?
1533	Ali	Khorchani	Tunisia	Clinical characteristics of patients with improved heart failure
1534	Taha	Lassoued	Tunisia	Acute coronary syndrome revealing a Behcet's Syndrome in a young man
1535	charif	hana	Morocco	Sex-related differences in the incidence and prognosis of heart failure with impaired ejection fraction: an experience from the UHC Ibn Rochd of Casablanca, Morocco (about 4382 patients)
1537	Chawki	Khawla	Morocco	The changing face of infective endocarditis over time : over 30 years comparative study
1539	Hala	El Assili	Morocco	CHALLENGING PERSISTENT LEFT SUPERIOR VENA CAVA FOR CARDIAC DEVICE IMPLANTATION : TWO CASE REPORTS AND LITERATURE REVIEW
1547	Zaid	Ammouri	Morocco	OUTCOMES AND PROGNOSIS OF ACUTE CORONARY SYNDROMES IN DIABETIC PATIENTS

Entry ID	Name	Surname	Country	English Title
1548	HATIM	HAJAR	Morocco	Moroccans' modifiable risk factors of severe heart failure : a descriptive study using routinely collected health database
1553	ETTACHFINI	TAHA	Morocco	Arrhythmogenic Right Ventricular Cardiomyopathy Revealed by Ventricular Tachycardia
1554	ZAINAB	BOUDHAR	Morocco	Atrial Fibrillation After Ischemic Stroke Detected by 24 hours Chest Holter Monitoring
1560	Skander	Bouchnag	Tunisia	Biological predictive factors of in-hospital mortality in cardiogenic shock in the setting of STEMI.
1564	choukrani	hanane	Morocco	Anemia as a severity factor in patients with myocardial infarction
1573	Bousnina	Mouna	Tunisia	Paraortic ectopic thyroid: a case report
1574	HAJAR	BENDAHOUE	Morocco	Role of the inflammatory biomarkers to detection of the chronic progression rheumatic valvular diseases: Moroccan experience of the cardiology department at the CHU IBN ROCHD, CASABLANCA
1578	Bousnina	Mouna	Tunisia	Axillary artery aneurysm revealed by acute ischemia of the upper extremity
1579	MAAROUFI	ANASS	Morocco	qSofa score: a useful score to identify patients at risk of poor prognosis in infective endocarditis
1581	Marwa	Abdelhedi	Tunisia	The impact of left ventricular geometry in right heart function in hypertensive patients.
1582	MAAROUFI	ANASS	Morocco	Toxic cardiomyopathy due to Trastuzumab's use in breast cancer patients in the cardio-oncology unit of Casablanca .
1583	Marwa	Abdelhedi	Tunisia	The Impact of overweight in left atrial and left ventricular structure and function in hypertensive patients.
1588	AMINE	BOUCHARHEM	Morocco	The impact of prior antithrombotic use on thromboembolic events in patients with cardiovascular disease and severe COVID-19 infection.
1595	Abderrahmane	Bouchaala	Morocco	Too much sugar blocks your heart? Sinoatrial arrests associated with diabetic ketoacidosis regressing to sinus rhythm after compensation of diabetic process
1600	NABAWI	HIND	Morocco	Prosthetic valve thrombosis: a real challenge for caregivers (a case series of 9 patients)
1606	Hamdi	Sana	Tunisia	Prognostic value of Heart Rate Variability in patients treated with Cardiac resynchronization therapy ;Cardiology department, Military Hospital of Tunis
1609	Ella	Lahmaier	Tunisia	Echocardiographic Evaluation in Neonates Suspected to Congenital Heart Disease
1616	KARIM	Fatiha	Morocco	POSTURAL ORTHOSTATIC TACHYCARDIA SYNDROME (POTS): in young subjects (about 8 cases)
1623	HAYAR	SALAH EDDINE	Morocco	Infective endocarditis with low C-reactive protein: is it worth considering?
1626	Amine	Boufares	Tunisia	IMPACT OF DIPPER PROFILE ON TARGET ORGAN DAMAGE AND CARDIOVASCULAR RISK IN HYPERTENSIVE PATIENTS. A PROSPECTIVE STUDY
1627	zainab	Boudhar	Morocco	Prevalence of arrhythmias on 24-h ambulatory Holter electrocardiogram monitoring: from 24-h ambulatory holter electrocardiogram register of Mohammed VI university hospital of Marrakech.
1630	AMAMOU	IMEN	Tunisia	Percutaneous treatment for complex coarctation of the aorta
1632	Ali	Khorchani	Tunisia	A new feasible and safe access point in interventional cardiology : The trans-palmar access
1633	Aiman	Ghrab	Tunisia	Automatic coronary angiogram analysis algorithm: keyframe extraction phase
1634	Samia	EJJEBLI	Morocco	Epidemiology and prognosis of coagulase-negative staphylococcal endocarditis

Entry ID	Name	Surname	Country	English Title
1638	karim	fatiha	Morocco	HIGH-GRADE ATRIO-VENTRICULAR BLOCK in young subjects SECONDARY TO VAGAL HYPERACTIVITY (About 3 cases)
1642	denguir	hichem	Tunisia	Outcomes in ST-segment elevation myocardial infarction treated with primary percutaneous coronary intervention or pharmacoinvasive strategy in a single Tunisian center
1643	Hajri	Yassmine	Tunisia	Noninvasive cardiovascular evaluation of patients with erectile dysfunction
1644	Kaouthar	Hakim	Tunisia	Long-term outcomes in congenitally corrected transposition of the great arteries: La Rabta hospital experience
1645	Hajri	Yassmine	Tunisia	Severity of erectile dysfunction and cardiovascular risk: a prospective study
1647	TAOUSSI	OUMAIMA	Morocco	Epidemiological and etiological profile of Atrial Fibrillation: A Moroccan study
1653	Talhaoui	Amira	Tunisia	Predictive factors for reoperation and death in operated atrioventricular ducts
1662	Asma	Brahim	Tunisia	Contribution of the speckle tracking in the evaluation of left ventricle filling pressure in acute coronary syndromes
1664	Asma	Brahim	Tunisia	The Correlation between 2D global longitudinal strain Echocardiography and Cardiac magnetic resonance to determine left ventricle myocardial scar burden (LVMS) in patients presenting with acute coronary syndrome (ACS)
1666	Bousnina	Sabrine	Tunisia	Discordance between high gradients and moderately stenotic valve surfaces : A rare cause not to be ignored!
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1683	Zineb	AGOUMY	Morocco	Surgical outcomes of patients with severe aortic regurgitation within markedly reduced left ventricular function: why should we operate
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1690	MAHOUNGOU MACKONIA	Noel Maschell	Morocco	Relationship between cardiovascular risk and nocturnal systolic-diastolic arterial pressure in hypertensives at CHU-IBN Rochd.
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1710	MALAK	BENABDELLAH	Morocco	Complete heart block and pregnancy : a management dilemma
1714	Kamal	Marzouki	Morocco	Myocardial infarction after Covid-19 vaccination: a causal link?
1717	NABAWI	HIND	Morocco	poster: Prognostic factors of mortality during infectious endocarditis in the University Hospital of Marrakech
1723	Ben Salem	Amal	Tunisia	Treatment of coronary bifurcation lesions with two-stent techniques: short- and long-term outcome in a north african referral hospital
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1726	skander	bouchnag	Tunisia	Vessel Size and Long-Term Outcome After Percutaneous Coronary Intervention With Drug Eluting Stent
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1729	LAMYAA	BAKAMEL	Morocco	Ventricular Septal Defect Post-Myocardial Infarction: About 7 Cases
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1736	Chadli	Sarra	Morocco	Cardiac amyloidosis : a race against time
1739	EL MIRE	WAFA	Morocco	ALL IN ONE: THE 3 P PARADOXICAL EMBOLIC STROKE AND PULMONARY EMBOLISM IN A PATIENT WITH A PATENT FORAMEN OVAL
1740	Aissa	mohamed selmen	Tunisia	Electrocardiographic criteria for left ventricular hypertrophy in aortic valve stenosis: Correlation with echocardiographic parameters
1742	Boudiche	Selim	Tunisia	Two-Stent Strategies for the Treatment of Unprotected Left Main Bifurcations Lesions. A Five-Year Monocentric Experience.
1746	Boudiche	Selim	Tunisia	Transcatheter Aortic Valve Implantation: Initial Experience and One-Year Outcomes from a Single Institute in Tunisia.
1751	Meryem Iben chekroun	Iben chekroun	Morocco	Cardiovascular Magnetic Resonance in Cardiac Amyloidosis
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1753	Houdhayfa	HERMASSI	Tunisia	Usefulness of 64-slice multidetector computed tomography to detect coronary disease in patients prior to cardiac valve surgery
1754	Azaiez	Fares	Tunisia	Angiographic features of myocardial infarction in young women
1756	Meriem	Lamhani	Morocco	Cardiac arrhythmias on hemodialysis
1759	Azaiez	Fares	Tunisia	Female patients with myocardial infarction and non obstructive coronary arteries (MINOCA): Clinical characteristics, in-hospital complications and long-term mortality.
1761	Azaiez	Fares	Tunisia	Myocardial infarction in young women: clinical profile and long term outcomes.
1762	Azaiez	Fares	Tunisia	Impact of prior coronary artery bypass grafting in patients with an acute coronary syndrome
1764	Azaiez	Fares	Tunisia	Angiographic factors associated with stent thrombosis
1765	Azaiez	Fares	Tunisia	Prognosis of stent thrombosis
1766	Azaiez	Fares	Tunisia	Angiographic profile of patients over the age of 75 years old presenting with acute coronary syndrome
1767	Azaiez	Fares	Tunisia	Mid and long-term follow-up of patients aged over 75 years with acute coronary syndrome.
1770	Azaiez	Fares	Tunisia	ST-Segment-Elevation Myocardial Infarction in COVID-19

Submission ID: 1382

ALTERATIONS IN LEFT VENTRICULAR FUNCTION IN PATIENTS WITH AORTIC STENOSIS AND PRESERVED EJECTION FRACTION: THE VALUE OF GLOBAL LONGITUDINAL STRAIN. EXPERIENCE OF THE CARDIOLOGY DEPARTMENT AT IBN ROCHD HOSPITAL UNIVERSITY IN CASABLANCA.

H. BENDAHO, M. NJIE, K. BADAoui, S. ABOURADI, Z. SOUKAINA, M. NJIE, M. AMRI, M. TAMIR, M. HABOUB, S. AROUS, G. BENNOUNA, A. DRIGHIL, L. AZZOUZI, R. HABBAL

MOROCCO

Introduction:

Left ventricular longitudinal systolic function as well as longitudinal global strain (GLS) represent sensitive markers of subclinical LV systolic dysfunction. They are often altered in tight calcified aortic stenosis (AS) while the ejection fraction (LVEF) is preserved for a long time.

The objective of our study was to assess the degree of early impairment of LGS and LV longitudinal systolic function compared to LVEF, thus their prognostic value in tight AS.

Materials:

We conducted a prospective study, from October 2017 to June 2022, on patients with valvulopathies, collected from the day hospital, at the cardiology department of the CHU Ibn Rochd in Casablanca.

We compared patients with tight BCR (G1) and those with moderately tight BCR (G2) and compared LVEF to SGL and peak S wave at the mitral annulus (S'VG) in the 2 groups.

Results:

Over the 4 years of study, out of a total of 720 patients with valvular heart disease, 252 had AS, 101 of which were isolated (39.9%). The mean age was 58.6 years (+/-10), with a sex ratio (M/F) of 0.7.

The mean LVEF was 56.15% in G1 and 57.2% in G2, the mean SGL was -14.1 +/- 3.34% in G1 versus -16.1 +/- 4.01% in the G2. LVS was significantly more altered in G1 (average LVS at 6cm/s versus 13cm/s in G2). SGL was altered while LVEF was still preserved in 68% and 34% respectively in the 2 groups (p=0.82 and 0.02).

	G1	G2
LVEF	56,15%	57,2%
LVS	6cm/s	13cm/s
SGL	-14,1 +/- 3,34%	16.1 +/- 4,01%

Conclusion:

Our study showed the interest of the systematic evaluation of the systolic longitudinal function of the LV as well as the SGL since an alteration of these parameters influences the prognosis of patients with AS, which underlines the importance of incorporate GLS into AS evaluation algorithms.

Submission ID: 1383

GENDER CAN INFLUENCE PARAMETERS AND PROGNOSIS OF MITRAL STENOSIS? EXPERIENCE OF THE CARDIOLOGY DEPARTMENT OF THE IBN ROCHD CASABLANCA HOSPITAL CENTER

H. BENDAHO, S. ZAHRI, M. NJIE, K. BADAoui, E. TAMIR, M. AMRI, M. HABOUB, S. AROUS, G. BENNOUNA, A. DRIGHIL, L. AZZOUZI, R. HABBAL

MOROCCO

Introduction:

Mitral stenosis (MS) is the most common valvular disease in Morocco, often due to acute articular rheumatism. It affects women more frequently. The aim of our study was to compare the clinical

and echocardiographic characteristics and prognosis of MS according to gender.

Materials and methods:

We conducted a prospective study, from October 2017 to June 2022, on patients with valvulopathies, collected from the day hospital, at the cardiology department of the CHU Ibn Rochd in Casablanca.

We compared 2 groups: Group I (men), Group II (women). Study analysis was performed using SPSS version 20 software.

Results:

Over the 4 years of study, out of a total of 720 patients with valve disease, 331 patients had an MS (46%), of which 194 were tight.

The average age was 60 years (+/- 10.27), with a sex ratio (M/F) of 0.7. We formed two groups: 96 men 28.9% (group I) and 235 women 71.1% (group II). Comparison of clinical data (history of rheumatic fever, repeated angina, stage of dyspnea, palpitations) revealed no significant difference, however there is a higher incidence of left atrial electrical hypertrophy in group I (p<0.001).

Regarding the echocardiographic data, in men, the left atrium was more dilated (p=0.049), the mitral surface was tighter (p=0.024) and the right ventricular dilatation was more frequent (54% vs 28% with p=0.036). There was no significant difference in mean gradient, calcifications and therapeutic indication.

Conclusion:

Our study suggests that MS in humans is more severe with more impact on the size of the left atrium as well as on that of the right ventricle, without valvular anatomical difference and therefore without influence on the therapeutic indications.

Submission ID: 1388

INSIGHTS INTO THE CLINICAL COURSE AND THERAPEUTIC RESPONSE OF ANTHRACYCLINE-INDUCED CARDIOTOXICITY IN BREAST CANCER PATIENTS: CASABLANCA CARDIO-ONCOLOGY UNIT EXPERIENCE

AMIRA ABOURICHE, HAJAR BENDAHO, ANASS MAAROUFI, SOUKAINA ZAHRI, SAMIA EJEBELI, LEILA AZZOUZI, RACHIDA HABBAL, SOUKAINA LABDELLAOUI, SOUHA SAHRAOUI, NEZHA TAWFIQ

MOROCCO

Background

Anthracycline-induced cardiotoxicity is a rapidly evolving disease that can lead to chronic heart failure. Despite dosing limitations, the prevalence of anthracycline-induced cardiac dysfunction is estimated to be 6% for explicit heart failure and up to 18% for subclinical cardiac dysfunction.

The purpose of this study was to determine the clinical significance of anthracycline-induced cardiomyopathy (AC-CMP) and its response to treatment for heart failure (HF).

Methods

We included 121 patients with a > 10% decrease in left ventricular ejection fraction (LVEF) with a value < 50% due to AC-CMP and

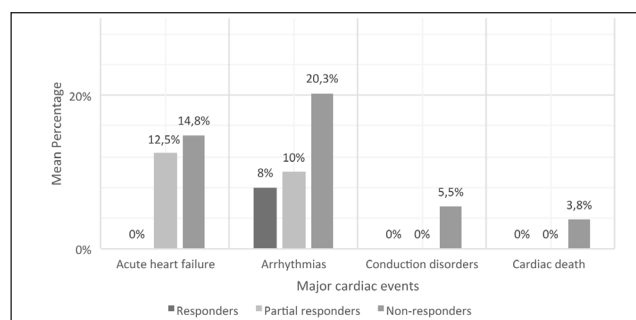


Figure 1: Major Cardiac Events in the 3 Study Groups

after exclusion of coronary artery disease. LVEF was measured at enrollment and remeasured periodically during a mean follow-up of 26 ± 8 months. Patients were classified as responders, partial responders, or non-responders based on their LVEF recovery. Serious adverse cardiac events were also recorded during the follow-up period.

Results

Treatment of HF had a response rate of 22%, a partial response rate of 33%, and a nonresponse rate of 45%. Comparing responders, partial responders and non-responders, responders had a lower rate of cumulative cardiac events (8%, 22% and 44%, respectively; p 0.003) (Fig.1). The percentage of responders decreased with increasing time between the end of chemotherapy and the start of HF treatment; no complete recovery of LVEF was observed after 11

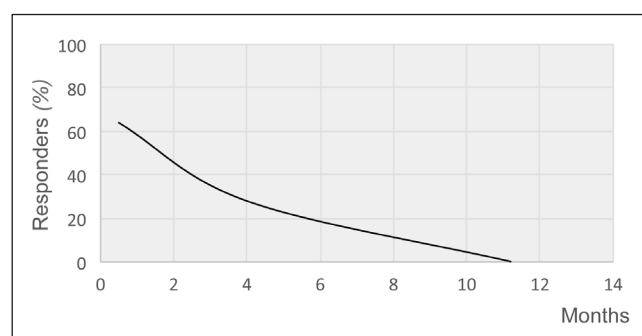


Figure 2: Percentage of Responders Based on Time between Anthracycline end and HF Therapy initiation

months (Fig. 2).

Conclusion

AC-CMP early detection and appropriate HF treatment can lead to an improvement in LVEF and a decrease in cardiac events. This highlights the importance of establishing a monitoring pathway using biomarkers and echocardiography.

Submission ID: 1392

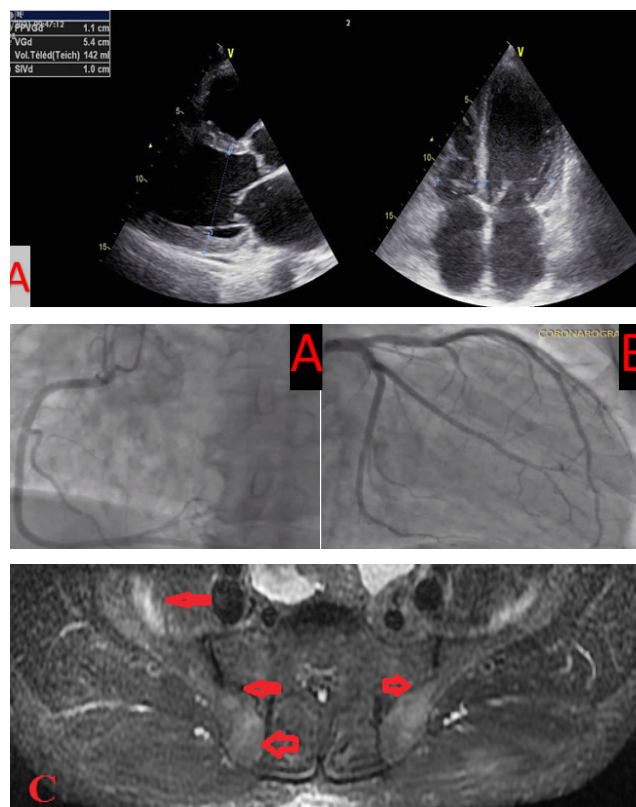
A SEVERE NON-ISCHEMIC HYPOKINETIC CARDIOMYOPATHY REVEALING AN AXIAL ANKYLOSING SPONDYLITIS: A CASE REPORT

OUMAYMA HATTAB, NOHA EL OUAFI
MOROCCO

Background

Ankylosing spondylarthritis is a chronic rheumatic disease that affects the vertebral column and sacroiliac joint primarily, and peripheral joints secondarily. Meanwhile it can have extra-articular manifestations such as cardiac, pulmonary, ophthalmologic, and neurologic. Cardiovascular involvement is a well-known side effect of AS, associated to a higher mortality and morbidity rate, the disease spectrum is large, comprising aortitis, valvular heart disease, conduction abnormalities, and cardiomyopathy. Interestingly, dilated cardiomyopathy has been associated with ankylosing spondylarthritis and reported in only a few cases in the literature, but the pathophysiological mechanisms of this association remain poorly understood.

Here we report a case of a 50-year-old male without additional cardiovascular risk factors who was admitted to our cardiology department to manage an acute heart failure. His routine blood test was normal, he had normal coronary arteries on cardiac catheterization and his transthoracic echocardiography showed a newly severe hypokinetic cardiomyopathy. Further investigations revealed ankylosing spondylarthritis (AS) fortuitously diagnosed. He responded well to diuretics and non-steroidal anti-inflammatory drugs. The patient reported an improvement in his cardiac and joint symptoms, and repeat echocardiography showed an improvement



of his ejection fraction. AS is part of the group of chronic inflammatory diseases that can have many extra-articular manifestations including cardiac injuries with poor outcomes.

This association, which remains rare and not sufficiently studied. Among this case, we aim to highlight the cardiac injuries in patients with ankylosing spondylarthritis (AS).

Submission ID: 1397

OSTIAL STENTING VERSUS LEFT MAIN CROSS-OVER STENTING IN ISOLATED OSTIAL LEFT ANTERIOR DESCENDING ARTERY DISEASE

AHMED MAKNI, TARAK ELLOUZE, SALMA CHARFEDDINE, RANIA HAMMAMI, AFIF REKIK, AMINE BAHLOUL, SOUAD MALLEK, FATEN TRIKI, MOUNA HENTATI, AÏMAN GHRAB, LEILA ABID

TUNISIA

Introduction:

Ostial lesion of left anterior descending coronary artery (LAD) remains challenging because of the unpredictable involvement of distal left main coronary artery (LM) which has been already suggested in intravascular ultrasound studies.

Objective:

We evaluated the impact on short, mid and long-term outcomes of ostial LAD disease treated by means of ostial stenting (the floating-stent) or left main (LM)-to-LAD cross-over stenting.

Methods:

We included all patients between the 1st October 2012 and the 1st May 2018, with significant and isolated stenosis of the ostial LAD (ostium or the first 3 mm at the origin of the LAD) objectified at the coronary angiography and treated by percutaneous coronary intervention (PCI). A stenosis of the ostial LAD was considered significant if it is judged to be $\geq 50\%$ at the coronary angiography. The complexity of the lesions and coronary disease was evaluated

Parameter	LM cross-over	ostial stenting	p
Male	27 (41,7%)	24 (40%)	
Age	66,4±9,1	61,3±11,8	0,06
HTA	20 (33,3%)	10 (16,7%)	0,01
Diabetes	13 (21,7%)	11 (18,3%)	0,39
Dyslipidemia	7 (11,7%)	5 (8,3%)	0,37
Clinical presentation:			<0,001
Stable Angina	16 (26,7%)	3 (8,3%)	
NSTEMI	9 (15%)	10 (16,7%)	
STEMI	5 (8,3%)	17 (28,3%)	
Coronary status:			1
single-vessel disease	16 (26,7%)	16 (26,7%)	
two-vessel disease	9 (15%)	9 (15%)	
Triple vessel disease	5 (8,3%)	5 (8,3%)	
Angle IVA-CX	74,8±20,3	77,6±17,7	0,56
Degree of initial stenosis	80,8±7,5	91,4±10,3	<0,001
Distal reference diameter	3,5±0,2	3,2±0,4	0,003
DES Implanted	27 (90%)	15 (50%)	0,001

Table 1: Results of the comparative study between the two groups according to the technique of angioplasty

according to ACC / AHA classification of coronary lesions. Patients have been stratified according to the stenting techniques adopted: ostial stenting (OS) or LM cross-over (CO).

The primary endpoint was the occurrence of major cardio-cerebrovascular events (MACCE) during the follow-up period of 12 months

Results:

Sixty consecutive patients (49 males, mean age 63.9±10.8 years old) have been analyzed. In CO patients the SYNTAX score (23.2±3.6 vs 17.9±4.2, p=0.04). On a mean follow-up of 11.06± 1.9 months, major adverse cardiac events (MACE) and target vessel revascularization (TVR) were 26.6%. Restenosis was higher in the OS than in CO group of patients and was located angiographically at the ostium (p=0.02). The 60 lesions of ostial LAD and associated lesions were revascularized. Two revascularization strategies were adopted: 50% (n = 30) of the patients had initially a "provisional-T-stenting" of the distal TCG bifurcation against 50% (n = 30) of patients who had ostial implantation stent with a slight protrusion in the LM bifurcation. The stenting procedure: the "float stenting technique" was associated

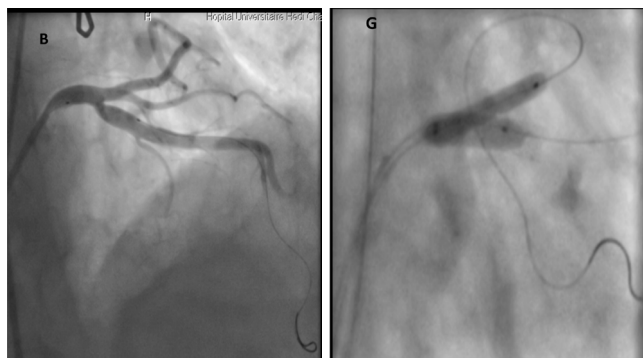


Figure 1: Angioplasty of the ostial IVA according to the technique TCG - IVA

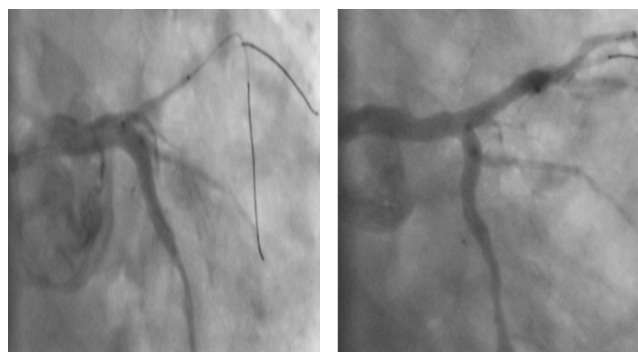


Figure 2: Angioplasty of the ostial IVA according to the technique Floating stenting in one of our patients

with a higher MACCE risk. The MACCE rate was higher with floating stenting in the order of 21.6% compared to 8.3% for cross-over stenting, with a statistically significant difference (p = 0.02).

Conclusion:

On long-term follow up CO appeared superior to OS technique for isolated ostial LAD disease particularly in calcified lesions.

Submission ID: 1398

HEART FAILURE WITH PRESERVED EJECTION FRACTION: ASSOCIATION BETWEEN THE LEFT ATRIUM STRAIN AND THE NT-PROBNP

RIDHA FEKIH, SAOUSSEN ANTIT, MARWA ABDELHEDI, KALTHOUM DRIDI, ELHEM BOUSSABEH, LILIA ZAKHAMA

TUNISIA

Background:

Plasma concentration of NT-ProBNP is recommended as initial diagnostic test in patients with symptoms suggestive of Heart failure (HF) with preserved ejection fraction (HFpEF). The Peak atrial longitudinal strain (PALS) has been proposed as an alternative approach for left ventricular diastolic function assessment. Thus, we searched for a correlation between the PALS and the NT-ProBNP in patients with suspected HFpEF.

Methods:

This is a prospective descriptive study that included 67 patients with suggestive symptoms of HF, explored in the cardiology department of the hospital of the internal security forces of Marsa and having consulted between November 2021 and Mars 2022.

Results:

The mean age was 60±11 years, with a sex ratio of 0.76. Hypertension and obesity were the most common cardiovascular risk factors (80% and 51% respectively). Explorations objected a median NT-ProBNP of 76 mmHg [49-143] and a median PALS of 30.2 [23-32.4]. A value of NT Pro-BNP ≥125 pg/ml was found in 33% of the patients. In univariate analysis, PALS was significantly lower in patients with NT Pro-BNP ≥125 pg/ml (p= 0.02). In bivariate analysis, PALS was significantly and negatively correlated with NT-Pro BNP (p= 0.003, r= -0.36). The analysis of the Receiver operating characteristic curve showed that a value of PALS < 30.2 (sensitivity= 63%, specificity= 77%) increases the likelihood of NT-Pro BNPI ≥125 pg/ml by 5.6 (OR= 5.6, 95% CI: 1.72-18.1).

Conclusion:

PALS, easily measured by echocardiography, could be used as an alternative parameter in the diagnosis of HFpEF.

Keywords:

Heart failure with preserved ejection fraction, NT-ProBNP, Left atrium strain.

Submission ID: 1400

EVALUATION OF RIGHT VENTRICULAR DYSFUNCTION CONCOMITANT TO LEFT VENTRICULAR DYSFUNCTION IN CARDIOTOXICITY INDUCED BY TRASTUZUMAB IN PATIENTS FOLLOWED FOR HER2+ BREAST CANCER: EXPERIENCE OF THE CARDIO-ONCOLOGY UNIT AT IBN ROCHD HOSPITAL UNIVERSITY, CASABLANCA.

H. BENDAHO, A. ABOURICHE, A. MAAROUFI, S. BELKOUCHIA, H. KARMOUCHI, S. ZAGDANE, S. EJJEILI, M. HABOUB, S. AROUS, G. BENNOUNA, R. HABBAL, S. ZAFAD, M. DAKIR, K. FARES ARAB, S. SAHRAOUI, N. TAWFIK

MOROCCO

Introduction:

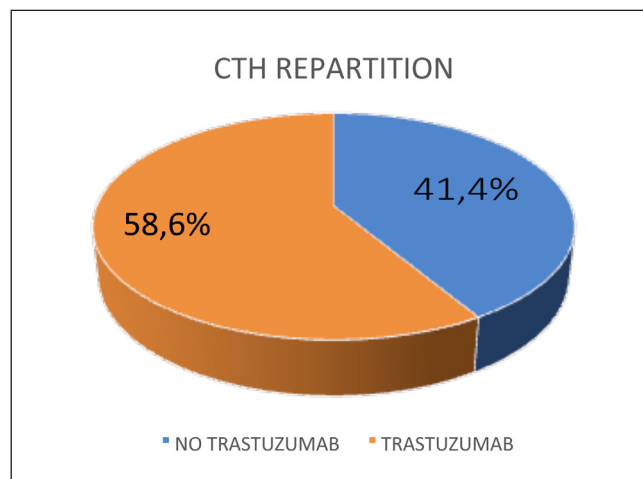
Trastuzumab (TZ), a monoclonal antibody, is used for the treatment of HER2- positive breast cancer, with a marked improvement in its prognosis. However, it is associated with significant left ventricular (LV) cardiotoxicity. But TZ related right ventricular (RV) dysfunction and its prognostic implications have rarely been reported.

Objective:

Determine the incidence and prognostic value of RV dysfunction cardiotoxicity.

Method:

We conducted a prospective study carried out at the Casablanca cardio-oncology unit from January 2017 and April 2022. The echocardiographic evaluation is carried out pre and post chemotherapy. LVEF, RV Function (Systolic Tricuspid Annulus Plane Excursion (TAPSE) and Peak the S wave in pulsed tissue Doppler mode (S'VD), pulmonary arterial pressure (PAPS), Vmax of the TI, the size of the IVC, were measured by echocardiography.



Results:

A total of 2329 patients were recruited to the cardio-oncology unit with a total of 2284 patients diagnosed with breast cancer, the average age was 53 ± 11 years. Of these patients, 1338 (58.6%) were on Trastuzumab. Trastuzumab-induced cardiotoxicity (TIC) was defined as a decrease in LVEF $>10\%$ at the lower limit of normal of 50%, after administration of trastuzumab. An alteration of LVEF was found in 306 cases (13.4%). Of this patients, 214 (70%) were symptomatic. Concerning the alteration of the RV concomitant with the alteration of the LV, 51 patients (16.8%) had a TAPSE <17 mm with an S'RV <9.5 m/s, with signs of right overload defined by PAPS >34 mmHg in 18 patients, Vmax >3.4 m/s in 14 patients, and dilated IVC in 13 patients.

During the follow-up, the cessation of chemotherapy for all

ECHOCARDIOGRAPHIC PARAMETRS	NB PATIENTS
Alteration of LVEF	306 cases
Alteration of the RV (TAPSE <17 mm with an S'RV <9.5 m/s)	51 cases
PAPS >34 mmHg	18 patients
Vmax >3.4 m/s	14 patients
Dilated IVC	13 patients.

patients associating the biventricular alteration was mandatory with administration of the treatment of heart failure: beta-blocker, ACE inhibitor, and Aldactone and close monitoring every month.

Reversibility was noted in 17 patients with biventricular cardiotoxicity, with a control LVEF of $53\% \pm 5$, and a TAPSE >18 mm, after 6 months of post-chemotherapy follow-up.

Conclusion:

TIC in patients with HER2+ breast cancer is often reversible. But the presentation of a concomitant dysfunction of the LV and the RV makes this reversibility weaker.

This suggests that RV dysfunction has very important prognostic value and its persistence during follow-up needs to be evaluated in further studies.

Submission ID: 1401

MANAGEMENT OF HYPERTENSION IN SEVERE FORMS OF POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROM (PRES)

H.EL GHIATI, J. FAGOURI, N. MOUINE, A. BENYASS, H.BALKHI
MOROCCO

Background:

The PRES is a clinical-radiological syndrome indicating spontaneously reversible brain suffering. It combines essentially neurological manifestations with white matter signal abnormalities in magnetic resonance imaging.

The aim of our work is to focus on the clinical and evolutionary features of severe forms of PRES in order to identify therapeutic (especially the management of hypertension) and prognostic considerations.

Materials and methods:

This is a retrospective study conducted in the surgical intensive care unit (ICU) of the Mohamed V Military Training Hospital of Rabat over a period of 13 years including severe forms of PRES.

Results:

Eleven cases of PRES in its severe forms have been collected. The average age was 30 years with a clear predominance of women (90.91%). High blood pressure was present in all cases. Neurological signs were mainly represented by generalized seizures, headache and confounding syndrome. Two patients had status epilepticus, while one had respiratory distress following acute pulmonary edema. In addition, one patient had brainstem injury. After adequate medical management, the evolution was favorable in all patients with complete clinical-radiological reversibility despite their initial severity.

Conclusion:

Management of hypertension is crucial in serious forms of PRES. An adapted treatment helps prevent permanent neurological sequelae and ensure clinical-radiological reversibility.

Submission ID: 1402

RHEUMATIC MITRAL VALVE REGURGITATION DIAGNOSED AFTER DEVICE CLOSURE OF SECUNDUM ATRIAL SEPTAL DEFECT IN A 6-YEAR-OLD GIRL FROM ETHIOPIA: CASE REPORT. CASE REPORT

TAMIRAT MOGES, HELEN MINTESINOT, KUMELACHEW GETAHUN, ALI DAWD MOHAMED

ETHIOPIA

Background:

Severe mitral valve regurgitation and Atrial septal defect are seldom reported due to rheumatic etiology. Objective: - We aimed to report an unusual coincidence of Atrial septal defect (ASD) with rheumatic mitral valve regurgitation (RMVR) and to discuss the clinical findings.

Case report:

A 6-year-old female child was treated with transcatheter closure of a large ASD (15mm) using a 17 mm size Amplatzer septal occluder (ASO) some 2 years back. MV apparatus was reported normal at the initial and the post-operative echocardiographic study. One year and 7 months after her procedure, she presented to the pediatric emergency ward with shortness of breath, orthopnea, paroxysmal nocturnal dyspnea and bilateral pedal edema. She was admitted as NYHA class 4, class C heart failure. She had cardiomegaly on the Chest X-ray. ECG showed bi-atrial and ventricular enlargement. Echocardiographic study showed well-functioning ASO in its proper position without dislodgement or impingement of the device on the valve leaflets. The anterior mitral valve leaflet (AMVL) was markedly thickened and had restricted motion. The posterior mitral valve leaflet (PMVL) was also thickened and foreshortened. Color-doppler study showed severe eccentric MR. A diagnosis of well-functioning ASD device with severe RMVR was made and secondary prophylaxis was started with benzathine penicillin 600,000 iu IM on monthly basis. She was treated for heart failure and discharged in

good condition to be linked to the cardiac surgery unit. Discussion: MV disease coexisting with an ASD could either be congenital or acquired. The echocardiographic finding in the current patient fulfils the world heart federation (WHF) criteria for the diagnosis of RHD. In addition, the patient is from rheumatic fever high endemic area and the common complications of ASO described in the literature were absent. Although, device-associated damage of the MV is considered when an oversized ASD-device causes continuous traction on the insufficient rim to the mitral annulus resulting in annular dilatation, the size of the ASO used in the current patient was appropriately sized. The current case report helps to draw attention to the uncommon association of severe RMVR with transcatheter closure of a large ASD and shares a similar experience. Conclusion: This is a rare coincidence between congenital ASD with RMV disease which requires careful investigation and decision.

Keywords: ASD, Rheumatic, Mitral regurgitation

Submission ID: 1405

DIABETES MELLITUS PREDISPOSES TO THE RISK OF CARDIOVASCULAR MORTALITY IN PATIENTS WITH BREAST CANCER? EXPERIENCE OF THE CARDIO-ONCOLOGY UNIT AT IBN ROCHD HOSPITAL UNIVERSITY, CASABLANCA.

H. BENDAHO, A. ABOURICHE, A. MAAROUFI, Y. ETAGMOUTI, H. KARMOUCHI, Z. AMMOURI, S. BELKOUCHIA, M. HABOUB, S. AROUS, G. BENNOUNA, R. HABBAL, M. DAKIR, S. ZAFAD, K. FARES ARAB, S. SAHRAOUI, N. TAWFIK

MOROCCO

Introduction:

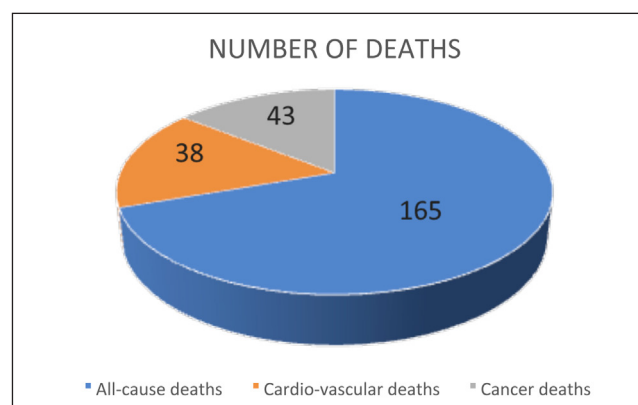
Type 2 diabetes mellitus (DM) is a known cardiovascular disease (CVD) risk factor that is also associated with an increased risk of breast cancer (BC) and a poorer prognosis according to recent studies.

Objective:

The aim of our study was to assess the impact of DM on all cause, cancer-specific, CVD-related and kidney-disease mortality in BC patients.

Methods:

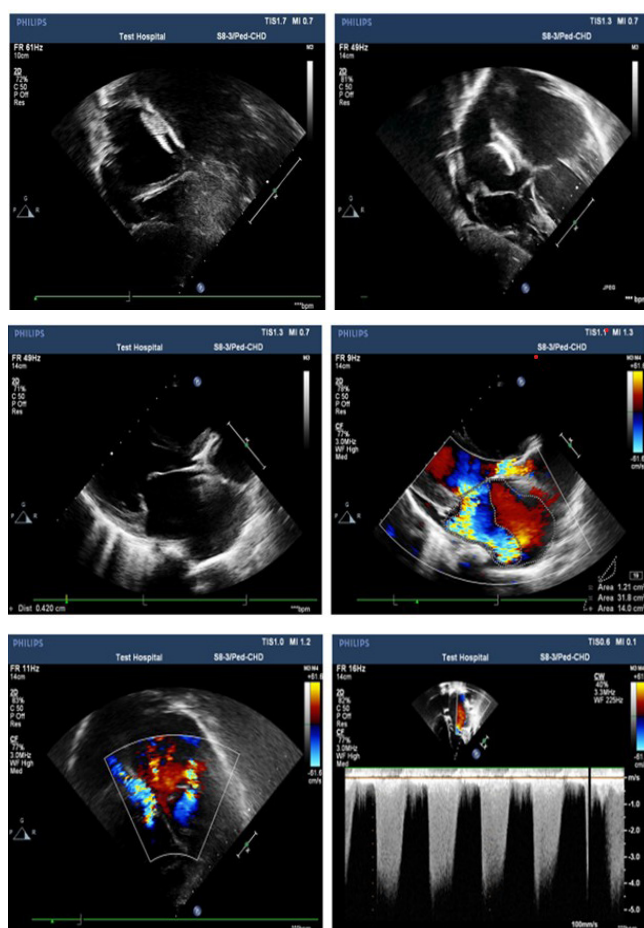
This retrospective study included 2284 female BC survivors recruited from the registry of the cardio-oncology unit of Casablanca, who were diagnosed with primary invasive BC between 2017 and 2022 and an age-matched comparison group without BC. We estimated multivariable-adjusted hazard ratios (HRs) for mortality rates with 95% confidence intervals (CI).



Results:

Among BC patients (N=2284), over a median follow-up of 8 years, we estimated all-cause deaths, cancer and CVD deaths respectively to 165, 43 and 38.

When comparing mortality in women with and without breast cancer, we found that DM was associated with : all-cause mortality



CAUSES OF MORTALITY	P VALUE
All-cause mortality	p = 0,073
Cancer-specific mortality	p = 0,19
CVD-specific mortality	p = 0,039
Kidney disease mortality	p = 0,093

[HR 95% CI : 1.41 (1.13, 2.05) versus 1.77 (1.36, 2.12)] (p= 0,073) in controls; cancer-specific mortality (HR 95% CI :1.64 (1.03-2.78) versus 2,12 (1,17, 3,27)] (p=0,19), and CVD-specific mortality [HR 95% CI : 1.54 (1.12, 1.83) versus 1.83 (0.97, 3.72)] (p=0,039) and kidney disease mortality (HR 95% CI : 2.11 (1.65-2.72) versus 1,76 (1,19-3,31).

Conclusions:

Our study showed a positive association between history of physician-diagnosed DM and risk of CVD-related mortality as well as kidney disease mortality in BC patients compared to women without BC. However, BC survivors with DM had similar risk of all-cause and cancer-specific mortality during the study period. Greater attention on diabetes management is recommended in BC survivors with diabetes, especially if associated with other CVD risk factors.

Submission ID: 1426

RIGHT VENTRICULAR THROMBUS REVEALING BEHCET'S DISEASE

LOKMAN HAFSA, OUAOUICHA HIND, RAOUI JIHAD, NAWAL DOGHMI

MOROCCO

Introduction:

Behçet's disease is a multisystemic, inflammatory disease of unknown etiology. It characterized with the triad of uveitis, oral and genital ulcers. Intracardiac thrombus is a rare but serious complication of disease disease. A 34-year-old man was hospitalized into our department with a history of genital ulcers history and thromboembolic disease. Transthoracic echocardiography revealed a right ventricular thrombus. After three months of treatment with anticoagulant, corticosteroid and cyclophosphamide the intracardiac thrombus has been resolved.



Figure 1: Apical four chamber view chamber showed a thrombus in the right ventricle.in the right ventricle.

Submission ID: 1427

INFERIOR STEMI REVEALING TYPE A AORTIC DISSECTION

OUAOUICHA HIND, LOKMAN HAFSA, HANAA BOUHDADI, ROCHDE SAYAH

MOROCCO

Introduction:

Type A aortic dissection with concurrent STEMI is relatively rare. However, it can be potentially fatal and easily misdiagnosed as STEMI alone. Misdiagnosis will lead to inappropriate administration of anticoagulant and thrombolytic therapy and delayed surgical repair of the aorta. When a patient presents with chest pain and ST elevation on EKG, STEMI should not be the only diagnosis considered. By using bedside available information, detailed history taking and focused physical examination, it is possible to avoid a mistaken diagnosis. Here we report a case of Stanford type A aortic dissection with STEMI that was initially misdiagnosed as sole acute inferior wall myocardial infarction.

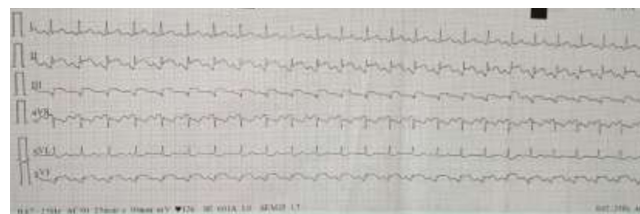


Figure 1: EKG showing the ST elevation with EKG showing the ST elevation with concomitant Q waves in the inferior leads.

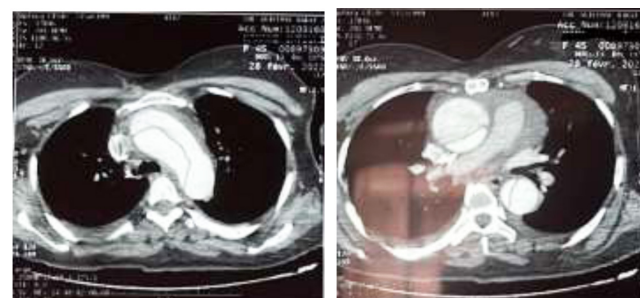


Figure 2: Chest CT showing the intimal flap and the 2 lumens.

Submission ID: 1435

POSTPARTUM DILATED CARDIOMYOPATHY ASSOCIATED WITH PULMONARY EMBOLISM RELEVANT TO APS(ANTIPHOSPHOLIPID SYNDROM): A RARE ASSOCIATION (CASE REPORT)

ZAKARIA EL MARRAKI, ADAM BOUZHIR, JAOUAD NGUADI, NAJAT MOUINE, ATIF BENYASS

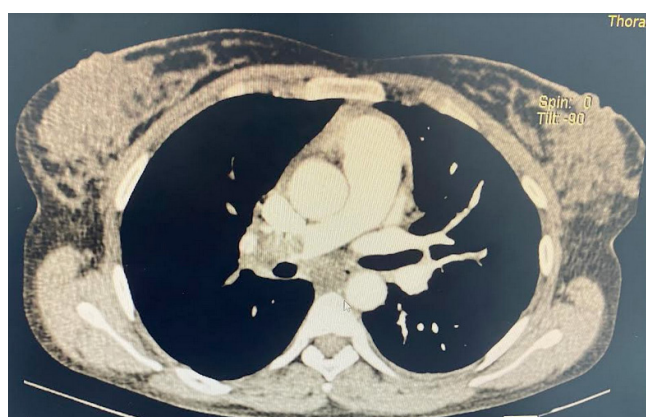
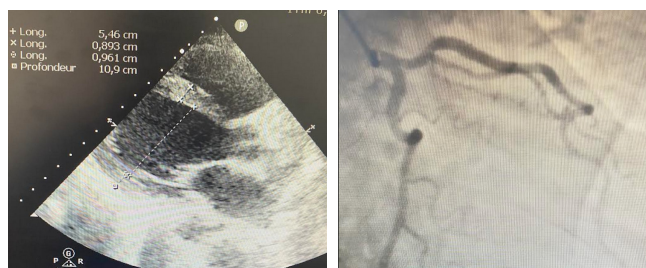
MOROCCO

Background:

Antiphospholipid syndrome is a rare entity that must be systematically evoked in front of a picture of recurrent miscarriages associated with venous and/or arterial thrombosis, its diagnosis is based on a set of clinico-biological arguments. In rare cases, it can be associated with postpartum cardiomyopathy, which is itself defined by a dysfunction of the left ventricle with an LVEF<45%, which may or may not be associated with a dilation of the left ventricle.

In this context we report the case of a 33 year old patient with cardiovascular risk factors such as arterial hypertension poorly balanced under hygienic measures and two previous miscarriages and repeated phlebitis, She was admitted to the emergency room

for the management of acute dyspnea related to a proximal right pulmonary embolism diagnosed by thoracic angioscan and in whom the transthoracic echocardiography had objectivated a dilated left ventricle with an impaired LVEF and in whom the coronary angiography came back without particularity, as part of the etiological work-up, a biological work-up was carried out, which came back in favour of an antiphospholipid syndrome



Clinical criteria	Venous thrombosis (e.g., deep vein thrombosis, pulmonary embolism, unusual site venous thromboembolism)
	Arterial thrombosis (e.g., coronary artery disease, transient cerebral ischaemia or stroke, peripheral artery disease)
Laboratory criteria	Obstetric complications: • Three or more unexplained consecutive spontaneous abortions <10 th week of gestation. • One or more unexplained deaths of a morphologically normal fetus ≥10 th week of gestation. • One or more premature births of a morphologically normal neonate <34 th week of gestation due to eclampsia, severe pre-eclampsia, or placental insufficiency
	Lupus anticoagulant, detected according to international guidelines Anti-cardiolipin antibodies, IgG, or IgM isotype, at high titre (>99 th percentile of normal controls) Anti-β2 glycoprotein-I antibodies, IgG, or IgM isotype, at high titre (>99 th percentile of normal controls)

Submission ID: 1436

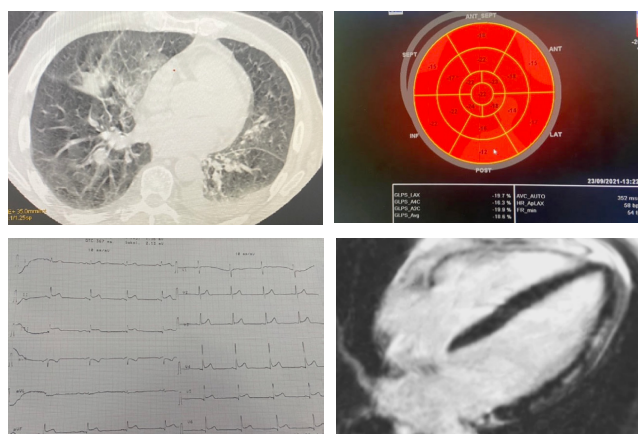
POST-COVID MYOCARDITIS SIMULATING ACUTE CORONARY SYNDROME

ZAKARIA EL MARRAKI, ADAM BOUZHIR, JAOUAD NGUADI, NAJAT MOUINE, ATIF BENYASS

MOROCCO

Background:

Acute myocarditis corresponds to an acute inflammation of the myocardium whose origin is most often viral. Several viruses can be incriminated to note the parvovirus B19, the virus herpes of the group 6 and to a lesser degree the virus of the hepatitis C (VHC) [18,19]. Since 2019 and with the discovery of SARS COV2 some cases of myocarditis associated with covid have been noted, this last association is rare and is present in only 5% of cases [8]. The diagnosis of myocarditis is sometimes difficult and can lead to confusion with acute coronary syndrome, especially in cases of ST-segment elevation on the EKG, hence the interest of magnetic resonance imaging, which has made it possible in recent years to reduce the rate of unnecessary coronary angiography, especially in



the case of young subjects with no cardiovascular risk factors. in this context we report the case of a 33 year old patient with no cardiovascular risk factors and no medical or surgical antecedents who was admitted to the emergency department for the management of acute chest pain related to acute post-covid myocarditis, the patient was initially admitted to the cardiology intensive care unit where he was put in condition and under analgesic treatment and under therapeutic protocol of covid 19 and under anticoagulation based on low molecular weight heparin at preventive dose with a good clinical evolution he was transferred thereafter to the clinical cardiology then declared outgoing under treatment of covid 19 with an appointment of control in 1 month.

Submission ID: 1437

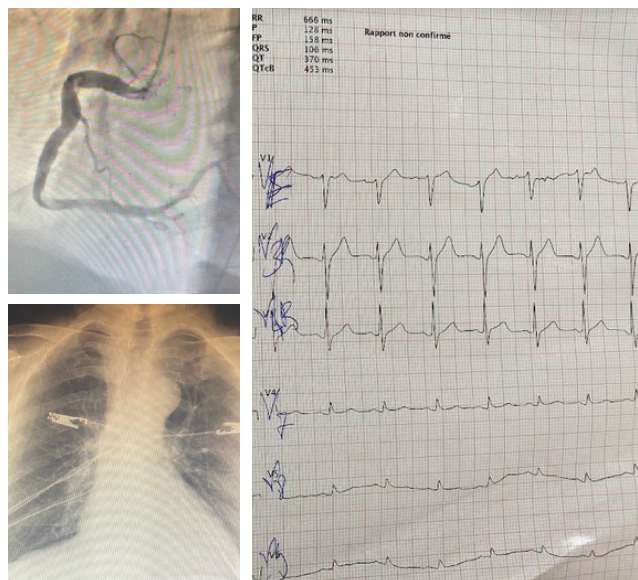
CORONARY ANEURYSM: A RARE ETIOLOGY OF CORONARY SYNDROME WITH ST SEGMENT ELEVATION (CASE REPORT)

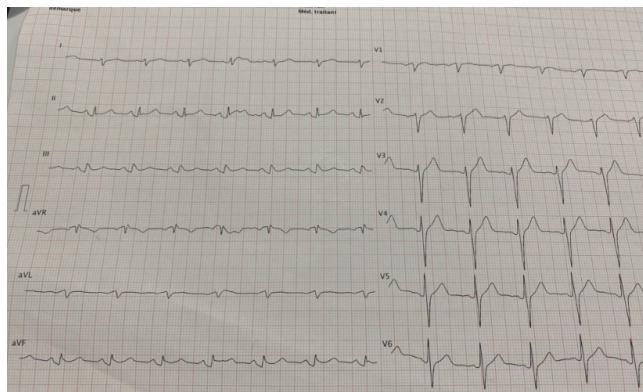
ZAKARIA EL MARRAKI, ADAM BOUZHIR, JAOUAD NGUADI, NAJAT MOUINE, ATIF BENYASS

MOROCCO

Background:

Coronary aneurysm is a rare pathology defined as a segment of the artery in which dilation exceeds the diameter of an adjacent portion (considered as a reference point) by more than 1.5 times. It affects most often the right coronary artery but the left coronary artery can also be affected with a smaller percentage. The etiologies of





coronary aneurysm are diverse and dominated by atherosclerosis, it can also be caused in rare cases by vasculitis, autoimmune diseases (polyarteritis nodosa, systemic lupus erythematosus, scleroderma), trauma (including coronary angioplasty), coronary artery dissection, rheumatic, mycotic coronary emboli, syphilis. It is most often asymptomatic but in rare cases it may manifest itself as chest pain related to an acute coronary syndrome with or without ST-segment elevation. In this context, we report the case of a 66-year-old patient with active smoking (25YP) as a cardiovascular risk factor and no medical or surgical history. He was admitted to the emergency room for acute chest pain related to an ACS with ST-segment elevation, and coronary angiography revealed a giant aneurysm of the right coronary artery.

Submission ID: 1441

LASER LEAD EXTRACTION EXPERIENCE: YES, WE CAN!

HOUDA DAHMANI, MERYEM BENNANI, JAOUAD NGUADI, AMINE ALAOUI MALIKI, J. KHEYI, HICHAM BOUZELMAT, ALI CHAIB, AATIF BENYASS

MOROCCO

Background:

Pacing and defibrillation leads may need to be removed for several reasons including infection, interference with others leads, lack of vascular access or redundancy. However, the removal of chronically implanted leads is a major technical challenge because of the extensive adhesions that develop along the course of the leads over time. The techniques to remove chronic leads have been greatly facilitated by the development of an excimer laser sheath.



Figure 1: Laser lead extraction of the RV lead

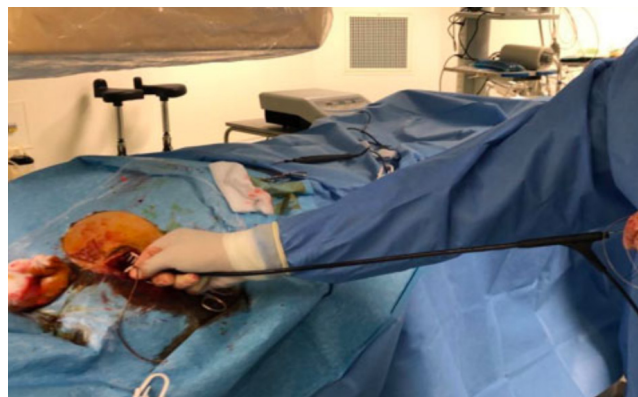


Figure 2: Representative lead extraction procedure.

Objective:

The purpose of this study is to evaluate the safety and efficiency of the Excimer laser sheath in extracting chronically implanted pacemaker leads.

Methods and results:

We undertook an analysis of the first Moroccan experience with laser extraction in 11 patients from July 2013 to June 2021. A total of seventeen lead were removed completely. Infection was the most common indication. Lead age was 7,2 years. The mean time of procedure is 3 hours. There were no complications.

Conclusion:

The Excimer laser sheath appears to be an effective and safe technique for extracting chronically implanted pacemaker leads. It can be used in combination with the currently available techniques for successful lead extraction.

Submission ID: 1444

EPIDEMIOLOGICAL STUDY OF INFECTIVE ENDOCARDITIS AT THE IBN ROCHD UNIVERSITY HOSPITAL IN CASABLANCA

MAHOUNGOU MACKONIA NOEL MASCELL, SALIM AROUS, BENOUNA GHALI, ABDENASSER DRIGHIL, LEILA AZZOUZI, RACHIDA HABBAL

MOROCCO

Introduction:

Infective endocarditis is a serious and rare disease with a changing epidemiological profile over the years.

Objective:

To study the clinical, echographic, bacteriological, therapeutic and prognostic characteristics of patients in the cardiology department of the Chu Ibn Rochd of Casablanca.

Material and method:

We conducted a retrospective, cross-sectional study in the Chu-Ibn Rochd endocarditis database from 2021-2022.

Results:

We included 110 patients of whom 68 were men and 42 were women with a sex ratio of (M/F=1.6), predominantly young in 65.5%.

Infectious endocarditis occurred:

- in 90% on a native valve, including 8% of patients with known valvulopathy
- in 8% on a prosthetic valve
- in 1.8% on pacemaker equipment
- in 6.3% on congenital heart disease.

The most common portal of entry was a central line in 3.6% of cases, followed by skin and oral entry in 2.7%.

Clinically

- Heart failure was found in 26% of cases.
 - Stroke in 8% of cases, of which 6% were ischemic and 3.6% hemorrhagic.
 - Mycotic aneurysm found in 2.7% of cases
- Staphylococcus was the most common germ in 4.5% of cases, followed by streptococcus in 3.6%.

At the ETT:

- vegetations were most commonly found on the mitral valve in 35% of cases followed by the aortic in 23.6% and then the tricuspid in 6.3%.
- Perivalvular abscesses were found in 10.9% followed by cord rupture in 9% and fistula in 6.3%.
- Disinsertion of the prosthesis was found in 2.7% of cases, resulting in 1.8% of stenotic prostheses and 0.9% of leaking prostheses.

Valve replacement was performed in 18% of our patients, i.e. 82% were treated medically alone and death was found in 16.3% of our patients.

Conclusion:

Our work has enabled us to observe that IE continues to affect a young population with rheumatic valve disease and congenital pathology, but also haemodialysis catheter users, although staphylococcus and streptococcus are co-predominant.

Submission ID: 1448

TYPE 2 DIABETICS PRESUMED TO BE NORMOTENSIVE: MASKED HYPERTENSION, URINARY ALBUMIN EXCRETION RATE AND ECHOCARDIOGRAPHIC SCREENING

SARA ABOURADI, HANANE CHOUKRANI, ANASS MAAROUFI, KHAWLA CHAWKI, GHALI BENOUNA, RACHIDA HABBAL

MOROCCO

Introduction:

Hypertension is a major risk factor for the development and progression of chronic complications of type 2 diabetes. Masked hypertension has been reported to affect 2–26% of the population.

Objective:

To analyze the impact of masked hypertension in type 2 diabetic patients with regard to microvascular complications (including microalbuminuria) and echocardiographic parameters.

Methods:

We conducted a cross-sectional study on 130 normotensive and type 2 diabetic patients. Microalbuminuria assay, echocardiography and ambulatory blood pressure monitoring (ABPM) were performed. The inclusion criteria were a diagnosis of type 2 diabetes (> 10 years no previous episode of ketoacidosis or documented ketonuria, and assessed blood pressure <140/90 mmHg on at least two occasions. Patients with creatinine >15 g/dl, other renal disease, cardiac arrhythmia, or orthostatic hypotension were excluded. χ^2 tests were used to compare clinical and laboratory data.

Results:

The main age was: 46 \pm 12 years old, Sex ratio=1.2, 42% of patients were smoker 43% have masked hypertension and the mean HbA_{1c} was 7.8 \pm 2.0%. Nocturnal systolic blood pressure was higher in patients with masked hypertension than in the normotensive group (138.8 \pm 5.5 vs 125 \pm 8.4 mmHg, p = 0.002). Albuminuria was also increased in the masked hypertensive group (22 microg/min [2.5-1.5] vs 8.1 microg/min [1.0-0.22], p =0.001), as well as the thicknesses of the interventricular septum (1.1 \pm 0.10 vs 0.84 \pm 0.9 cm, p = 0.015) and of the posterior wall (0.12 \pm 0.8 vs 0.90 \pm 0.10 cm, p =0.005).

Conclusion:

Type 2 diabetic patients with masked hypertension have higher prevalence of elevated micro and macroalbuminuria, and ventricular

wall enlargement compared to normotensive patients. Evaluation of normotensive type 2 diabetic patients with 24-h ABPM, appears to be important in identifying this high-risk group.

Submission ID: 1452

PROGNOSTIC VALUE OF DIASTOLIC DYSFUNCTION IN ACUTE MYOCARDIAL INFARCTION: A PROSPECTIVE STUDY

SARA ABOURADI, ANASS MAAROUFI, HANANE CHOUKRANI, KHAWLA CHAWKI, SOUKAINA ZAGDAN, SALIM ARROUS, GHALI BENOUNA, RACHIDA HABBAL

MOROCCO

Introduction:

During acute myocardial ischemia, left ventricular (LV) systolic dysfunction is sometimes associated with diastolic dysfunction that can sometimes precede the latter. Development of doppler echocardiography techniques has allowed the non-invasive measurement of LV diastolic filling, which correlates well with other measures of LV filling.

Aim:

The aim of our study was to demonstrate the prognostic value of diastolic dysfunction in the acute phase of acute coronary syndrome.

Methodology:

We prospectively included 123 patients admitted to the cardiology intensive care unit of Ibn Rochd Hospital in Casablanca between december 2021 and July 2022, for acute coronary syndrome with or without persistent ST segment elevation. All patients had Doppler echocardiography within the first four days of admission.

Results:

The average age of our patients was 60.27 \pm 12.35 years [28-85]. There was a slight male predominance (54.7% of the population). More than two-thirds of the patients were smokers (76.36%). One-quarter were hypertensive (23.63%), nearly half were diabetic (50.9%), and one quarter of our population had dyslipidemia. Coronary inheritance was found in 7.27% of our patients. Nine patients (16.36%) patients had high LVFP. Elevation of LVFP was a predictor of mortality (p = 0.01) and occurrence of major cardiovascular events at 6 months of follow-up (p = 0.001).

Conclusion:

The study of diastolic function and especially the evaluation of the LVFP at the acute phase of acute coronary syndrome allows to refine the stratification of patients admitted for an acute coronary syndrome and to identify a group of high risk patients to benefit from more intensive treatment.

Submission ID: 1455

SUDDEN CARDIAC DEATH RISK STRATIFICATION OF THE EARLY REPOLARIZATION SYNDROME: AN UPDATED REVIEW OF THE LITERATURE

MOHAMMED EL-AZRAK, CHARMAKE DARAR, MOHAMMED BOUTAYBI, NOHA EL OUAFI, ZAKARIA BAZID

MOROCCO

Background:

Early repolarization syndrome (ERS), once thought to be innocuous, has now been shown to be responsible, in part, for ventricular arrhythmias and sudden cardiac death occurrence, especially in young, male patients. The biggest challenge for the clinician is figuring out how to identify the patients who are most at risk for arrhythmias, so that they can adopt a preventive or secondary treatment approach, either of which is still poorly defined. This

Table 1 Summary of the various parameters associated with high arrhythmic risk in patients with early repolarization syndrome.

Clinical features

1. Men.
2. Young people.
3. A history of unexplained syncope, or a family history of SCD*.
4. Identified gene mutations.

Electrocardiographic features

1. Inferolateral ER † location.
2. Horizontal or/and descending ST-segment.
3. Notching of the terminal part of the QRS complex.
4. J-point elevation of at least 2mm.
5. J waves of long duration, wide J angle.
6. low amplitude of T waves, and low T/R ratio.
7. Presence of Q waves and T waves inversion

Association with other heart diseases

1. Association with coronary heart disease.
2. Association with another channelopathy.

*SCD: Sudden cardiac death, † ER: Early repolarization

article is an updated review of the literature that has compiled the various clinical and electrical parameters that are significant in predicting rhythmic risk in individuals with ERS. Taken together, they allow to predict the malignancy of ER pattern with a certain reliability. Further research is however needed to develop concrete risk stratification algorithms and the therapeutic strategies taken in function of it.

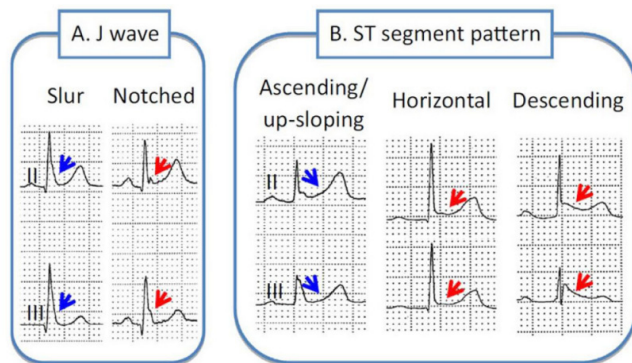


Figure 1 ER aspects

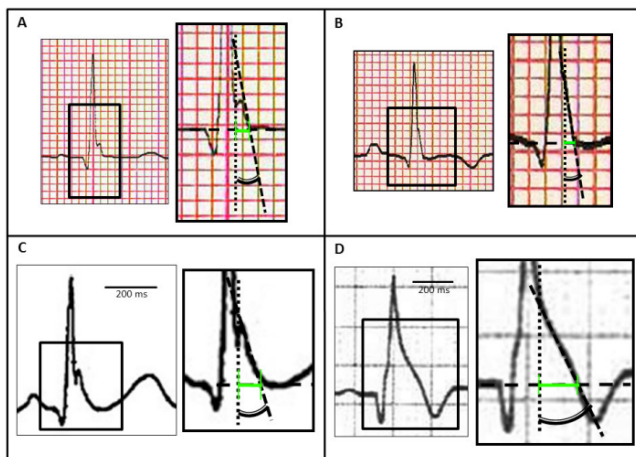


Figure 2 Duration and slope

Submission ID: 1470

ASSESSMENT OF GLYCATED HEMOGLOBIN PREDICTIVITY IN THE SEVERITY OF CORONARY ARTERY DISEASE IN PATIENTS WITH OR WITHOUT DIABETES

SLIM ABID, HICHEM DENGUIR, MOHAMED DERWICH, SAHAR KMIHA, RAHMA KALLEL, AHMED AL BATTRAOU, HASAN AL ZAIN, MALAK TALLOUH

TUNISIA

Background:

Diabetes mellitus (DM) has been identified for several years as a major risk factor for coronary artery disease (CAD) which is currently the leading cause of death worldwide. Prolonged hyperglycemia can weaken the artery walls and promotes the formation and the rupture of atherosclerotic plaques. Glycated hemoglobin (HbA_{1c}), expressed as a percentage, is a function of blood sugar control over the previous two to three months.

Generally, diabetes is controlled if the HbA_{1c} level is less than or equal to 7%. Beyond that, the risk of developing long-term complications increases.

Objective:

Access the relationships between the HbA_{1c} level in the blood and the severity of CAD in patients with or without diabetes undergoing coronary artery catheterization in an urban teaching hospital.

Method:

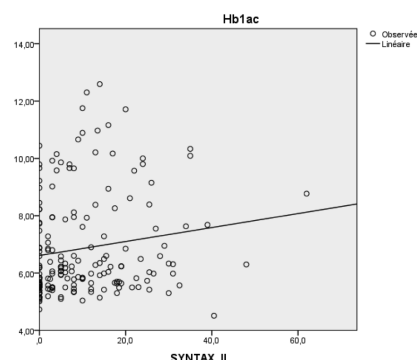
A cross-sectional study was conducted in the Cardiology Department of Gabes (Tunisia). Data were gathered from medical records of all patients who were recruited prior to cardiac catheterization for probable CAD between July (2021) and December (2021). The indications of cardiac catheterization were in accordance with international recommendations

Results:

A total of 208 patients were included in the study. Mean age was 63.1±12.04 years. Of the total 64.9% (135) were males, 32.7% (68) were diabetic, 53.4% (111) were hypertensives, 40.4% (84) were smokers and 31.3% (65) were dyslipidemia. First, we tested the normality of distribution of SYNTAX score and HbA_{1c} revealed negative concluding to using Spearman test to study the correlation between these two variable. We found that CAD severity by SYNTAX score as well as number of vessels involved was weakly related to level of HbA_{1c} using Spearman Correlation test. Increase in HbA_{1c} level was moderately correlated with disease severity and higher SYNTAX score (p-value =0.006) with a correlation coefficient equal to 0.206. A moderate increase was noted in the mean number of diseased vessels as HbA_{1c} level increases. Gender Smoking, hypertension and dyslipidemia did not show significant difference, however Age, was found to be an independent predictor of severity of CAD by SYNTAX score (p=0.02).

Conclusions:

From this clinical study, we can conclude that a moderate correlation exists between level of HbA_{1c} and severity of CAD by SYNTAX score as well as number of vessels involved in diabetics and non-diabetics and HbA_{1c} is a simply measured and reliable marker to predict the severity of CAD.



Submission ID: 1475

RIGHT VENTRICULAR INFARCTION: EPIDEMIOLOGICAL, CLINICAL AND ANGIOGRAPHIC CHARACTERISTICS AND THE OUTCOMES THROUGH THE EXPERIENCE OF A MOROCCAN CARDIOLOGY DEPARTMENT

YOUSRA BOUHADOUNE

MOROCCO

Background:

Myocardial infarction can affect any myocardial territory; however, isolated right ventricle infarction is very rare. Acute right ventricular myocardial infarction is frequently associated with inferior wall myocardial infarction (30-50%) and less frequently with anterior wall myocardial infarction; this association worsens the prognosis with a mortality of 30% compared to isolated left ventricular infarctions (6%). Early diagnosis and prompt treatment are the key for improving its prognosis.

Objective:

The objectives of this study were to evaluate the epidemiological, clinical, electrical, echocardiographic, angiographic features of the right ventricular infarction and its diagnostic, therapeutic and prognostic characteristics.

Methods:

We conducted a retrospective study including 82 patients hospitalized for right ventricular infarction admitted between November 2018 to October 2020, at the Mohammed VI hospital in Oujda in Morocco. Patients who were diagnosed with right ventricular infarction at electrocardiogram and echocardiography were recruited

Results:

Among the 500 patients hospitalized for STEMI, 82 had myocardial infarction extended to the right ventricle. Right ventricular myocardial infarction co-existed with inferior myocardial infarction in 62.2 % of cases and in 37.8% of anterior myocardial infarction, while isolated right ventricular myocardial infarction was found in only one patient. The median age was 64 years. Signs of right heart failure were present in 2.4% of patients. Six patients had hypotension, and 4 patients presented cardiogenic shock. Complete atrioventricular block was diagnosed in 8.5% of patients. Transthoracic echocardiography showed right ventricular systolic dysfunction in 20 cases while right ventricular dilatation was seen in only 9 patients. Therapeutic approach was based essentially on revascularization with and coronary angiography +/- percutaneous coronary intervention. Inferior myocardial infarction was caused by right coronary lesion in 49 patients and a circumflex artery in 13 patients, anterior myocardial infarction was caused by anterior interventricular artery in 48 patients and by circumflex artery in 5 patients. The percentage of mortality was 2.4%.

Conclusion:

Right ventricular infarction is relatively rare and mostly related to an extension of an inferior myocardial infarction. Hemodynamic instability is of worse prognosis.

Submission ID: 1481

HIGH RISK PULMONARY EMBOLISM : MANAGEMENT IN CHU IBN ROCHD CARDIOLOGY INTENSIVE CARE UNIT

ZAID AMMOURI, SAMI BELKOUCHIA, ANASS MAAROUFI, ABDENNASSER DRIGHIL, LEILA AZZOUZI, RACHIDA HABBAL

MOROCCO

Introduction:

High-risk acute pulmonary embolism (PE) is related with a high mortality risk approaching 25% and remains defined by shock or hypotension. Those numbers make it an urgent diagnosis by

favoring examinations in the patient's bed and fast therapeutic strategy. The aim of this study was to describe the clinical features of patients admitted for acute high-risk PE, the main findings, the therapeutic strategy and their prognosis.

Methods:

A retrospective study conducted on 182 patients hospitalized in our intensive care unit for PE between January 2016 and October 2018, including 37 with acute PE at high risk.

Results:

The average age of the patients with cardiogenic shock was 66.9 years, with a standard deviation of 15.6; with a higher frequency in the elderly > 70 years (P = 0.06). The sex ratio (M/F) was 0.39, the risk factors for venous thromboembolism were not different from the non-shock group. Respiratory distress chart with SpO2 < 95%, arterial hypotension < 90 mmHg systolic and tachycardia > 100bpm in 88% of cases (P = 0.003) were the main features in the clinical presentation. Electrically, no differences were found between the two groups. Echocardiography was fundamental in the diagnosis and permitted the early thrombolysis without further delay. Thrombolysis was used in 80% of patients (P < 0.001), treatment with non fractionnal heparine, dobutamine was initiated in 49% of cases (P < 0.01). Mortality was 41% compared to 7% in the non-shock group (P = 0.026).

Conclusion:

Despite rapid management and treatment thrombolytics and vasoactive drugs, high-risk acute PE remains a poor prognosis with significant intra-hospital mortality.

Submission ID: 1482

GUIDEWIRE INDUCED DISTAL OBTUSE MARGINAL PERFORATION : CASE REPORT AND REVIEW OF LITERATURE

BOUTALEB AMINE MAMOUN, FLORES VIVIAN GABRIELLA, CARLIER STÉPHANE

MOROCCO, BELGIUM

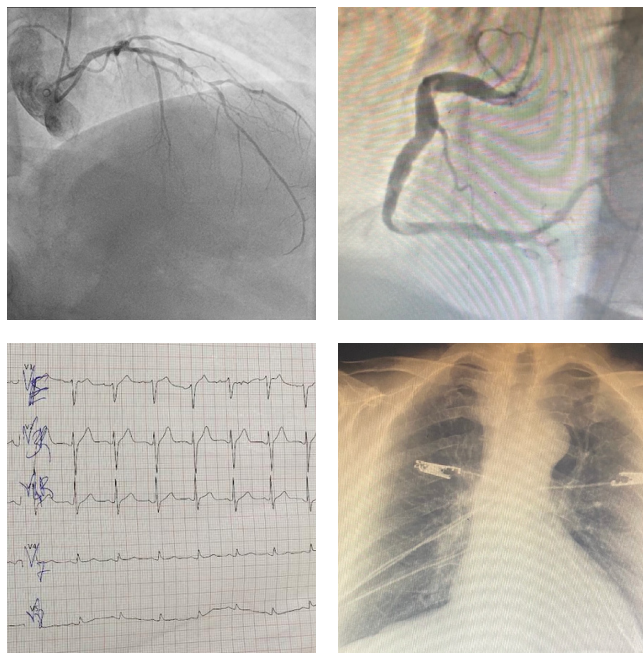
Background:

Coronary artery perforation (CAP) is a rare but a redoubtable complication of percutaneous coronary intervention (PCI) [1]. Predictive risk factors can be classified in patient's and procedure risk factors [2, 3]. Coronary artery perforation has been classified upon Ellis to three categories with increasing mortality risk at each stage [4]. Specific treatment involve prolonged balloon inflation in most cases of type II CAP and covered stents or coil induced embolization for type III depending on the CAP localization [5].

Clinical case:

A 74-years-old patient presented to the cardiology workout examination of Ambroise Pare University hospital for unstable angina. His past medical history included high blood pressure, dyslipidemia, and tobacco weaned for 20 years. Physical examination was normal and echocardiography preserved left ventricular systolic function. The biological assessment revealed CKD stage 2. Coronary artery angiography found a calcified sub occlusive stenosis of the mid left anterior descending artery (LAD) and severe stenosis of the ostial circumflex artery (LCx). The right coronary artery presented non-significant stenosis with an FFR value of 0,87 (Figure 1-2).

Regarding the two vessel disease involvement, PCI was realized the day after the coronary angiography using 7 French 4,0 Extra Back Up guiding with a balance middle weight in distal LAD and Whisper Medium support in LCx. A first Orsiro Mission 2,75x40 mm was placed in mid-LAD after pre-dilatation. After performing kissing balloon inflation of the distal LM bifurcation, a type B dissection of proximal LAD occurred requiring bailout T-and-protrusion technique using a 4,0x24mm Ultimaster Tansei in proximal LAD and Orsiro Mission 2,75x13mm in ostial LCx with good angiographic results after final kissing balloon. At the end of the procedure, the patient



was free of pain and no angiographical complications was seen. Few moments later, the patient was readmitted in the cathlab for chest pain and blood pressure decrease. Echocardiography revealed moderate pericardial effusion causing tamponade requiring immediate pericardiocentesis. Repeated angiography showed distal type III perforation of the OM treated by embolization of two detachable Concerto coils (Figure 3-4).

Conclusion:

Coronary artery perforation is a serious life-threatening complication of coronary percutaneous interventions. The location of CAP has an important implication for its specific management.

Submission ID: 1483

CORONARY ARTERY STENT TOTAL DISLODGEEMENT IN BRACHIAL ARTERY

BOUTALEB AMINE MAMOUN, AWADA AHMAD

MOROCCO, BELGIUM

Introduction:

The confirmation of coronary artery disease (CAD) is based on coronary angiography which evaluates the extent of coronary artery lesions. Percutaneous coronary interventions (PCI) have increased during the last years thanks to the improvement in coronary artery treatment techniques and materials. These interventions may present various complications. Stent loss is infrequent and may lead in some cases to serious embolism complications. Multiples retrieval techniques have been developed for this purpose but are time-consuming and require experience.

Clinical Case:

We report the case of a 59 years old patient presenting ischemic cardiomyopathy with prior stenting of the circumflex artery (LCx) in the context of acute myocardial infarction (AMI), and the mid-right coronary artery (RCA) with two drug-eluting stents (DES) in 2017. 1 year later the patient came back for very late stent thrombosis requiring new stenting. His past medical history includes weaned tobacco, high blood pressure, and dyslipidemia.

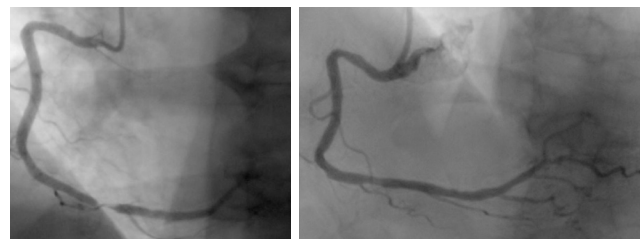
He developed in August 2022 similar chest pain symptoms with significant ST segment depression in anterolateral leads at exercise ECG.

The coronary angiography realized through the distal radial 6Fr

approach revealed a smooth left coronary artery system with good angiographic results of LCx stenting. The Mid RCA stents were patent while subocclusive stenosis was found in the third stent. New PCI of the diseased segment was intended with JR 3.5 6 Fr guiding and Whisper MS advanced through distal RCA. While advancing a XIENCE Alpine 3,5x18mm through the previous stents, an abnormal resistance was noted by the physician which attempted to retrieve it causing partial stent dislodgement in the left main coronary artery. While removal of all the guiding and the stent as a unit toward the sheath the procedure was complicated by stent dislodgement at the right radial artery. Two Whisper wires were advanced through the radial artery and after failed attempts of tracking the stent with a balloon inflated downstream we could catch the stent in the brachial artery thanks to an En Snare through 6 Fr cubital access. In the meantime, stenting of distal RCA was real realized.

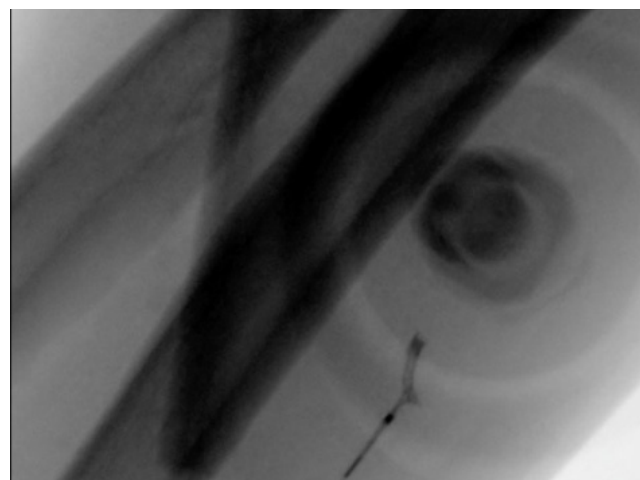
Conclusion:

Stent dislodgement is a dangerous complication of PCI and physicians should be aware of the different techniques available to prevent and treat it. In case of retrieval failure after multiple attempts, bail-out crush technique against the vessel wall is an option.



Pre-stenting

Post-stenting



Stent retrieval

Submission ID: 1489

LATE COMPLICATIONS FOLLOWING FONTAN PROCEDURE: A UNICENTER CASE SERIES

NOUHA MEKKI, KAWTHER HAKIM, RIHAB BEN OTHMEN, BEN GHORBEL CHAIMA, HELA MSAAD, SOUDANI SABRINE, FATMA OUARDA

TUNISIA

Objective:

The Fontan operation as conceived and performed by Fontan is now entering its 6th decade. Various studies with intermediate and long-term morbidity following Fontan were recently published reporting variable outcomes depending on their study cohort.

The purpose of this work is to evaluate the outcomes in terms

late complications of patients palliated with a Fontan operation in our center.

Methods:

Relevant study data was extracted from the medical files of our department. We included patients who underwent Fontan procedure in the last 34 years detailing baseline patient characteristics, Fontan surgery-related details, morbidity at latest follow-up.

Results:

Our series included a total of 28 patients. Approximately 57% were male. Tricuspid atresia was the predominant diagnosis for 39%, followed by double inlet left ventricle for 25%, and heterotaxy syndromes (10.7%).

85% of patients received surgical staging pre-Fontan. Systemic pulmonary arterial shunts, PA banding, and bidirectional cavopulmonary shunts were performed in 35.7%, 21.4%, and 57% of the cohort. The mean age at Fontan completion was 10.25 years.

The type of Fontan operation received was atrio-pulmonary for 7.14%, Bjork type for 17.8%, and 75% with extra-cardiac conduits. Only 10.7% of the procedures were fenestrated.

The mean follow-up duration was 14.96 years.

The prevalence of early complications was of 10.7% (3 patients). One patient had an epicardial pacemaker insertion two months after the procedure after for a complete AVB. Another patient underwent coronary artery bypass surgery 20 days following Fontan procedure after accidental injury of the right coronary artery. The third patient presented with an ischemic stroke and severe LV dysfunction immediately after surgery.

The prevalence of late complications was of 50%. Late arrhythmia was noted in 14.3% of patients over the course of follow-up. 10.7% developed protein-losing enteropathy and one patient had significant atrioventricular valve regurgitation. Thromboembolic events were noted in 10.7%. 14.3% required further percutaneous interventions post Fontan completion.

Conclusion:

The Fontan procedure has improved the survival of patients with a wide range of congenital cardiac malformations not amenable to either biventricular or one-and-a-half ventricle repair. Unfortunately, these patients may be subject to a variety of cardiac and non-cardiac complications requiring close follow-up and continuous.

Submission ID: 1491

PERCUTANEOUS REINTERVENTIONS FOLLOWING THE FONTAN PROCEDURE

NOUHA MEKKI, KAWTHER HAKIM, RIHAB BEN OTHMEN, BEN GHORBEL CHAÏMA, HELA MSAAD, SOUDANI SABRINE, FATMA OUARDA

TUNISIA

Objective:

As advances in cardiac surgery and postoperative care are continuously improving, patients who underwent Fontan operation are facing the need for additional cardiac reinterventions.

Through this work, we sought to determine percutaneous reintervention rates in our center following Fontan procedure.

Methods:

A retrospective review of all Fontan patients who had cardiac catheterization from January 2016 to December 2021 was performed. Hemodynamic and angiographic data that assessed extracardiac conduit or pulmonary artery stenosis data were evaluated.

Results:

In this population of 28 patients surviving the Fontan procedure, 39.29% required at least one additional cardiac intervention at a median time of 12.31 years (IQR: 0.08–29 years) following their Fontan procedure.

Among these patients, 4 patients (14.28%) underwent percutaneous reintervention during the course of follow-up.

All patients underwent Fontan procedure with an extracardiac conduit. 2 patients (50%) had fenestrated conduits.

Among these patients, 2 patients (50%) had angioplasty of the Fontan conduit following thromboembolic events with covered stents, 14 and 19 years following their Fontan procedure on a 22 and an 18 fenestrated extracardiac conduit respectively.

The remaining two patients of the group had early percutaneous reintervention after Fontan operation. A few months after Fontan procedure associated with pulmonary bifurcation plasty, one patient underwent angioplasty of both the Fontan conduit and the right pulmonary branch following symptoms of right heart failure.

The second patient developed RV severe dysfunction 20 days postoperative. Right heart catheterization revealed significant stenosis of the left pulmonary branch. An angioplasty was then performed.

No case presented with complications related to interventional catheterization.

Of the remaining population, one patient requires percutaneous closure of a large persisting left SVC causing gradually increasing cyanosis. Another patient is proposed for fenestration of an extracardiac conduit after a 'Failing Fontan'.

Conclusion:

Fontan surgery is a palliative procedure with high incidence of complications requiring careful postoperative follow-up. Surgical and percutaneous strategies are continuously developing and employed for numerous complications aiming to improve the survival and outcomes of these patients. Interventional catheterization plays an essential role in the early diagnosis.

Submission ID: 1494

PERCUTANEOUS TREATMENT OF A GIANT ANEURYSM OF CAROTID WITH A COVERED STENT

HAJLAOUI NADHEM, OUERGHI MOHAMED HICHEM, NOAMEN AYMEN, RADDAOUI HAYTHEM, BENAYED HOUSSEM, JABLON TAHA YASSIN, HAGGAI ABDEDEYEM, FEHRI WAFI

TUNISIA

Introduction:

Common carotid artery aneurysms are rare and potentially lethal. Previously, surgery was the standard treatment. However, percutaneous treatment has become an effective alternative.

Case report:

A 64-year-old-male with a medical history of high blood pressure, Amyloidosis AL with renal involvement, noted after jugular catheterization a swelling in the left side of his neck. Clinical examination revealed painless pulsating left latero-cervical mass measuring 12mm with no neurological symptoms.

Duplex ultrasound confirmed the diagnosis of an aneurysm of the internal carotid artery: left latero-cervical formation with turbulent content, this formation represses the jugulo-carotid axes and it measures 100 x 50 mm.

Percutaneous method was chosen. A Carotid angiography was performed via femoral approach with a 7F desilet and catheterization of the internal carotid artery with a JR 4 guide catheter, we crossed the lesion using a 0.35 guidewire to deploy a covered self-expanding vascular stent 8*58mm.

The exclusion of the left internal carotid aneurysm was successful.

The tumor shrank and the patient didn't need further treatment.

Conclusion:

Percutaneous placement of a covered stent seems to provide an alternative to surgery for the treatment of aneurysms with minimal morbidity and high success rates.

Submission ID: 1499

CLINICAL FINDINGS AND CHARACTERISTICS OF CULTURE-NEGATIVE INFECTIVE ENDOCARDITIS

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MOROCCO

Introduction:

Culture-negative endocarditis remains a diagnostic and therapeutic challenge. The clinical features and prognosis associated with this condition may vary according to different epidemiological and clinical factors. Empirical antimicrobial therapy is based on epidemiological data, although unusual microorganisms may also cause endocarditis.

Objective:

We studied the clinical characteristics, in-hospital mortality and short-term prognosis of patients with culture-negative endocarditis.

Material and method:

A total of 122 episodes of definite endocarditis according to the duke criteria were studied (2014-2022). We compared clinical, laboratory and echocardiographic characteristics, as well as complications and survival rates of patients with culture-negative and culture-positive endocarditis.

Results:

Culture-negative endocarditis occurred in 82 (67%) episodes. Compared with patients with culture-positive endocarditis, the time from first symptoms to admission was shorter in patients with culture-negative endocarditis, a mean of 20 days compared with 30 days in the culture-positive group ($p < 0.05$), and these patients also had lower levels of C-reactive protein on admission (99 versus 120 mg/dl) ($p < 0.05$). Hospital stay was not different between the two groups with a mean hospital stay of 27 days. However, in-hospital mortality rates were higher in culture-negative patients than in culture-positive patients (15% versus 11% mortality rate). As for complication rates, severe sepsis and vascular complications (stroke, splenic infarction) were higher in the culture-negative group (7.9% versus 3.1% in the culture-positive group), $p < 0.05$.

Conclusions:

Patients with culture-negative endocarditis had lower levels of C-reactive protein on admission and required less time in hospital, but had a higher rate of in-hospital mortality and complications compared with patients with culture-positive endocarditis.

Submission ID: 1503

BASAL CHARACTERISTICS OF THE CARDIO-ONCOLOGY REGISTRY OF CHEMOTHERAPY INDUCED CARDIOVASCULAR TOXICITY: ABOUT 2329 PATIENTS

MAAROUFI ANASS, ABOURICHE AMIRA, BENDAHOU HAJAR, BELKOUCHIA SAMI, HABOUB MERIEM, AROUS SALIM, BENOUNA EL GHALI, HABBAL RACHIDA, TAWFIK NEZHA

MOROCCO

Background:

Chemotherapy have improved the prognosis of many cancers in the last years but concerning cardiovascular toxicity (CVtox) have been reported. Nowadays, specific surveillance protocols are recommended, and early diagnosis of toxicity is crucial but may be challenging.

Purpose:

To characterize the cardiovascular (CV) effects of chemotherapy and to identify cardiovascular risk factor in cancer patients

Methods:

A monocentric registry was developed by collaboration of the cardiology and oncology department since 2017. A total of 2329 patients was included. A follow-up protocol was established with clinical, electrocardiographic (EKG), echocardiography, and laboratory assessment, including cardiac biomarkers. Toxicity is managed according to ESC.

Results:

2329 patients were currently included. Median age was 52 [35, 80] years-old, 91% were female. 65% had at least 1 CV-risk factor (75% menopause 16% hypertension, diabetes mellitus 11%, 10% hyperlipemia, 7% smoking history) and up to 4% had previous known CV disease. Dyspnoea was referred by 16% of patients, 18% have abnormal EKG findings and one-third (2%) abnormal cardiac biomarkers. Mean LVEF (58% and GLS (-18[-19.75, -15]) were within the normal range but 14% of whom LGE were measured showed reduced value at baseline. Cancer characteristics are mainly represented by breast cancer 71%; digestive 10%; hematological/lymphoma 9%.

Conclusion:

Real-world cancer patients show a high CV risk profile and non negligible CV diseases before ICI treatment. The prospective follow-up of this cohort were personalized according to baseline risk and the chemotherapy planned to detect early stages of cardiotoxicity.

Submission ID: 1504

INFLUENCE OF DIRECT ORAL ANTICOAGULANTS ON RATES OF ORAL ANTICOAGULATION FOR ATRIAL FIBRILLATION

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MOROCCO

Background:

Oral anticoagulation (OAC) with warfarin is underused for atrial fibrillation (AF). The availability of direct oral anticoagulants (DOACs) may improve overall OAC rates in AF patients, but a large-scale evaluation of their effects has not been conducted.

Objectives:

This study assessed the effect of DOAC availability on overall OAC rates for nonvalvular AF.

Methods:

Between April 1, 2008 and September 30, 2014, we identified 655,000 patients with nonvalvular AF and a CHA2DS2-VASc score of >1 . Temporal trends in overall OAC and individual warfarin and DOAC use were analyzed. Multivariable hierarchical logistic regression identified patient factors associated with OAC and DOAC use. Practice variation of OAC and DOAC use was also assessed.

Results:

Overall OAC rates increased from 52.4% to 60.7% among eligible AF patients (p for trend <0.01). Warfarin use decreased from 52.4% to 34.8% (p for trend <0.01), and DOAC use increased from 0% to 25.8% (p for trend <0.01). An increasing CHA2DS2-VASc score was associated with higher OAC use (odds ratio [OR]: 1.06; 95% confidence interval [CI]: 1.05 to 1.07), but with lower DOAC use (OR: 0.97; 95% CI: 0.96 to 0.98). Significant practice variation was present in OAC use (median odds ratio [MOR]: 1.52; 95% CI: 1.45 to 1.57) and in DOAC use (MOR: 3.58; 95% CI: 3.05 to 4.13).

Conclusions:

Introduction of DOACs in routine practice was associated with improved rates of overall OAC use for AF, but significant gaps remain. In addition, there is significant practice-level variation in OAC and DOAC use.

Submission ID: 1505

PREVALENCE, PREDICTORS AND REAL-WORLD MANAGEMENT OF NSTEMI WITH MULTIVESSEL DISEASES

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MOROCCO

Background:

Non-ST elevation myocardial infarction (NSTEMI) has higher post-discharge mortality than ST-elevation myocardial infarction (STEMI). Prognosis worsens in those with multivessel coronary disease (MVD). However, information about the prevalence and extent of MVD in NSTEMI is limited, in turn limiting insights into optimal treatment strategies. This study aimed to define the prevalence and extent of MVD, preferred treatment strategies and the predictors of MVD in a real-world NSTEMI population.

Methods:

The informatic data of patients admitted with acute coronary syndrome between 2020 and 2022 was used to identify consecutive patients presenting with NSTEMI diagnosis. Based on clinical and angiographic details, patients were categorized by the number of significantly diseased vessels (0,1,2,3-VD), defined by a stenosis of $\geq 70\%$, or $\geq 50\%$ in the left main coronary artery. Data was analysed retrospectively.

Results:

Among 764 patients admitted for acute coronary syndrome, NSTEMI counted for 331 patients (43.3%), the prevalence of MVD (2- or 3 VD) among them was 27%.

Multivariate logistic regression modelling showed age, male gender, diabetes, dyslipidaemia and prior myocardial infarction predicted MVD over 1-VD or 0-VD.

Percutaneous coronary intervention (PCI) was performed in 71% of patients with MVD. This comprised 75% of 2-VD patients and only 42 % of 3-VD patients, with 31 % referred for coronary bypass grafting. Among MVD patients treated with PCI, 86% had their culprit lesion treated alone in the index admission.

Conclusions:

In this NSTEMI cohort, over 27% had MVD. Notably, a minority of patients with MVD undergoing PCI received multivessel revascularisation. This real-world practice emphasises that further evaluation is required to determine whether complete revascularisation is beneficial in NSTEMI, as reported for STEMI.

Submission ID: 1506

INFECTIVE ENDOCARDITIS PROFILE, PROGNOSTIC FACTORS AND IN-HOSPITAL MORTALITY: 6-YEAR TRENDS FROM A TERTIARY UNIVERSITY CENTER IN MOROCCO

MAAROUFI ANASS, NOEL MASCHHELL MAHNOUNGOU, ZAHIDI HATIM, HABOUB MERIEM, AROUS SALIM, BENOUNA EL GHALI, AZZOUZI LEILA, DRIGHIL ABDENNACER, HABBAL RACHIDA

MOROCCO

Background:

Infective endocarditis (IE) stills an serious health problem with high morbimortality rates. Even though it's present in clinical practice, epidemiological and microbiological data remain scarce, especially in developing countries.

Aim:

This study aims to describe IE epidemiological, clinical, and microbiological profile in a tertiary university center in Morocco, and to identify in-hospital mortality rate and predictors.

Methods:

An observational, retrospective study of 122 patients, who fulfilled modified Duke's criteria during a six-year enrollment period, from January 2017 to June 2022. The primary outcome was defined as in-hospital mortality analyzed according to treatment received (medical or surgical). Multivariate analysis was used to identify mortality predictors.

Results:

The median age was 40 years (Q1 -Q3 27-51), and 59% were male. Echocardiogram demonstrated vegetations in 75 %. An infective agent was identified in 31%, of culture positive endocarditis *Staphylococcus* species respresented (32%), *Streptococcus* (29%) which were the most prevalent.

Overall in-hospital mortality was 17%, surgical patients represented only 5% of deceased patients.

On multivariate analysis, previous structural heart disease (OR, 3.1), and aortic valve infection (OR, 3.1) were all-cause death predictors. Surgical treatment was the only variable related to a better outcomes (OR, 0.45; 95% Confidence Interval, 0.2-0.9).

Conclusion:

This study presents IE profile and all-cause mortality in a large patient's cohort, comprising a 6-years' time window, a rare initiative in developing countries. male patients predominated, while *Staphylococcus* species were the main microbiological agents. Patients conservatively treated presented higher mortality than surgically managed ones. Epidemiological studies from developing countries are essential to increase IE understanding.

Submission ID: 1508

CLINICAL CHARACTERISTICS AND PROGNOSIS OF SURGICAL PATIENTS DUE TO INFECTIVE ENDOCARDITIS

AMRI MERIAM, MAAROUFI ANASS, BENNANI GHALI, HABOUB MERYEM, AROUSS SALIM, BENOUNA EL GHALI MOHAMMED, DRIGHIL ABDENASSER, AZZOUZI LEILA, HABBAL RACHIDA

MOROCCO

Introduction:

Infective endocarditis (IE) is a non contagious infection of the endocardium and heart valves or of a prosthetic valvular implant. It is associated with high mortality. Surgery may improve survival and reduce complications.

Background and purpose:

We investigated differences in clinical presentation, microbiology, and short- and long-term results according to the affected valve in patients who underwent surgery for left-sided native valve IE.

Methodology:

This was a single-center retrospective study between 2014 and 2022 of 123 patients who met the Duke criteria for Infective endocarditis diagnosis. 20 patients with isolated mitral valve IE (group M) and 12 patients with isolated aortic valve IE (group A) underwent surgery following diagnosis.

Results and discussion:

The average age of patients in group M was 41 ± 9 years, whereas in group A the patients were 38 ± 7 years old ($p = 0.05$).

Females accounted for 39 % of patients in group M, whereas they were 27 % of patients in group A ($p < 0.001$). Abscesses were more common in group A (27%) than in group M (8%). *Staphylococcus aureus* was more frequent in group M (19%) than in group A (7%; $p < 0.05$).

The duration from symptom onset to diagnosis was longer in group A (mean of 1 month) than in group M (mean of 15 days), but the time from diagnosis to surgery was shorter in group A than in group M. All patients underwent surgery more than 48 hours after diagnosis and 90-day mortality was Higher in group M (10 % versus

8 % in group A) ($p = 0.06$). Average hospital stay in group M was 29 days versus 27 days in group A.

Conclusion:

There were considerable differences in preoperative characteristics, microbiology, and outcomes between patients who underwent surgery for isolated aortic valve IE and those who were operated for isolated mitral valve IE.

Submission ID: 1511

HEART FAILURE IN ENDOCARDITIS PATIENTS: CHARACTERISTICS AND PROGNOSIS

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MOROCCO

Background and Objectives:

Heart failure (HF) is the most common complication of infective endocarditis. Our aim were to determine the clinical, echocardiographic, and microbiological variables associated with HF in patients with infective endocarditis and to investigate variables associated with in-hospital and 1-year mortality and association of surgery with outcome.

Methodology:

A retrospective analysis of confirmed cases of Infective Endocarditis (IE) in both native and prosthetic valves, according to Duke Criteria, admitted to a Moroccan tertiary hospital between December 2013 and June 2022. The main outcome measures In-hospital and 1-year mortality.

Results and discussion:

Out of 123 patients with infective endocarditis and known HF status enrolled, 77 (62%) had Heart Failure, and 46 (38%) were classified as having New York Heart Association class III or IV symptom status. Within the subset with HF, 54 (70%) underwent valvular surgery during the hospitalization duration.

In-hospital mortality was 20.9 % for the entire HF cohort, with lower mortality observed in patients undergoing valvular surgery compared with medical therapy alone ((15% vs 47%), respectively; $P < 0.05$). One-year mortality was 20% in patients undergoing valvular surgery vs 57 % in those not undergoing surgery ($P < .05$). Cox proportional hazards modeling with propensity score adjustment for surgery showed that advanced age, health care-associated infection, causative microorganism (*Staphylococcus aureus* or fungi), severe HF (New York Heart Association class III or IV) at admission, stroke, and prosthetic valves were independently associated with 1-year mortality, whereas valvular surgery during the initial hospitalization was associated with lower mortality.

Conclusion:

In this cohort of patients with infective endocarditis complicated by HF, severity of HF was strongly associated with surgical therapy and subsequent mortality, whereas valvular surgery was associated with lower in-hospital and 1-year mortality.

Submission ID: 1516

PULMONARY ARTERIAL HYPERTENSION IN PEDIATRIC CARDIOLOGY EPIDEMIOLOGICAL PROFILE, MANAGEMENT AND SURVIVAL IN TUNISIA

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TUNISIA

Background:

Pulmonary arterial hypertension (PAH group 1) in pediatric population has a specific etiologies even that it shares common features of adult disease. Children have a greater predominance of idiopathic pulmonary arterial hypertension (IPAH) and pulmonary arterial hypertension (PAH) associated with congenital heart disease (PAH-CHD).

Objective:

The aim of this work is to identify the epidemiological, clinical, hemodynamic profile of PAH as well as its therapeutic implications in a pediatric cardiology department

Methods:

To meet our objective, we conducted a descriptive retrospective study of 42 patients who were hospitalized for PAH (group 1 of the European Society of cardiology classification) in the pediatric cardiology department of the University Hospital La Rabta.

Results:

Our population includes 42 patients with an average age of 22.5 years [5-37], with a female predominance of 66.7%. PAH was idiopathic in 35.7% and was associated with congenital heart disease in 64.28%. The various congenital heart diseases found in our patients were mainly in the form of VSD (ventricular septal defect) (26.19%) followed by complete AVSD (atrioventricular septum defect) in 23.8%. Four cases of PDA (persistent arterial duct) were found (9.52%), one case of UVH (Univentricular Heart) and one case of TA (truncus arteriosus). The most found associated pathology (10.7%) was T21 (trisomy 21). Fifty percent of our patients were asymptomatic at the interrogation (50%). However, the various functional signs reported by the patients were dyspnea in 35.7%, and it was associated with syncope in 4 patients.

On cardiac ultrasound, the mean PAPS was 95.87mm Hg [60-180]. At the cardiac catheterization, we found an average hemodynamic PAPm of 76.38mmHg [40-133] and an average PAPS of 104.37mmHg [50-160mmHg].

Medical treatment was put in 73.8% of cases, including 70.96% in the form of bosentan and 16.12% in the form of sildenafil. The clinical evolution was favorable in 7.1%, on the other hand a persistence of dyspnea is found in 6% of the cases, only one case developed heart failure and 7.1% were lost to follow-up. Six patients were died

Conclusion:

The field of pediatric PH still needs specific clinical trials to develop specific treatment strategies. Faced with the gravity of the prognosis of PAH in children, it is necessary, on the one hand, to insist on the marketing of specific treatment for PAH which are not yet available in our country. On the other hand, we must try to speed up surgical procedures so as to no longer have forms of PAH attached to potentially curable pathologies.

Submission ID: 1518

A LOOK AT SUPPORT HEART FAILURE: EXPERIENCE OF THE HEART FAILURE TREATMENT UNIT OF THE IBN ROCHD UNIVERSITY HOSPITAL

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MOROCCO

Background:

Heart failure (HF) is a problem of public health, with increasing frequency, a severe prognosis and a high cost to society.

Objective:

The objective was to identify the epidemiological, clinical and the outcome of heart failure (HF) heart failure treatment unit of the IBN ROCHD university.

Method:

A retrospective study using a serie of 254 patients admitted in heart failure treatment unit of the IBN ROCHD university hospital from february 2020 to july of 2022.

Results:

The mean age was 60 ± 15.5 years. Men were mostly represented with a ratio H/ F = 3.7. The main cardiovascular risk factor was hypertension (61%) followed by diabetes (39%) and smoking (35%). Dyspnea was the main symptom reported in 90% of the cases. The clinical presentation was that of left (55%), right (21%) and global (17%) HF. Among electric signs, we found Q-wave (56%), a Atrial fibrillation (34%) and left ventricular hypertrophy (29%). Biology showed electrolyte abnormalities in 55% of the cases, renal failure (26%) and anemia (19%). In echocardiography, the mean left ventricular ejection fraction (LVEF) was $31.5 \pm 4.7\%$. LVEF was $> 45\%$ for 17% of patients. The main causes were ischemic heart disease (62%), dilated cardiomyopathy (20%) and valvular heart disease (12%) the most frequently prescribed drugs were diuretics (96%) and converting enzyme inhibitors 242 of cases (95.2%). Among patients with coronary artery disease, 36% were revascularized . 12 of patients underwent a mitral valve replacement with mechanical prosthesis. In addition to optimal medical treatment, 12 of our patients underwent cardiac resynchronization with or without a defibrillation system.

Conclusion:

The main features of this population is the relatively young age, male predominance, Ischemic heart disease is the main etiology in our study. The prevention of ischemic heart disease is one of the utmost important keys to fight against heart failure.

Submission ID: 1520

HEART RATE RECOVERY AFTER EXERCISE IN CHILDREN

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TUNISIA

Background:

The individual ability to exercise is directly determined by the strength of cardiac vagal activity. The recovery period after exercise is accompanied by a withdrawal of sympathetic drive and a vagal reactivation. Heart rate recovery (HRR), defined as the decrease of heart rate 1 minute after cessation of exercise, is a simple parameter to estimate vagal activity and therefore exercise capacity.

The aim of this study is to measure the HRR in children with normal echocardiography in order to evaluate their exercise capacity.

Methods:

We conducted a cross sectional study in the pediatric cardiology

department of La Rabta hospital. We included patients who consulted for chest pain and palpitation with normal echocardiography. Treadmill exercise test according to the standard Bruce protocol was underwent to all patients over a period of two months (July and August 2022). The value of HRR was measured as the difference between peak heart rate and heart rate 1 min after cessation of exercise.

Results:

A total of 22 patients were included with a mean age of 9.6 ± 2.8 years ranging from 5 to 14 years and a sex-ratio equal to 0.6. Patients had a mean value of HRR of 41.4 ± 12.4 beats per minute (bpm) ranging from 25bpm to 66bpm. The mean of HRR was significantly higher among boys (50.1 ± 10.8 bpm vs 36.4 ± 10.6 bpm; $p=0.009$) and among those who had vagal hypertonia (57.0 ± 5.5 bpm vs 35.6 ± 8.4 bpm; $p<10^{-3}$). It was significantly lower in patients with submaximal exercise testing (exercise test stopped for fatigue) (25.6 ± 0.6 bpm vs 43.9 ± 11.5 bpm; $p<10^{-3}$)

No significant difference was found according to age and baseline heart rate.

Conclusions:

One-minute heart rate recovery after exercise, which may be a reflection of vagal activity, was slower in children with lower exercise endurance. Therefore, HRR may be a strong indicator of exercise capacity. Children with lower HRR should be encouraged to perform regular exercise training in order to optimize their physical fitness and improve their exercise performance.

Key words: Exercise testing, Heart rate recovery, children

Submission ID: 1521

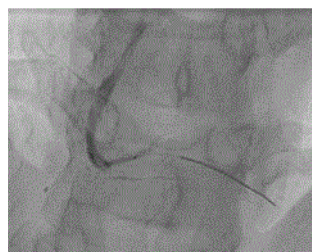
PERFORATED BALLOON TECHNIQUE: A SAFE AND SIMPLE METHOD TO DEAL WITH NO-REFLOW PHENOMENON

DERBEL EMNA, BEN ALI ZINEELABIDINE, HADJ MBAREK MOHAMED GHASSEN, FAKHFAKH MOHAMED, KHORCHANI ALI, NOURI FIRAS, GACEUR RADHIA, MILOUCHI SAMI

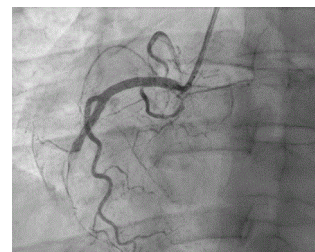
TUNISIA

Background:

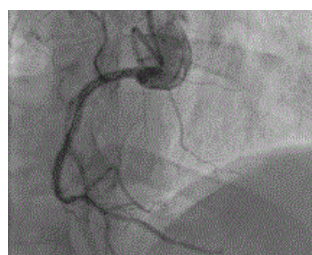
No reflow is a challenging complication of percutaneous coronary intervention and is associated with a worse prognosis both at short and long term follow up. Therapeutic approach to such a phenomenon requires knowledge of mechanisms, methods of diagnosis and response to treatment modalities. Several pharmacological and non-pharmacological interventions have



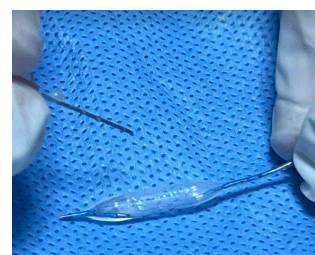
Distal instillation of vasoactive drug via perforated balloon



No reflow



TIMI III flow restored



Perforated balloon technique

been used to treat this situation. Intracoronary vasodilators such as verapamil, nitroprusside, or adenosine are being administered via the guiding catheter, but sometimes distal flow restoration is not satisfactory especially in patients with TIMI 0 flow. So that Vasoactive drug administration at the distal part of the coronary artery is suggested as a treatment option for no-reflow. Micro-catheters, thrombo-aspiration catheters and over-the-wire balloon catheters are being used for this purpose. However, over-the-wire catheters need long guide wires and changing a short wire with a long wire has the risk of wire loss. Besides, distal infusion catheters are not always available. Here we demonstrate a successful no-reflow management using perforated balloon technique (PBT) a simple, handy and cost-effective technique in a case of a 45-year-old male patient taken to catheterization laboratory at the seventeenth hour of his symptoms with the diagnosis of acute myocardial infarction. The culprit artery was totally occluded. After frequent predilations via a monorail balloon, no-reflow developed. When administration of vasoactive drug via the guide catheter failed to establish TIMI III flow, PBT was considered for contrast injection in order to visualize distal segments of the vessel and release the mechanisms and for distal intracoronary instillation of vasodilators. This technique allowed us to choose the adequate stent and to have a successful angioplasty with a TIMI III flow.

Submission ID: 1525

PARTICULARITY OF CONGESTIVE HEART FAILURE IN ELDERLY VERSUS YOUNG MOROCCAN PATIENTS

H CHARIF, M EL MOUSAID, I NOUAMOU, M HABOUB, S AROUS, E BENOUNA, A DRIGHIL, L AZOUZI, R HABBAL

MOROCCO

Background:

Congestive heart failure (CHF) in the elderly is linked to a fairly high morbidity and mortality rate. However, very few studies report particularities of CHF in this population.

Objective:

To evaluate the clinical and therapeutic profile of CHF in elderly people in the region of Casablanca in Morocco.

Methods:

This is a retrospective cross-sectional study conducted over 4 years, [March 2018-April 2022] on all CHF patients over the age of 23, followed in the IC therapeutic unit of the cardiology department of the CHU from Casablanca. We studied the characteristics of CHF in elderly patients (≥ 65 years) compared to younger patients.

Results:

Among 4239 patients, elderly patients represented 2743 (64.7%) with a male predominance (67.3%). 38.6% were smokers, 49.5% hypertensive, 38.3% diabetic and 13.7% suffered from dyslipidemia. Among the elderly compared to the young: ischemic heart disease was the most common etiology 57.3% versus 52.7%, followed by non-ischemic dilated cardiomyopathy 12.7% versus 5.8% and valvular heart disease 3.9% versus 7.7%, $P < 0.001$. Stage III-IV dyspnea was found in 28.7% versus 8.8%, $P < 0.001$. Elderly patients had more clinical signs of HF, more atrial fibrillation, more stroke, and were more likely to have chronic kidney disease. The mean LVEF was $38.45 \pm 7.89\%$ versus $37 \pm 8.73\%$. Critical elevation Doppler filling pressures were found in 28.7% versus 21.3%, $P = 0.003$. Therapeutically, ACE was used in 81.50% of cases, AT-II receptor antagonists in 6.74%, beta-

blockers in 80.11%, furosemide in 48.54%, spironolactone in 56.62% and ivabradine in 7.9%. The rehospitalization rate in elderly patients was 53.5% versus 43.2%, $p < 0.001$.

Conclusion:

CHF is a major public health problem in Morocco with a very high morbidity and mortality rate in elderly patients. Therefore, it is necessary to establish a health program adapted to the age of the patients to guarantee better therapeutic care.

Submission ID: 1526

THREE VESSELS CORONARY ARTERY DISEASE; A CHALLENGE TO TREAT IN TUNISIAN CONDITIONS

FATMA SGHAIER, HICHEM DENGUIR, MOHAMED AOUIA, SAHAR GMIHA, AHMED ALBATRAOUI, HASSEN EZZAIN

TUNISIA

Introduction:

Three vessels coronary artery disease (CAD) is usually defined by the presence of angiographic stenosis of more than 50% in the three epicardial coronary trunks. Coronaries lesions are often complex and difficult to manage because of the need for specific devices and the frequent resort to surgery.

In this study we proceed to present epidemiological and clinical characteristics of patients with three vessels CAD and their medium-term evolution in single Tunisian cardiologic center.

Materials and methods:

This is a cross-sectional and descriptive study, conducted over a 12-month period from February 2019 to February 2020. It included all patients referred to the cardiac catheterization unit of the hospital of Gabes (Sather east of Tunisia) for coronary angiography.

Results:

Among the 287 patients included, 19.5 % ($n=56$) of patients had three vessels lesions. The mean age was 64.61 years (47-79). Two-thirds (69.1%) were men. The indication for coronary angiography was NSTMI, STMI and Chronic coronary syndrome. Two thirds (64.3%) were diabetic, 53.6% hypertensive, 39.3% smokers, 23.2% dyslipidemic and 16.1% obese. One quarter (25%) of the patients had previous history of CAD.

Coronary angiography showed a number of lesions ranging from 3 to 10 with an average of 5.48 lesions. The SYNTAX score was less than or equal to 22 in 66.1% of cases, between 23 and 32 in 26.8% of cases, and greater than or equal to 33 in 7.1% of cases. Medical treatment alone was indicated in 7.1% of patients, angioplasty was performed in 16.1% and coronary artery bypass grafting (CABG) was indicated in 76.8%.

After a 12-month follow-up of patients for whom CABG was indicated, only 20.9% of these patients were able to undergo bypass surgery. Of the remaining 42.9% refused surgery and 57.1% of cases are still on the waiting list. The one-year mortality rate was 10.7% and 14.3% were rehospitalized at least once in the same year.

Conclusion:

Three vessels CAD is common in our population given the magnitude of cardiovascular risk factors. Anatomic lesions are more complex. Adequate management requires more specific means for both surgical and nonsurgical revascularization to improve the prognosis of these patients.

Submission ID: 1527

CLINICAL, ANATOMICAL AND PROGNOSTIC CHARACTERISTICS OF CORONARY ARTERY DISEASE IN TUNISIAN DIABETICS

FATMA SGHAIER, HICHEM DENGUIR, MOHAMED AOUINA, SAHAR GMIHA, AHMED ALBATRAOUI, HASSEN EZZAIN

TUNISIA

Introduction:

Diabetes mellitus is considered a major cardiovascular risk factor, particularly type 2 diabetes. The prevalence of diabetes is between 15 and 30% depending on the respective low or high risk at admission for ACS according to the international GRACE registry. The study of the clinical, anatomical, and prognostic particularities of coronary artery disease in diabetics will help improve the management of coronary artery disease in this population.

Materials and methods:

This is a cross-sectional, descriptive and analytical study that took place over a 12-month period from February 2019 to February 2020. It includes all patients referred to the cardiac catheterization unit of the university hospital of Gabes for coronary angiography exam.

Results:

Of the 286 patients included, 55.4% were diabetic. The mean age was 62.75 years (35-82) versus 60.62 years (24-90) in non-diabetics ($p=0.104$). Two-thirds of the diabetics (66%) were men compared to 85.2% of the non-diabetics ($p=0.0001$). Diabetics were less likely to smoke (40.3% vs. 60.3% $p=0.001$), were more hypertensive (64.8% vs. 38% $p=0$), more dyslipidemic (25.5% vs. 16.4% $p=0.71$) and more obese (16.8% vs. 12% $p=0.268$).

The clinical presentation was dominated by chronic coronary syndrome followed by ST+ ACS and ST- ACS in diabetics and non-diabetics respectively in 53.5%, 25.8% and 20.1 vs 44.3%, 31.1% and 23% without significant difference ($p=0.567$, $p=0.322$, $p=0.126$).

Non-significant coronary lesions and single vessel disease were lower in diabetics (19.5% vs 32.8% $p=0.01$), (27% vs 33.6% $p=0.234$). On the other hand, double vessel disease and triple vessel disease were more frequent in diabetics (30.2% vs 18.9% $p=0.03$) and (23.3% vs 14.8% $p=0.075$). Concerning revascularization 45.3% of diabetics vs 38.5% had coronary angioplasty and coronary artery bypass grafting was indicated in 18.9% of diabetics vs 10.2% of non-diabetics ($p=0.023$).

At 1 year, 6.2% of diabetics died compared to 1.8% of non-diabetics ($p=0.12$), 15.3% of diabetics had a recurrence of angina compared to 9.9% of non-diabetics ($p=0.205$). 17.4% of diabetics had a major cardiovascular event versus 10.8% of non-diabetics ($p=0.141$).

Conclusion:

Coronary artery disease remains frequent in Tunisian diabetics. The clinical presentation is more severe because of the extensive and complex anatomical lesions which are factors of bad prognosis compared to non-diabetics.

Submission ID: 1530

ECHOCARDIOGRAPHIC FINDINGS IN PATIENTS WITH IMPROVED HEART FAILURE

ALI KHORCHANI, HOCINE BEN ABDELHAFIDH, TAHA LASSOUED, ZINELABIDINE BEN ALI, SAMI MILOUCHI, RIDHA FEKIH, DERBEL EMNA, MTIRI IMEN

TUNISIA

Introduction:

Heart failure (HF) is a common and devastating disease, it represents a major public health issue due to its high morbidity and mortality

rate. A new subset of heart failure class has been recently identified, representing patients with reduced left ventricular ejection fraction (LVEF) who have demonstrated an improvement in ejection fraction (EF).

Aim:

We sought by this study to describe echocardiographic characteristics of patients with HF with improved EF (HFIEF).

Patients and methods:

We conducted a monocentric survey including out patients aged 18 years and older diagnosed with HF with reduced LVEF ($<40\%$). After a 1-year follow-up involving at least one trans thoracic echocardiography (TTE) re-examination, we identified patients who had shown an improvement of the LVEF to reach a LVEF $>50\%$.

Results:

In all, 87 patients were enrolled in the study. The time period between enrolment and the control TTE was on average 8 months. Patients had shown an improvement of LVEF were 13.8% (12 patients) and 86.2% (75 patients) had a persistent HF with reduced ejection fraction (HFrEF).

In our serie, the average LVEF in first TTE was $31.2\% \pm 6.5$. The group with HFIEF had features of higher baseline LVEF ($36.2\% \pm 3.7$ vs $30.5\% \pm 4.7$; $p=0.03$) and lower baseline left ventricular end-diastolic diameter ($63\text{ mm} \pm 24$ vs $59\text{ mm} \pm 32$, $p=0.05$). Change of LVEF from first to follow-up TTE was $12.7\% \pm 13.1$ in all, $3.8\% \pm 9.6$ in persistent HFrEF, and $25.7\% \pm 11.6$ in HFIEF. Severe mitral regurgitation was significantly more common among patients with persistent HFrEF (8.3% vs 16%; $p=0.02$).

Conclusion:

HFIEF is a relatively recent description of a subset of HF patients, it is characterised by a less echocardiographic parameters deteriorations and a better prognosis. More researches on these patients are needed to better understand the mechanism that led to improvement in EF.

Submission ID: 1531

PULMONARY VALVE REPLACEMENT AFTER TETRALOGY OF FALLOT REPAIR

BENOTHMAN RIHAB, HAKIM KAOUTHAR, SOULA MOHAMED AMINE, TALHAOU AMIRA, SOUDANI SABRINE, HMAYER ELLA, GHORBEL CHAYMA, BEN JEDDOU SYRINE, MEKKI NOUHA, ZEREI KARAM, IDRISSE BASSEM, MSAAD HELA, OUARDA FATMA

TUNISIA

Background:

The improved survival of patients after tetralogy of Fallot (TOF) repair is coupled with a high rate of morbidity and re-operation during long term follow-up.

Objective:

The aim of this study was to evaluate the long-term outcome and freedom from pulmonary valve replacement (PVR) after initial repair of tetralogy of Fallot (TOF).

Patients and methods: 66 patients with repaired TOF before 2016, regularly followed up in our pediatric cardiology department were enrolled in our study between June 2021 and March 2022. Patients were treated with transannular patch (TAP), valve sparing repair (VSR), or conduits from the right ventricle to the pulmonary arteries (RVPA conduits).

Results:

Fifteen patients (23%) received surgical PVR after a median of 12.4 ± 7.2 years with no late mortality. A significant difference in

freedom from reoperation after TAP, VSR, and RVPA-conduits could be identified. Analysis displayed transannular repair ($p = 0.04$) as significant risk factors for PVR. Important pulmonary regurgitation was the main cause for PVR. Two patients required percutaneous PVR 6 and 10 years respectively after surgical PVR for degeneration of the homograft valve.

Conclusion:

TOF repair has a beneficial long-term prognosis. Transannular repair is associated with earlier PVR.

Submission ID: 1532

PARADOX OF OBESITY IS IT VALID IN MOROCCAN PATIENTS FOLLOWED WITH CHRONIC HEART FAILURE WITH REDUCED EJECTION FRACTION?

H CHARIF, M EL MOUSAID, I NOUAMOU, M HABOUB, S AROUS, E BENOUNA, A DRIGHIL, L AZOUZI, R HABBAL

MOROCCO

Background:

It has been shown in several studies that despite being an independent risk factor for the development of HF, obesity is associated with lower mortality in patients with established HF, giving rise to the term obesity paradox. Does this paradox apply to the Moroccan population?

Objective:

Investigate the impact of obesity on chronic heart failure with reduced ejection fraction (HFrEF)

Methods:

Cross-sectional study conducted between May 2006 and June 2021 including patients with HFrEF, followed in our department. Obesity was defined as a body mass index (BMI) ≥ 30 kg/m². We studied 2 groups of patients: group 1 of obese patients and group 2 of patients with a normal BMI.

Results:

We collected 3412 patients: 723 (21.20%) in group 1, 2689 (78.8%) in group 2. The male rate was 62.1% vs 62.2% ($P=0.9$). The mean age was 63.34 ± 11.60 versus 66.90 ± 13.15 years ($P<0.001$). Regarding cardiovascular risk factors: hypertension in 47.4% vs 39% ($P<0.001$), diabetes mellitus in 37.5% vs 30% ($P=0.001$), dyslipidemia in 20.2% vs 10.4% ($P<0.001$), smoking in 31.3% versus 33.1% ($P<0.001$). Stroke in 12.6% vs 14.6% ($P<0.001$), thyroid dysfunction in 2.3% vs 1.5% ($P<0.001$), end stage CKD in 5.7% vs 7.1% ($P<0.001$). Ischemic heart disease was represented in 61.1% vs 54.6%, dilated cardiomyopathy in 6% vs 5.8%, valvular heart disease in 2.8% vs 4.3%, hypertrophic cardiomyopathy in 0.9% vs. 0% ($P<0.001$). Atrial fibrillation in 14.2% versus 11% ($P<0.001$). Echocardiographic characteristics: LVEDDD was 57.87 ± 8.24 mm vs 57.78 ± 8.94 mm ($P = 0.875$), mean LVEF was $34.52 \pm 13.02\%$ vs $34.73 \pm 13.10\%$ ($P=0.884$), elevated left ventricular filling pressures in 17.5% vs 25.5% ($P<0.001$), severe secondary mitral regurgitation in 4.6% vs 7% ($P<0.001$). The M:F hospitalization rate was 20.4% versus 25.7% ($P<0.001$).

Conclusion:

Obesity paradox is confirmed in our population as obese HF patients are less symptomatic and have lower rates of hospitalisation for HF and lower mortality rate compared to patients with a normal BMI.

Submission ID: 1533

CLINICAL CHARACTERISTICS OF PATIENTS WITH IMPROVED HEART FAILURE

ALI KHORCHANI, TAHA LASSOUED, HOCINE BEN ABDELHAFIDH, ZINDELABIDINE BEN ALI, SAMI MILOUCHI, KHALIL OUZGHLANI, RIDHA FEKIH, MOHAMED FAKHFAKH

TUNISIA

Background:

Heart failure (HF) represents a major public health issue due to its high morbidity and mortality rate and its burden on the health care system. Nowadays, a new subset of HF class has been recently described representing patients with reduced left ventricular ejection fraction (LVEF) who have shown an improvement in ejection fraction, spontaneously or in response to a therapeutic intervention.

Aim:

We sought by this study to describe clinical characteristics of patients with HF with improved LVEF (HFief).

Patients and methods

We conducted a monocentric survey including patients aged 18 years and older diagnosed with HF with reduced LVEF ($<40\%$). After a 1-year follow-up involving at least one echocardiography re-examination, we identified patients who had shown an improvement of the LVEF to reach a LVEF $> 50\%$.

Results:

In all, 87 patients were enrolled in the study. The time period between enrolment and the control transthoracic echography was on average 8 months. Patients who had shown an improvement of LVEF were 13.8% (12 patients). However, 86.2% (75 patients) had a persistent reduced LVEF (HFrEF).

The mean age was 66.1 years and the gender ratio was 1.5. Hypertension (HTA) was the most common comorbidity (39.7%, $n=39$) followed by diabetes (33.3%, $n=29$). Patients with HFief were younger (mean age: 58.5 vs 67.7; $p=0.04$), had more recent onset of heart failure (41.6% vs 22.9%; $p=0.01$) and less prevalence of diabetes (25% vs 56%; $p=0.04$). Prevalence of HTA and atrial fibrillation (AF) were similar (HTA: 41.7% vs 52%; $p=0.5$; AF: 16.7% vs 28%; $p=0.4$). As for the etiology of heart failure, ischemic cardiomyopathy was the most frequent for both groups followed by hypertensive cardiomyopathy in HFief and valvular cardiomyopathy for patient with persistent HFrEF.

Conclusion:

HFief is a relatively recent description of a subset of HF patients, it is characterised in our study by a younger age, less prevalence of diabetes and a more common de novo HF.

Submission ID: 1534

ACUTE CORONARY SYNDROME REVEALING A BEHCET'S SYNDROME IN A YOUNG MAN

TAHA LASSOUED, ALI KHORCHANI, ZINELABIDINE BEN ALI, SAMI MILOUCHI, IMANE BOUALAOUI, RIDHA FEKIH, KHALIL OUAGHLANI, BEN ABDELHAFIDH HOCINE, ACHRAF HAMDANI

TUNISIA

Background:

Behcet syndrome is a chronic and rare multisystemic vasculitis characterized by recurrent oral and genital ulcers, ocular inflammation, skin lesions and frequent articular involvement. Vascular involvement in Behcet syndrome can affect both arteries and veins of any diameter. However, coronary arteries are rarely

affected and are only reported as case presentations in the literature.

Clinical presentation

We report a case of a 37 years old male patient, without any particular past medical history, who was admitted to our cardiology department for a non-complicated anterior STEMI. Coronary angiography has showed an aneurysmal left anterior descending coronary artery with a fresh thrombus floating in the proximal part and a TIMI3 flow. Etiological investigation did not reveal other atherothrombosis risk factors. Careful questioning and physical examination revealed bipolar ulcers (Oral and anal) with eye and oral dryness, and inflammatory arthralgias. Pathergy test performed was affirmative.

Given this body of evidence, the diagnosis of angio-Behçet was retained.

Conclusion:

Coronary involvement in Behçet Syndrome is extremely uncommon and most of published cases reported acute myocardial infarction in a patient previously diagnosed with Behçet's disease. Our case report sheds light on an important etiology of acute myocardial infarction in young patients without conventional risk factors atherosclerotic coronary artery disease.

Submission ID: 1535

SEX-RELATED DIFFERENCES IN THE INCIDENCE AND PROGNOSIS OF HEART FAILURE WITH IMPAIRED EJECTION FRACTION: AN EXPERIENCE FROM THE UHC IBN ROCHD OF CASBLANCA, MOROCCO (ABOUT 4382 PATIENTS)

R.HABBAL

MOROCCO

Background:

Heart failure with reduced ejection fraction (HFrEF) is a fairly common pathology. Several observational studies suggest sex-related differences in the incidence and prognosis of HFrEF, particularly in the setting of coronary artery disease. Women seem more likely to develop heart failure.

Objective:

To report the clinical, electrical, echocardiographic, etiological and therapeutic aspects of HFrEF in women versus men.

Methods:

Retrospective cross-sectional study carried out between March 2018 and March 2022 including all patients over the age of 30 with HFrEF followed in the heart failure therapeutic unit of our department. Data were collected in Excel and analyzed using SPSS 2.0. We studied the clinical, electrical, echocardiographic and etiological aspects of CHF in women compared to men.

Results:

2526 women among 4382 HFrEF patients were included, the mean age of women was 62.78 ± 10.31 years versus 62.45 ± 10.15 years in men ($P=0.068$). 37.8% of women were diabetic vs 26.1% of men ($P<0.001$), 49.6% were hypertensive vs 32.7% ($P<0.001$), 4% were smokers vs 42.5% ($P<0.001$). 9.2% had a history of stroke vs 10.6% ($P=0.205$), 25.8% had a history of myocardial infarction vs 32.6% ($P<0.001$), 5.3% were in end-stage chronic renal failure vs 5.5% ($P=0.822$). HFrEF in females compared to males was due to ischemic heart disease in 50.6% versus 63.2% ($P<0.001$). Dyspnea in females compared to males was classified primarily as NYHA class II in 59.7% versus 57.3%. 12.8% of women had atrial fibrillation against 12.5% in men ($P=0.860$). The mean LVEF was $37.43 \pm 15.85\%$ vs. $35.65 \pm 10.07\%$ in men ($P<0.001$). No impact of sex on hospitalization for HF was observed ($P=0.867$).

Conclusion:

Myocardial infarction was significantly more frequent in women. This may be explained by a greater prevalence of risk factors for coronary atherosclerosis as well as by female sex.

Submission ID: 1537

THE CHANGING FACE OF INFECTIVE ENDOCARDITIS OVER TIME: OVER 30 YEARS COMPARATIVE STUDY

CHAWKI KHAULA, MAAROUFI ANASS, MASCHELL MAHOUNGOU MACKONIA NOEL

MOROCCO

Introduction:

Infective endocarditis (IE) is an evolving disease with a persistently high mortality and morbidity, it is a rare disease for which diagnosis and treatment continue to develop.

The purpose of our work is to review our experience with IE and to analyze the evolution in its epidemiologic, clinical and microbiologic characteristics, as well as the outcomes.

Methods:

The aim of this study is to compare data from a retrospective study conducted in Ibn Rochd Hospital between January 1983 and December 1994, by Bennis and Al based on 157 cases of infectious endocarditis admitted which we referred to as Group A; and 122 cases of infective endocarditis according to Duke criteria admitted to the same center three decades after, from December 2013 to June 2022, which are referred as Group B.

Results:

Concerning the demographic profile: The mean age of the patients increased, with a mean of 40.3 years in the group B vs 27.5 years in the group A, with a male predominance (62.8% in group A vs 60.7% in group B).

Infectious endocarditis secondary to rheumatic valvular heart disease has significantly decreased from 63% of patients in group A to 28.1% in group B. The valves most frequently involved were the mitral and aortic valves in both groups with an increase of mechanical prosthetic valve involvement with 10.4% in group B.

A portal of entry was identified in 63% of patients in group A vs 42% in group B, with a significant decrease of dental-related cases from 64% in group A to 28% in group B. Concerning the pathogens causing IE: In group A, blood cultures were positive in 42% of cases with a predominance of Staphylococci (30%) and coagulase-negative Staphylococci (25.7% of cases) whilst in group B blood cultures were positive in 32% of cases with a predominance of Staphylococci (38.6%) followed by Streptococci (21%).

Echocardiography including the transesophageal approach is crucial in the diagnosis of IE by demonstrating specific lesions of IE (abscess or vegetations) in 73.2% of cases in group A and 84% in group B.

The major complications of IE in group A were congestive heart failure CHF (47.8%) or neurological lesions (11.5%) while in group B CHF was noted in 36.4% of cases and 8.3% of neurological lesions. The overall mortality in our series (Group B) was 16% vs 28.7% in group A mostly related to cardiogenic shock.

Conclusion:

IE remains a highly mortal disease, its epidemiology and management are continually changing. These changes should be considered at the time of decision-making in treatment of and prophylaxis for IE.

Submission ID: 1539

CHALLENGING PERSISTENT LEFT SUPERIOR VENA CAVA FOR CARDIAC DEVICE IMPLANTATION : TWO CASE REPORTS AND LITERATURE REVIEW

EL ASSILI HALA, ABDELILAH BEN EL MAKKI, JAMAL KHEYI, MERYEM BENNANI, HICHAM BOUZELMAT, AATIF BENYASS, ALI CHAIB

MOROCCO

Background:

Persistent Left Superior Vena Cava (PLSVC) is the most common congenital abnormality of the thoracic venous system, it is usually

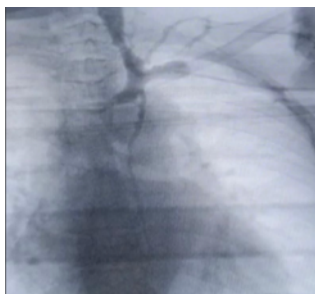


Figure 1: Venous angioram showing contrast coursing through the Persistent Left Superior Vena (type IIIb)



Figure 2: Chest X-ray showing post-procedure implantation of a dual chamber pacemaker via the right sub-clavian vein.

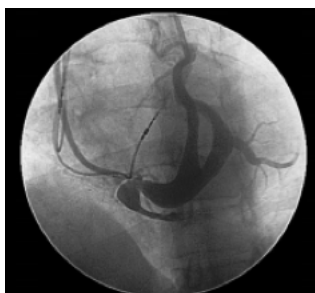


Figure 3: Venography of the left Superior Vena Cava and Coronary Sinus ostium (type IIIA)



Figure 4: Chest X-ray showed transvenous leads and left

diagnosed as an unexpected finding during attempts to left-sided venous catheterisation for intracardiac lead placement which can make more challenging and time consuming. Patients with this congenital malformation are at increased risk of developing various cardiac arrhythmias. It affects approximately 0.5 - 2% of individuals with normal heart, and up to 10 % in the presence of an established congenital heart diseases.

We present two different challenging cases of persistent left superior vena cava incidentally discovered during device implantation.

PLSVC usually comes as a surprise for the cardiologist during cardiac device implantation. These case reports emphasize the importance of its knowledge and how to manage it. Although most right heart catheterization procedures can be safely performed in spite of this anomaly transvenous leads implantation can be challenging or even impossible in some cases.

Submission ID: 1547

OUTCOMES AND PROGNOSIS OF ACUTE CORONARY SYNDROMES IN DIABETIC PATIENTS

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MOROCCO

Background:

Diabetes mellitus (DM) is an increasingly widespread disease across the globe due to ageing and lifestyle, with numbers predicting a spread by up to 439 million by 2030. Diabetes mellitus is a threat to the healthcare system for its chronic course and the multitude of lethal complications across different organ systems. Acute coronary syndromes (ACS) are major cardiovascular adverse outcomes in patients with type 2 diabetic mellitus.

We are going to study the prognosis and the outcomes of patients with DM suffering for an ACS.

Our study was a retrospective, comparative, and analytical, which enrolled 766 patients with ACS admitted in IBN RICHD UNIVERSITY Hospital's Cardiac Intensive Care Unit in Casablanca, Morocco, from January 2019 to January 2022. Our study population was divided into two groups: group A with diabetic patients (defined by $HbA_{1c} > 6.4\%$) and group B with non-diabetic patients. Clinical and paraclinical profiles as well as outcomes of both groups were compared.

766 patients were included, 336 NTSEMI, 430 STEMI, among them 331 (43%) were diabetic. We found a male predominance in both groups but a less predominant male proportion in group A (51.3% vs. 78.4%; $p = 0.003$). More comorbidities such as arterial hypertension (61.8 vs. 32.9%; $p < 0.001$), dyslipidemia (49.3 vs. 18.3%; $p = 0.003$), and chronic kidney disease (16.5 vs. 3.5%; $p = 0.021$). More bad outcomes and complications were found in Group A patients overall, such as acute heart failure and RV or even Cardiogenic shock. Multivessel disease was more prevalent. Mortality was higher in diabetic patients DM group.

Diabetes mellitus (DM) represents a major cardiovascular risk factor for increased risk of coronary artery disease and myocardial infarction (MI). DM is also associated with a poorer clinical outcome in MI.

Submission ID: 1548

MOROCCANS' MODIFIABLE RISK FACTORS OF SEVERE HEART FAILURE : A DESCRIPTIVE STUDY USING ROUTINELY COLLECTED HEALTH DATABASE

HATIM HAJAR, EL MOUSAID MERIEM, CHARIF HANAA, ERRAMI AMINE, SEYDOU HAROUNA, BOUTALEB AMINE, HABOUB MERYEM, AZZOUZI LEILA, HABBAL RACHIDA

MOROCCO

Introduction:

In Morocco, the prevalence of heart failure (HF) is rising, and there is a startling lack of factors associated with severe heart failure (SHF) in this population. The purpose of this study was to identify modifiable risk factors of SHF in patients hospitalized for HF in Ibn Rochd Hospital ,Casablanca .

Methods:

A total of 105 patients were included in the analysis, for a median of 35 months between March 2018 and January 2022. To assess the severity of HF, New York Heart Association (NYHA) classification were applied. Patients with a NYHA class I or II were considered as having moderate HF (MHF), while those with a NYHA class III or IV were considered as having severe HF (SHF). Using logistic regression, we examined univariate and multivariate risk factors related to SHF. Following the pronouncement of the RECORD (Reporting of studies Conducted using Observational Routinely-collected Data) , the results were reported.

Results:

A total of 24 patients (33%) were determined to have FHS. In univariate analysis, four predictors of SHF were identified : hemoglobin < 12 g/dL, neutrophil to lymphocyte ratio (NLR) > 3 , mean corpuscular hemoglobin concentration (MCHC) < 32 picoliter, and high density lipoprotein (HDL) < 0.35 (mmol/L). Only NLR > 3 and HDL < 0.35 mmol/L remained independent predictors in multivariate analysis. Patients with NLR > 3 had a 6-fold increased likelihood of SHF [adjusted odds ratio (AOR) : 6.78, 95% confidence interval (CI): 1.40-32.80, $p = 0.017$], and those with HDL < 0.35 (mmol/L) had a 10-fold higher probability of SHF [AOR: 10.11, 95% CI: 2.26-45.27, $p = 0.002$].

Conclusion:

The ward clinicians in resource-constrained settings might employ the SHF-independent biomarkers identified in this study, to determine patients at high risk of developing cardiac complications.

Submission ID: 1553

ARRHYTHMOGENIC RIGHT VENTRICULAR CARDIOMYOPATHY REVEALED BY VENTRICULAR TACHYCARDIA

ETTACHFINI TAHA, OUARRAK SAFIA, COUISSI ABDESSAMAD, HABOUB MERYEM, AROUS SALIM, BENOUNA MOHAMED EL GHALI, AZZOUZI LEILA, HABBAL RACHIDA

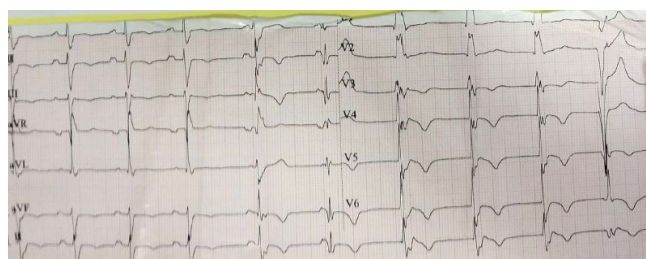
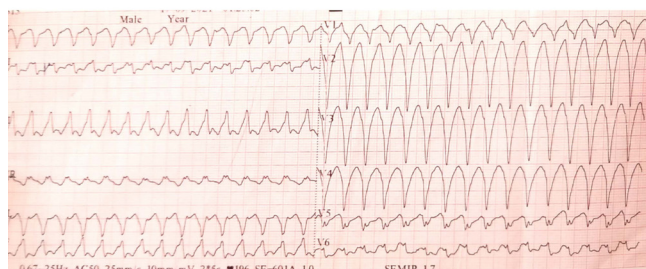
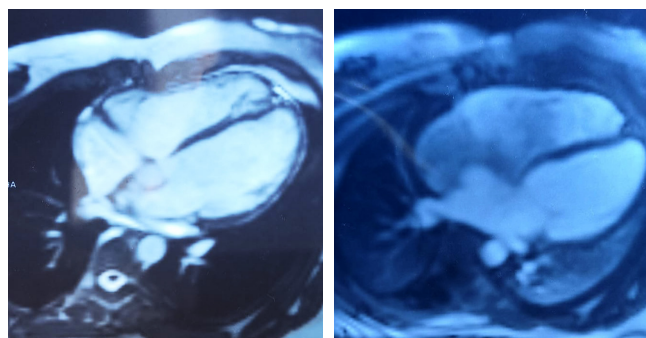
MOROCCO

Background:

Arrhythmogenic right ventricular cardiomyopathy (ARVC) is a genetically determined cardiomyopathy characterized by fibrofatty replacement of the myocardium. The severity of the disease is related to fatal arrhythmias, mainly monomorphic Ventricular Tachycardia (VT). The diagnosis is based on a constellation of criteria, based on imaging by echocardiography, Magnetic Resonance Imaging (MRI) or Right Ventricular angiography, on electrical abnormalities and endomyocardial biopsy. The aim of the treatment is to prevent ventricular arrhythmias and sudden cardiac death (SCD); It consists of anti-arrhythmic drugs and Implantable Cardiac Defibrillator (ICD).

Case presentation:

We report the case of a 23-year-old woman, with a history of palpitations and a familial history of SCD, who presented to the emergency department with hemodynamically unstable VT. After successful electrical cardioversion, clinical examination did not show signs of heart failure, the electrocardiogram revealed a complete right bundle branch block pattern with prolonged QTc interval. Echocardiography showed an enlarged Right Ventricle (RV), with important trabeculations and apical hypokinesis. The global RV function was normal. The left ventricular function was impaired with a global hypokinesis, the Ejection Fraction (EF) was at 35% using the Simpson Biplane (SB) method.



The cardiac MRI revealed bilateral ventricular dilation, thinning and dysfunction, along with fatty impactions on the RV. The EF of the Left Ventricle (LV) was at 30,56% and that of the RV at 7.8%.

The diagnosis of arrhythmogenic right ventricular cardiomyopathy was immediately made.

After restoration of the normal sinus rhythm by electrical cardioversion, the patient received 900 mg/ 24h IV drip maintaining dose of amiodarone, followed by oral maintenance dose which was progressively decreased to 400mg/day, along with the introduction of bisoprolol 10mg o.d. Due to the high risk of SCD, the patient received an ICD and she remained asymptomatic at the three-month follow-up visit.

Conclusion:

In our case, ARVC was diagnosed following an episode of VT, which is the most common form of presentation of the disease. The diagnosis was made through imaging criteria by echocardiography and cardiac MRI. For management, the patient received anti-arrhythmic drugs and ICD implantation.

Key words: Arrhythmogenic right ventricular cardiomyopathy, Ventricular arrhythmias, Sudden cardiac death, Palpitations, Implantable

Submission ID: 1554

ATRIAL FIBRILLATION AFTER ISCHEMIC STROKE DETECTED BY 24 HOURS CHEST HOLTER MONITORING

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MOROCCO

Background:

Atrial fibrillation (AF) is a major risk factor for recurrent ischaemic stroke, but often remains undiagnosed in patients who have had a documented ischaemic stroke. Holter-electrocardiogram-monitoring might increase detection of atrial fibrillation.

Objective:

This present study aimed to investigate the diagnostic yield of 24 hours chest holter monitor by determining the prevalence of covert AF in patients who previously had an ischemic stroke.

Methods:

A total of 62 patients who had ischemic stroke without previously documented AF were collected from the register of holter-electrocardiogram monitoring in the non-invasive exploration unit of university hospital center Mohammed VI of Marrakech, from January 2016 and December 2020. All patients included were screened for AF using 12-lead ECG and 24 hours Holter monitoring.

Results:

24 hours Holter monitoring uncovered AF in 6 of 62 patients (9,6%) with median age of 61 (+/- 10,8) and male predominance. AF was permanent within 5 patients and paroxysmal in 1 patient, whereas 12-lead ECG uncovered AF in 1 patient (1,6%). other rhythm and conduction abnormalities were detected in 35,4% of cases and in 55% of cases, the 24-holter ECG recordings were normal.

Conclusion:

The prevalence of covert AF in our study is 9,6%. The duration Holter-ECG recording time is 24 hours. In patients with ischaemic stroke, monitoring for AF is recommended by short-term ECG recording followed by continuous ECG monitoring for at least 72 h, also considering a tiered longer ECG monitoring if necessary. Which is difficult to apply in our context given the limited resources and the unavailability of implantable monitors and long-term recorders.

Submission ID: 1560

BIOLOGICAL PREDICTIVE FACTORS OF IN-HOSPITAL MORTALITY IN CARDIOGENIC SHOCK IN THE SETTING OF STEMI

SKANDER BOUCHNAG, AYOUB BELFKIH, MEJDI BEN MESSAOUD, NIDHAL BOUCHEHDA, MOHAMED MEHDI BOUSSAADA, MOHAMED MAJED HASSINE, MARWEN MAHJOUB, FETHI BETBOUT, HABIB GAMRA

TUNISIA

Introduction:

Cardiogenic shock (CC) is considered a devastating complication of the ST elevation acute myocardial infarction (STEMI). Its mortality remains high although huge progress in critical care and coronary revascularization.

Aim:

We aim to determine the biological predictive factors of in-hospital mortality in CC complicating acute STEMI in the MIRAMI registry. Materials and methods: It is a retrospective, mono-centric study including 267 patients from the MIRAMI (Monastir Acute Myocardial Infarction) registry between 1995 and 2016. These patients presented a CC complicating a STEMI which occurred at admission or during their hospitalization. We studied the biological features of these patients and analyzed the predicting factors of their in-hospital mortality.

Results:

The incidence of CC was 15%, mostly in men (77.9%). The mean age was 64.18 ± 12.5 years. Smoking was the most frequent risk factor (62.5%). Diabetes and hypertension occurred respectively in 44.9% and 34.5% of patients. The mean hemoglobin and creatinine rates were respectively 12.5 ± 2.3 g/dl and 142.2 ± 88.26 μ mol/l. Anemia was found in 105 patients (39.3%) and significantly more often in the elderly (≥ 60 years) ($p < 0.001$). Renal failure was diagnosed in 159 patients (59.6%) mainly in women and the elderly ($p < 0.001$ respectively). Hyperglycemia was found in 163 patients (61%). Leukocytosis was found in 186 patients (69.9%). Elevated myocardial necrosis markers (CPK, LDH, and troponin) were found in most patients. In-hospital mortality was 49.1%. Biological predicting factors of in-hospital mortality in a univariate analysis were: anemia ($p=0.001$), renal failure ($p<0.001$), hyperuricemia ($p=0.002$), hyperglycemia ($p<0.001$), CPK > 500 mmol/l ($p=0.04$) and LDH > 5000 mmol/l ($p=0.024$). In a multivariate analysis, only renal failure was restrained as an independent predicting factor of in-hospital mortality ($p < 0.001$).

Conclusions:

The incidence of cardiogenic shock is significant with high in-hospital mortality. The treatment strategy should be based on an urgent and multi-disciplinary approach taking into account all the biological abnormalities.

Submission ID: 1564

ANEMIA AS A SEVERITY FACTOR IN PATIENTS WITH MYOCARDIAL INFARCTION

HANANE CHOUKRANI, SARA ABOURADI, GHALI BENNANI, MED BENNOUNA, RACHIDA HABBAL

MOROCCO

Introduction:

Anemia is well known as an independent risk factor in coronary patients.

The objective of our work was to determine the relationship between hemoglobin levels and the evolution of patients admitted to the cardiology department of the Ibn Rochd University Hospital.

Methods:

412 patients admitted to the cardiology department of Ibn Rochd hospital in Casablanca between July 2019 and December 2021 for ACS with or without ST segment elevation were included. The patients were subdivided into two groups: group 1 ($n=135$) with a hemoglobin level < 11 g/dl and group 2 ($n=277$) with a hemoglobin level > 11 g/dl.

Results:

Among the 412 patients included, the mean age was 61 years, with a male predominance (74.7%). Renal function was more impaired in anemic patients with creatinine clearance at 54 ml per minute versus 83 ml per minute in non-anemic patients. Patients in group 1 presented signs of left heart failure more frequently than those in group 2 (44% vs. 11%). Diastolic function was more often impaired with higher LV filling pressures in anemic patients (60% versus 25%). However, left ventricular systolic function did not appear to be affected by this rate, with an average ejection fraction (43% in group 1 versus 45% in group 2).

Conclusion:

Anemia on admission for ACS is linked to a poor prognosis. A fairly strong relationship is found between low hemoglobin values and the evolution of patients, particularly in terms of clinical or latent heart failure.

Submission ID: 1574

ROLE OF THE INFLAMMATORY BIOMARKERS TO DETECTION OF THE CHRONIC PROGRESSION RHEUMATIC VALVULAR DISEASES: MOROCCAN EXPERIENCE OF THE CARDIOLOGY DEPARTMENT AT THE CHU IBN ROCHD, CASABLANCA

H. BENDAHOUE; S. ZAGDANE; M. AMRI; M. TAMIR; S. ABOURADI; K. BADAOU; N. MALICK; S. ZAHRI; N. MAHOUNGOU MACKONIA; M. HABOUB; S. AROUS; G. BENNOUNA; A. DRIGHIL; L. AZZOUZI; R. HABBAL

MOROCCO

Introduction:

The pathogenic mechanisms of valvular rheumatism are complex and still poorly defined. Inflammatory biomarkers are increased in patients with rheumatic fever, but do they remain increased in the chronic phase?

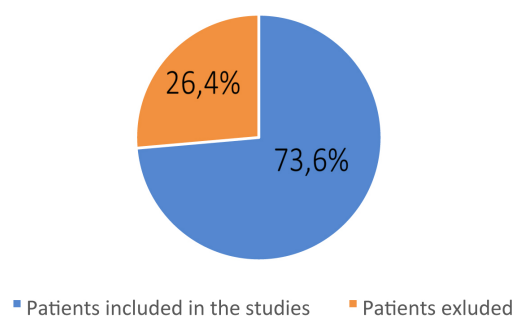
Objective:

Determine the role of inflammation detected by serum biomarkers in the progression chronic rheumatic valvular.

Methods:

We conducted a prospective study, from October 2017 to June 2022, on patients with valvular heart disease, at the cardiology department of the CHU Ibn Rochd. All patients underwent echocardiography

Repartition of patients with VHD



INFLAMMATORY BIOMARKERS	NUMBER OF PATIENTS
CRP level > 5mg/L	159 patients (30%)
ESR>20mm	92 patients (17.4%)
Fibrinogen>4g/l	120 patients (22.6%)

to assess valvular involvement, the degree of calcification and the mechanism of valvulopathy. Serum inflammatory markers: Fibrinogen (Fg), C-reactive protein (CRP), and Erythrocyte Sedimentation Rate (ESR) were measured in all patients. Patients with acute infection, underlying inflammatory disease, active cancer, or acute coronary artery disease were excluded.

Results:

During the 4 years of study, on a total of 720 patients with VHD, 530 patients were included. The mean age was 58.6 years, and a sex ratio (M/F) of 0.7. Mitral Regurgitation (48.9%) and Mitral Stenosis (46%) were the most frequent VHD. The rheumatic origin is the main cause of VHD in our context. We compared our valvular patients with a homogeneous group of healthy people (180 cases) without VHD and fulfilling the same exclusion criteria. The level of inflammatory markers was higher in patients with rheumatic VHD than in the healthy group. Thus, the CRP level was significantly elevated in 159 patients (30%) with a CRP >5mg/l, 92 patients (17.4%) had a ESR>20mm and 120 patients (22.6%) had a Fibrinogen>4g/l, according to laboratory standards of the CHU IBN Rochd Hospital. No correlation was observed between age or sex with the level of the markers measured.

Conclusion:

The chronic phase of rheumatic VHD is associated with an increase in inflammatory mediators correlated with the severity of the valve disease and with calcifications. And testify to the persistence of inflammation in the chronic phase. These results influence the management of chronic rheumatic valvular.

Submission ID: 1579

QSOFA SCORE: A USEFUL SCORE TO IDENTIFY PATIENTS AT RISK OF POOR PROGNOSIS IN INFECTIVE ENDOCARDITIS

MAAROUFI ANASS, BENANNI GHALI, KHALDI MOHAMMED, HABOUB MERIEM, AROUS SALIM, BENOUNA EL GHALI, AZZOUZI LEILA, DRIGHIL ABDENNACER, HABBAL RACHIDA

MOROCCO

Introduction:

According to the VIRSTA study, about sixty percent of infectious endocarditis (IE) are complicated by sepsis.

The qSOFA score is used to identify patients with a high risk of adverse outcome following their infection. Thus, our study aims to evaluate the predictive performance of qSOFA as a prognostic tool to identify those with IE at high risk for early poor outcome.

Methods:

This is a 6-years monocentric retrospective cohort study, included patients admitted for IE between 2017 and 2022 according DUKE criteria, with initiation of anti-bacterial therapy. The qsofa score was calculated for each patient and a score of ≥ 2 points was used as the prognostic cutoff value in predicting clinical deterioration and death within 30 days.

Results:

Overall, on a total of 123 patients, demographics showed the mean age of 40 years, sex-ratio 1.4. Twenty five percent had qsofa ≥ 2

and were considered the high qSofa group. A higher proportion of low qSOFA patients (10% vs 2%, $p=0.023$) had no pre-existing comorbid condition. The high qSOFA group were more likely to be infected with *Staphylococcus aureus*. The high qSOFA group had higher rate of persistently clinical and biologic infectious syndrome despite receipt of ≥ 4 days of effective therapy (34% vs 20%, $p=0.0039$), higher rate of 30-day mortality (19% vs 3%, $p<0.05$), and a longer length of hospitalization compared to the low qSOFA group ($p=0.01$).

Conclusion:

Our findings are consistent with those from prior studies involving other infectious syndrome. The qSOFA score could be used as prognostic factor in IE and patients identified with high score should receive aggressive management in particular in *Staphylococcus aureus* etiology.

Submission ID: 1581

THE IMPACT OF LEFT VENTRICULAR GEOMETRY IN RIGHT HEART FUNCTION IN HYPERTENSIVE PATIENTS

MARWA ABDELHEDI, SARRA CHENIK, AYMEN NOAMEN, TAHA YASSINE JABLOUN, ABDEDDAYEM HAGGUI, WAFI FEHRI

TUNISIA

Background:

The right atrium (RA) reflects the right ventricular (RV) diastolic function due to its relation with RV filling pressure, which is particularly important for the hypertensive patients who frequently have biventricular diastolic dysfunction. Only few studies have investigated RV deformation and function and RA reservoir function in hypertensive patients with different left ventricular (LV) geometry patterns.

Purpose:

To evaluate RV function and RA reservoir function in hypertensive subjects with various LV geometric patterns using the classification for LV geometry according to updated guidelines.

Methods:

This cross-sectional prospective study included 60 hypertensive patients who underwent complete 2D echocardiography. Using LV mass index and relative wall thickness (RWT) according to the updated classification, all subjects were divided into two groups: with and without left ventricular hypertrophy (LVH) and were then divided into four groups according to different LV geometry patterns: normal LV geometry, concentric remodeling, eccentric LVH and concentric LVH.

Speckle-tracking strain analyses of the RA and RV were performed: Global RV longitudinal strain was determined for the whole RV, including interventricular septum. Peak RA strain values from six segments using speckle-tracking software were averaged, representing RA reservoir function.

Results:

Right atrial volume evaluated by 2DE was higher in hypertensive patients with LVH than in individuals with normal LV geometry or concentric remodeling with $p=0.03$.

RV longitudinal strain and RA peak longitudinal strain were significantly decreased in concentric LVH pat compared with other hypertensive groups with $p=0.003$ and $p=0.0009$ respectively. Gradual deterioration of RV longitudinal function from patients with normal LV geometry and concentric remodeling to patients with concentric LVH was missed due to relatively small sample size.

Conclusion:

Left ventricular geometric patterns have significant impact on right heart function in hypertensive patients. Concentric LVH patterns have the most prominent negative effect on RA and RV morphological and functional remodeling

Submission ID: 1582

TOXIC CARDIOMYOPATHY DUE TO TRASTUZUMAB'S USE IN BREAST CANCER PATIENTS IN THE CARDIO-ONCOLOGY UNIT OF CASABLANCA

MAAROUFI ANASS, ABOURICHE AMIRA, BENDAHOU HAJAR, BELKOUCHIA SAMI, HABOUB MERIEM, AROUS SALIM, BENOUNA EL GHALI, AZZOUZI LEILA, HABBAL RACHIDA, TAWFIK NEZHA

MOROCCO

Introduction:

Trastuzumab has led to a significant improvement in the treatment of both advanced and early breast cancer that over-expresses HER2 receptors. However, it is associated with an important cardiotoxicity that requires a systematic monitoring of left ventricular ejection fraction (LVEF) before and during the treatment. We present our experience with patients who developed trastuzumab-related cardiotoxicity.

Purpose:

To evaluate the incidence and the reversibility toxic cardiomyopathy induced by trastuzumab in our cardio-oncology unit.

Methods:

We conducted a prospective observational study from January 2017 to June 2022 in the cardio-oncology unit of Casablanca, Morocco.

Results:

1583 patients were included. The average LVEF before initiation of trastuzumab was $59.9 \pm 11.2\%$ and $51.9 \pm 6.6\%$ at the end of treatment. A decreased LVEF was detected in 58 patients (3.6%), symptomatic in 30 cases, asymptomatic in 28 patients. Cardiotoxicity occurred for a mean cumulative dose $> 40\text{mg}/\text{m}^2$. During the follow-up, 48 patients (82.7%) had a retrieval of their LVEF after a mean period of 6.4 months after trastuzumab termination. 10 cases of TIC were irreversible despite an optimal cardioprotective therapy.

Conclusion:

Patients who develop toxic cardiomyopathy generally improve their LVEF on removal of the agent and after initiation of cardioprotective therapy. The clinical outcome is more favorable than anthracycline cardiotoxicity. This reversibility is usually observed in early identified patients, showing the importance of a systematic monitoring of LV function before, during and after the treatment.

Submission ID: 1583

THE IMPACT OF OVERWEIGHT IN LEFT ATRIAL AND LEFT VENTRICULAR STRUCTURE AND FUNCTION IN HYPERTENSIVE PATIENTS

MARWA ABDELHEDI, SARRA CHENIK, AYMEN NOAMEN, TAHA YASSINE JABLOUN, ABDEDDAYEM HAGGUI, WAFA FEHRI

TUNISIA

Background:

Obesity and hypertension are both associated with abnormalities in cardiac remodeling and high risk of heart failure (HF)

Therefore, it is important to highlight the further deterioration of left atrial (LA) and left ventricular (LV) function in hypertensive patients with overweight.

The purpose of the present study was to examine the contribution of overweight to left atrial (LA) and left ventricular (LV) dysfunction in hypertensive patients.

Methods:

This cross-sectional prospective study included 60 hypertensive patients who underwent complete 2D echocardiography

examination. Patients were classified into two subgroups according to their body mass index (BMI): non overweight patients ($n=15$, $\text{BMI} < 25\text{kg}/\text{m}^2$) and patients with overweight ($n=45$, $\text{BMI} \geq 25\text{kg}/\text{m}^2$).

The LV wall thicknesses, different diameters, left ventricular mass index (LVM) and relative wall thickness (RWT) were assessed by M-mode.

LV end-diastolic volume (EDV), end-systolic volume (ESV) and Left ventricular ejection fraction (LVEF) were calculated from the apical two- and four-chamber views using Simpson's method. The LA volume (LAV) was measured offline using the biplane area-length method, and was indexed to the body surface area.

Speckle-tracking strain analyses of the LV and LA were performed: We acquired LV short-axis views at the apical, mid and basal levels, and LV apical two, three and four-chamber views. Mean values of LA Strain corresponding to three phases of atrial function: reservoir (PALS), conduit and contraction (PACS), were obtained from the apical two- and four-chamber views.

Results:

The LV wall thicknesses, RWT, and LVM index of the overweight group were greater compared with the non-overweight group with $p=0.02$ $p=0.36$ and $p=0.06$ respectively.

There were no differences in LVEF, ESV and LAV index between the two groups. Only EDV was greater in the overweight group with a significant difference ($p=0.002$).

The LV longitudinal strain was lower in the overweight group ($p=0.42$). However, there was no difference in LV circumferential strain.

PALS was lower in overweight group with $p=0.08$. No significance difference is obtained with conduct and contraction between the two groups.

Conclusion:

These results suggest that LA and LV dysfunction, are aggravated with overweight in hypertensive patients probably leading to the elevated LV filling pressure and development to heart failure with preserved ejection fraction in future.

Submission ID: 1588

THE IMPACT OF PRIOR ANTITHROMBOTIC USE ON THROMBOEMBOLIC EVENTS IN PATIENTS WITH CARDIOVASCULAR DISEASE AND SEVERE COVID-19 INFECTION

AMINE BOUCHARHEM, NABILA ISMAILI, NOHA EL OUAFI

MOROCCO

Objective:

Our objective in this study is to determine the predictive factors of thromboembolic complications in patients with previous heart disease and severe covid-19 infection and the impact of previous use of antithrombotic drugs on protection against these complications.

Methods:

We conducted a single-center retrospective study of 158 patients with heart disease admitted to an intensive care unit for severe SARS-COV-2 infection. To determine the predictive factors, we used a logistic regression analysis.

Results:

Out of 158 patients, 22 were complicated by a thromboembolic event, i.e. 13.9%, mean age of our population was 64.03 (SD = 15.27), with a male predominance of 98 (62%). For the predictive factors of thromboembolic complications, and after multivariate analysis, we find the duration of hospitalization with (OR=0.92 ; 95%CI (0.863 - 0.983), $p=0.014$, previous use of anti-thrombotic drugs as a protective factor with (OR=0.288, 95%CI (0.091 - 0.911), $p=0.034$ for anti-platelet agents) and (OR=0, 322, 95%CI (0.131 - 0.851), $p=0.021$) for anti-coagulants (Figure1), and finally thrombocytopenia at admission as a risk factor (OR=4.58 95%CI

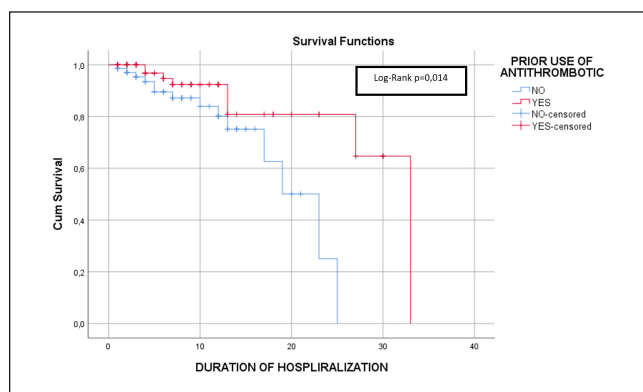


Figure 1

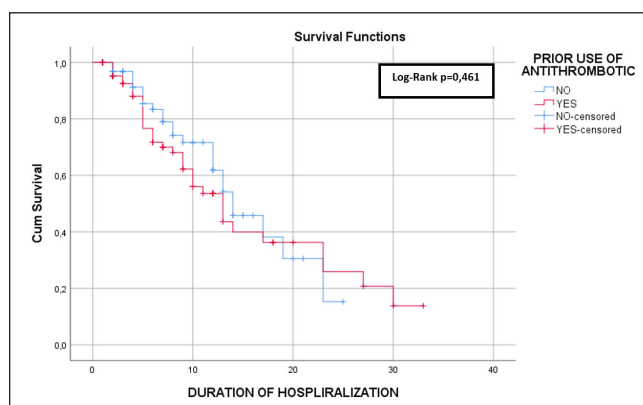


Figure 2

(1.2 - 10.627), $p=0.021$). D-dimer was not detected as a risk factor, and this can be explained by the characteristics of our population. Although the previous use of anti-thrombotic drugs protects against thrombo-embolic complications during severe infection, there was no benefit in terms of mortality (Figure2).

Conclusion:

Prior use of antithrombotic drugs is a protective factor against thromboembolic complications in patients with a history of heart disease but has no effect on mortality.

Submission ID: 1595

TOO MUCH SUGAR BLOCKS YOUR HEART? SINOATRIAL ARRESTS ASSOCIATED WITH DIABETIC KETOACIDOSIS REGRESSING TO SINUS RHYTHM AFTER COMPENSATION OF DIABETIC PROCESS

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MOROCCO

Background:

Ketoacidosis is a serious life-threatening condition due to its profound hydro electrolytic disturbances and multiple complications. Ketoacidosis itself is induced by numerous conditions and diseases, of which diabetic decompensation is one of the frequent etiologies.

We report the case of a patient presenting to the emergency department for diabetic ketoacidosis decompensation, complicated by multiple sinoatrial arrests regressing after medical treatment. A review of the literature will be discussed in order to expose the different possible etiopathogenic mechanisms.

Case presentation:

A 51-years-old man with 7-year history of type 2 diabetes under oral anti-diabetic drugs, two previous hospitalizations for ketoacidosis

Biological parameter	Corresponding unit
Na+	136
K+	5,3
Cl-	96
Blood glucose	6,1
HCO3-	17
urea	0,36
creatinine	11,6
pH	7,24
pO2	122
pCO2	31
Anion gap	28,5

Table 1: Biological parameters of the patient on admission to the emergency department.

decompensations, triggered by a pulmonary infection and poor therapeutic compliance respectively, presented to the emergency department for sluggishness, asthenia associated with diffuse abdominal pain. Clinical examination found a somnolent patient, polypneic at 27 cpm with correct room air saturation, his blood pressure figures were 97/61 mmHg and bradycardia at 37 bpm. Abdominal examination found diffuse tenderness without specific localization of pain or hepatosplenomegaly, the hernial orifices were free.

The initial blood analysis showed hyperglycemia at 6,1 g/L, acetone and glycosuria were detectable with urine dipsticks, in addition a blood gas analysis revealed a metabolic acidosis with high anion gap (Tab. 1). The diagnosis of ketoacidosis decompensation was established with medical treatment and search for triggering factors started. The initial ECG showed the presence of numerous sinoatrial pauses and arrests of variable duration (between 2 and 8 seconds) with idioventricular escape (Fig.1).

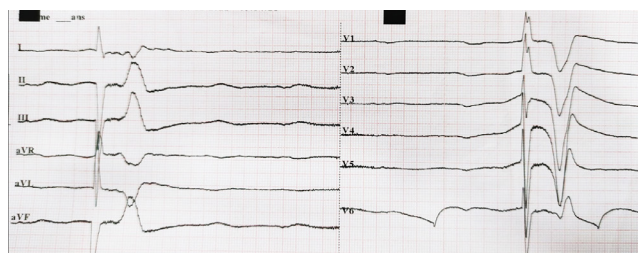


Figure 1

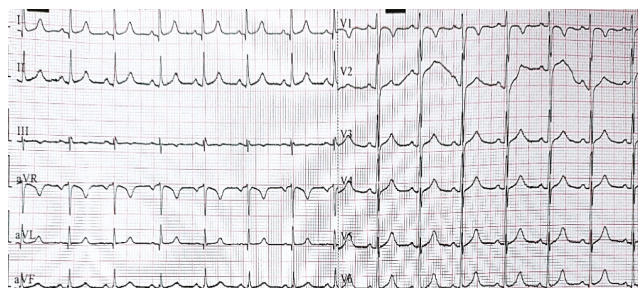


Figure 2: Return to sinus rhythm.

The patient received immediate medical treatment focused on rehydration, insulin therapy and correction of acidosis. Temporary endocavitary cardiac pacing was discussed, however, regression of the conductive disorders was noticed during the first hours with return of regular sinus rhythm on ECG (Fig.2).

Conclusion:

Diabetic ketoacidosis is still a frequent emergency requiring agile diagnostic and therapeutic management. Alteration of consciousness state during DKA is often attributed to cerebral edema, yet it could be related to cerebral hypoperfusion cause by conduction disorder, like sinus arrest in our case. Thus, clinicians should be aware of that presentation and refer to current literature for optimum management.

Submission ID: 1600

PROSTHETIC VALVE THROMBOSIS: A REAL CHALLENGE FOR CAREGIVERS (A CASE SERIES OF 9 PATIENTS)

NABAWI HIND, BOUTGOURINE MINA, HAZZAZI IKRAM, ELJAMILI MOHAMED, ELHATTAOUI MUSTAPHA

MOROCCO

Background:

Prosthetic valve thrombosis is a rare but serious complication of valve replacement. It's a life-threatening complication in the short term. We reviewed its incidence and risk factors essentially in relation with inadequate anticoagulation as well as treatment strategies.

Objective:

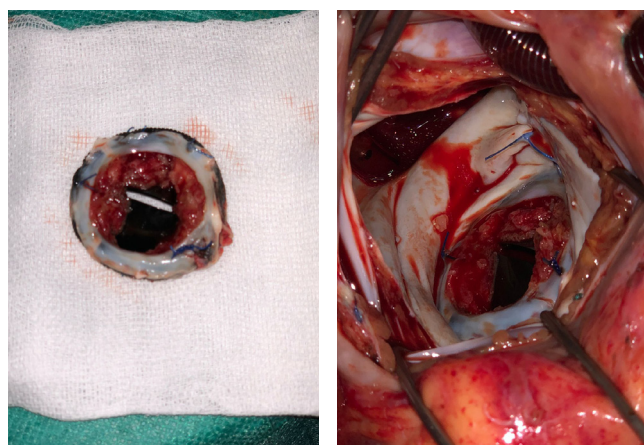
Insist on the key importance of education of patients about anticoagulation. Also, to review the latest guidelines on its management.

Methods:

Retrospective and descriptive study conducted in the cardiology department of the University Hospital of Marrakech from August 2021 to August 2022 including all patients hospitalized for Prosthetic valve thrombosis.

Results:

Nine cases were found during the period of the study. Females predominate with a sex ratio of 0.28. The average age was 41 years with extremes ranging from 30 to 60 years. 5 patients had mitral prosthesis and 4 in mitro-aortic position. However, all patients

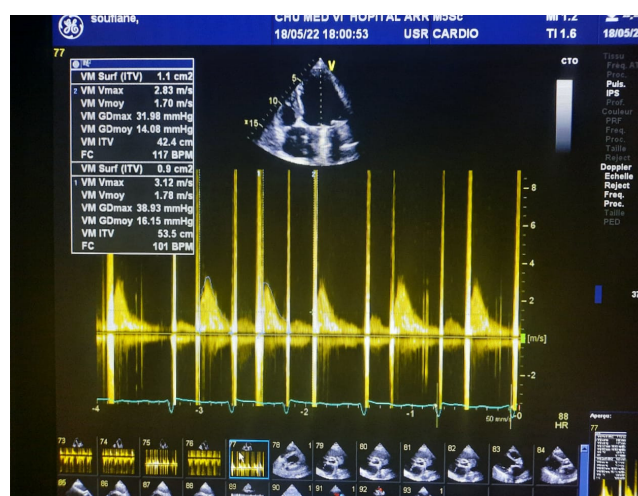


Intraoperative evidence of obstructive thrombus in the mitral prosthesis.



Radiocinema of a mitral prosthesis showing a blocked valvular fin.

TEE showing a blocked mitral valve fin.



TTE showing a mean trans mitral gradient estimated at 16 mmh.

had only mitral thrombosis. Time interval between surgery and thrombosis varies from 2 to 10 years.

All patients were poorly compliant with antivitamin K therapy with irregular INR monitoring.

All patients were unaware about the seriousness of the situation and were from a disadvantaged background.

3 patients were admitted for dyspnea stage III, 6 for dyspnea stage IV, in addition of syncope in one patient.

TTE and TEE showed mitral valve block in all cases with high mean transvalvular gradients. Radiocinema was performed in all patients and confirmed the mitral valve block.

Initial treatment was based on UFH with diuretics. Thrombolysis was performed in only one patient due to hemodynamic instability. All the patients underwent prosthetic mitral valve replacement with per operative evidence of obstructive thrombus.

Discussion:

According to the latest European guidelines, urgent surgery is formally indicated in case of obstructive thrombosis with NYHA class III or IV dyspnea (I B). Thrombolysis is an alternative treatment to surgery for patients with NYHA class III or IV dyspnea for whom surgery is contraindicated or not available (IIa, B)

Conclusion:

This study emphasize the need of meticulous surveillance of anticoagulation and most importantly more proactive work on therapeutic education from caregivers to prevent the occurrence of this pathology .

Submission ID: 1606

THIS STUDY AIMS TO EVALUATE THE PROGNOSTIC VALUE OF HEART RATE VARIABILITY (HRV) STUDY FOR DEATH AND NYHA CLASS IMPROVEMENT IN PATIENTS WITH SYMPTOMATIC ADVANCED HEART FAILURE UNDERGOING CARDIAC RESYNCHRONIZATION THERAPY (CRT)

SANA HAMDI, ABDEDDAYEM HAGGUI, WAFA FEHRI

TUNISIA

Objectives:

This study aims to evaluate the prognostic value of heart rate variability (HRV) study for death and NYHA class improvement in patients with symptomatic advanced heart failure undergoing cardiac resynchronization therapy (CRT).

Background:

Data on the prognostic value of HRV in patients treated with CRT are scarce. To our knowledge, the present study is the first to describe the relationship between the baseline HRV values and the response to CRT in an African population.

Methods:

We analyzed the relationship between pre-implant time-domain HRV parameters (SDANN: Standard Deviation of the Averages of NN intervals in all 5 min segments of the entire recording, SDNN: Standard Deviation of all NN intervals, rMSSD: the squared root of the mean of the sum of the squares of differences between adjacent NN intervals, pNN50: number of adjacent NN intervals differing by more than 50 ms divided by the total number of all NN intervals) and the clinical response to CRT assessed by NYHA class improvement and one-year mortality. This was a descriptive study that included 31 patients with symptomatic advanced heart failure in normal sinus rhythm treated with CRT in the cardiology department in the Military Hospital of Tunis.

Results:

All the time-domain HRV parameters were abnormally low in our population compared with baseline values in favor of sympathetic hypertonia and decreased parasympathetic tone. The alteration of HRV did not depend on the ischemic or non-ischemic nature of the underlying heart disease. Altered heart rate variability was proportional to the reduction of the left ventricular ejection fraction. In our study, a preserved baseline HRV (defined as SDANN \geq 93 ms) was associated with a lower one-year mortality rate, a lower rate of rehospitalization for heart failure and a better clinical response to CRT. In multivariate analysis, preserved HRV appears to be a predictive factor of good response to CRT. These results are in agreement with those reported in the literature by various investigators: MUSILAK and all, KAMEN and all and others.

Conclusions:

The analysis of HRV and clinical response to CRT suggests that autonomic dysfunction identifies patients with limited benefit from CRT. Pre-implant HRV analyses may help to optimize qualification for CRT.

Submission ID: 1609

ECHOCARDIOGRAPHIC EVALUATION IN NEONATES SUSPECTED TO CONGENITAL HEART DISEASE

ELLA LAHMAIER, KAOUTHAR HAKIM, RIHAB BEN OTHMEN, MOHAMED AMINE SOULA, SABRINE SOUDANI, KARAM ZAREI, SYRINE BEN JEDDOU, CHAIMA GHORBEL, HELA MSAED, FATMA OUARDA

TUNISIA

Background:

Congenital heart disease (CHD) is the most common congenital disorder in newborns. This condition have different

presentations; from defects that can progress asymptotically to complex anomalies with significant symptoms and high mortality.

Objective:

The aim of our study, was to assess the prevalence of CHDs among newborns referred to our department with clinical history and symptoms suggestive CHD.

Methods:

Monocentric, descriptive study performed on 300 newborn suspected to have CHD, referred to our cardio pediatric department for ultrasound examination, from March 2022 to July 2022.

Patent ductus arteriosus and patent foramen oval in pattern newborns were exclude.

Congenital heart disease (CHD) is the most form

Results:

From 300 included neonates, we noted male predominance of 56%. Sex ratio was 1,3.

Prenatal diagnosis was made only in a limited number of patients, accounting for only in 32 (10%) infants.

Heart murmur, cyanosis and oxygen dependence was main indications to transthoracic echocardiography (TTE) examination observed in 30, 22 and 15 respectively.

Overall, echocardiographic findings were normal in 163 (54%) infants.

Low risk-CHDs were found in 71(50%) patients; ventricular septal defect, atrial septal defect and atrioventricular septal defect was found in 35, 32, and 4 patients respectively.

Medium risk-CHD were noted in 59 (32%) newborn. Among this group, we found mainly neonatal hypertension in 19% and tetralogy in 13%.

High risk-CHDs such as truncus arteriosus, transposition of great arteries, total Anomalous Pulmonary Venous Return were found in 17 (10%).

Conclusion:

Our Results showed that almost half of symptomatic neonates was found to have CHD. This highlights the importance of clinical examination in newborns. Hence, our study gives the green light to a large prescription of ultrasound examination as soon as clinical abnormalities are found in newborns.

Submission ID: 1616

POSTURAL ORTHOSTATIC TACHYCARDIA SYNDROME (POTS): IN YOUNG SUBJECTS (ABOUT 8 CASES)

KARIM FATIHA, IMANE TLOHI, KHALIL MARIA, HAROUNA SEYDOU, FADOUL ADAM

MOROCCO

Introduction:

Postural orthostatic tachycardia syndrome (POTS) is a common form of dysautonomia that is little known and underdiagnosed, especially in young people. It is an orthostatic intolerance associated with excessive tachycardia \geq 30 bpm when standing (within 10 minutes) with multiple and recurrent somatic symptoms over 6 months. Its impact is major on the quality of life but the prognosis is most often favorable.

Objective:

The aim of this study is to underline the frequency and the impact of POTS on the quality of life and the interest of the exploration of the ANS to make the diagnosis.

Patients and methods:

This retrospective study includes a group of 8 patients with POTS from 19 to 28 years old (average age equal to 23.5 ± 4 . years) followed in the cardiology department at the Casablanca University Hospital. Autonomic tests include deep breathing, isometric contraction, hyperventilation, orthostatic test and mental stress.

Results:

On the orthostatic test, heart rate has increased of 40 ± 18.05 bpm before the tenth minute without orthostatic hypotension. At mental stress, the central sympathetic beta response was at $25.5 \pm 13.6\%$ and the central sympathetic Alpha response was at $13.41 \pm 8.54\%$. At the deep breathing test, vagal activity was at $67.68 \pm 27.9\%$. And on the hand grip test, the vagal response was at $39.4 \pm 21.8\%$ while the peripheral sympathetic response was at $14.45 \pm 8.29\%$.

Discussion:

POTS is a frequent dysautonomia, defined by the association of chronic symptoms of intolerance to orthostatism (for more than 6 months) with an increase in heart rate ≥ 30 within 10 first minutes of moving to the upright position and in the absence orthostatic hypotension [1].

Symptoms include both of cardiac symptoms (palpitations, chest pain, dyspnoea, fainting, or syncope) and non-cardiac symptoms (headache, nausea, tremors, blurred vision, poor sleep, exercise intolerance, asthenia), leading to a significant limitation of functional capacity.

POTS can be due to a neuropathic origin, a central hyperadrenergic activity, a deficiency on norepinephrine transporter or a mast cells activation.

In our study, 75% of the subjects were women. All patients had a high central and peripheral sympathetic B response with a normal central and peripheral alpha response. 7/8 patients had associated vagal hyperactivity.

In the literature, there is a predominance in young people with a peak between 15 and 25 years old, and with a great female predominance (sex ratio: 1/5). There is a familial predisposition in a quarter of cases [2].

Patients were put on hygieno-dietary measures and beta-blockers. With a clear improvement in their symptoms

Conclusion:

POTS is frequent, disabling, often neglected with central hyperadrenergia as the main etiology. It has a good prognosis if it's well treated.

Submission ID: 1623

INFECTIVE ENDOCARDITIS WITH LOW C-REACTIVE PROTEIN: IS IT WORTH CONSIDERING?

HAYAR SALAH EDDINE, MAAROUFI ANASS, CHAWKI KHAWLA
MOROCCO

Background and purpose:

Bacterial infective endocarditis (IE) is rarely suspected in patients with a low C-reactive protein (CRP) concentration.

To address the incidence, characteristics and outcome of left-sided valvular IE with low CRP concentration.

Methodology:

This was a retrospective analysis of cases of IE discharged from a tertiary hospital between December 2013 and June 2022.

The 10% lowest CRP concentration ($<25\text{mg/L}$) was used to define low CRP concentration. Right-sided cardiac device-related IE, non-bacterial IE, sequellar IE and IE previously treated by antibiotics were excluded.

Results and discussion:

Of the 122 patients, 17 (14%; median age 40 [15–65] years) had definite (n=13) or possible (n=4) left-sided valvular IE with

CRP $<25\text{mg/L}$ (median 12 [1.5–24.8] mg/L). The median white blood cell count was 8 (3–15.6) G/L.

The main presentations were heart failure (n=14; 82%) and stroke (n=1; 6%). Transthoracic echocardiography (TTE) showed vegetations (n=13) or isolated valvular regurgitation (n=2).

Overall, nine patients (53%) had severe valvular regurgitation on transoesophageal echocardiography (TOE), and two patients (12%) underwent cardiac surgery.

82% of patients survived at 1-year follow-up. Bacterial pathogens were documented only in four patients (streptococci, coagulase-negative Staphylococcus, gamma haemolytic Streptococcus) using blood cultures solely, due to lack of disponibility of specific serology / valve culture and/or polymerase chain reaction analysis

Conclusions:

Left-sided valvular IE with limited or no biological syndrome is rare, but is often associated with severe valvular and paravalvular lesions. TOE should be performed in presence of unexplained heart failure, new valvular regurgitation or cardioembolic stroke when TTE is insufficient to rule out endocarditis, even in patients with a low CRP concentration.

Submission ID: 1626

IMPACT OF DIPPER PROFILE ON TARGET ORGAN DAMAGE AND CARDIOVASCULAR RISK IN HYPERTENSIVE PATIENTS. A PROSPECTIVE STUDY

AMINE BOUFARES, ANTIT SAOUSSEN, CYRINE ANTIT, RIDHA FEKIH, BEN KAAAB BADREDDINE, BOUSSABAH ELHEM, ZAKHAMA LILIA

TUNISIA

Background:

Unlike other methods of blood pressure measurement, ABPM offers the possibility of studying BP at night. The aim of our work was to study the correlation between the dipper profile, the target organ damage and the occurrence of cardiovascular events.

Methods:

Our study included 240 consecutive treated hypertensive patients followed at the outpatient clinic of the Internal Security Forces Hospital in La Marsa, who had an ABPM and were followed for a period of five years.

Results:

Analyzing the ABPM results, 52% of patients had a "non dipper" profile, 21% "normal dipper," 13% "extreme dipper," and 14% "reverse dipper." Twenty-four patients were lost to follow-up. No deaths were noted. Microalbuminuria was observed in 31.5% of our patients, 73% of whom were non-dippers. Electrical LVH was described in 7.2% of patients, also mostly of non-dipper status. Forty-three cardiovascular events occurred at 5 years of follow-up: Coronary syndrome was the most frequent event (35%), followed by atrial fibrillation (30%), heart failure (4%) and stroke (2%) Non-dipper was the profile most correlated with events (5.9%), followed by riser (4.2%), normo-dipper (3.5%), and extreme dipper (2.1%).

Conclusion:

We conclude that the non-dipper profile is associated with an increased cardiovascular risk and significantly increases target organ damage. Thus, ABPM is an interesting long-term prognostic tool in hypertensive patients that should be made more accessible and available.

Submission ID: 1627

PREVALENCE OF ARRHYTHMIAS ON 24-H AMBULATORY HOLTER ELECTROCARDIOGRAM MONITORING: FROM 24-H AMBULATORY HOLTER ELECTROCARDIOGRAM REGISTER OF MOHAMMED VI UNIVERSITY HOSPITAL OF MARRAKECH

ZAINAB BOUDHAR, HAFSSA ROUAM, MOHAMED EL JAMILI, MUSTAPHA EL HATTAOUI

MOROCCO

Background:

The 24 h ambulatory Holter electrocardiogram (ECG) detect and quantify cardiac dysrhythmias in individual patients. It is particularly able to document bradyarrhythmic or tachyarrhythmic episodes which might be missed on normal 12-lead resting ECG recordings. It is, therefore, useful to identify patients with symptomatic or asymptomatic paroxysmal tachy/bradyarrhythmias.

Objective:

The aim of this study is to present our findings on the prevalence of arrhythmias detected on the 24-h Holter ECG of relatively a large cohort of patients referred to the noninvasive unity of cardiology in university hospital center Mohammed VI of Marrakech over the last few years.

Methods:

A total of 380 patients data was collected from the register of 24 h ambulatory Holter ECG in the non-invasive exploration unity of university hospital center Mohammed VI of Marrakech, From January 2019 to November 2021, consisting of 148 males and 232 females with a mean age of $56,31 \pm 14,58$.

Results:

The most common indication for Holter monitoring in this group was unexplained palpitations. Ventricular extrasystole was the most common arrhythmias found on Holter ECG. Only 9 out of the 380 patients had Holter ECG evidence of non-sustained ventricular tachycardia (VT). There was no significant difference in the prevalence of cardiac arrhythmias in males compared to their female counterparts. However, in the group of elderly patients (65 years and above), the prevalence of cardiac arrhythmias was significantly higher.

Conclusion:

The study suggests that palpitation is the main indication for 24-h ambulatory Holter ECG test. It also showed that ventricular extrasystoles are the most common arrhythmias detected. In addition, it reinforces the fact that elderly patients were more likely to have cardiac arrhythmias compared to their younger people.

Submission ID: 1630

PERCUTANEOUS TREATMENT FOR COMPLEX COARCTATION OF THE AORTA

AMAMOU IMEN, OUANES SAMI, GRIBAA RIM, SLIM MEHDI, BEN FARHAR SAMEH, NEFFATI ELIES

TUNISIA

Background:

Coarction of the aorta is a common congenital heart disease with high mortality rate in absence of treatment. Endovascular repair has become the procedure of choice among adults.

Several anatomic or evolving characteristics of coarctation may create challenging conditions for percutaneous repair.

Case presentation:

A 52-year-old patient was referred to the cardiology department for further investigations of resistant hypertension.

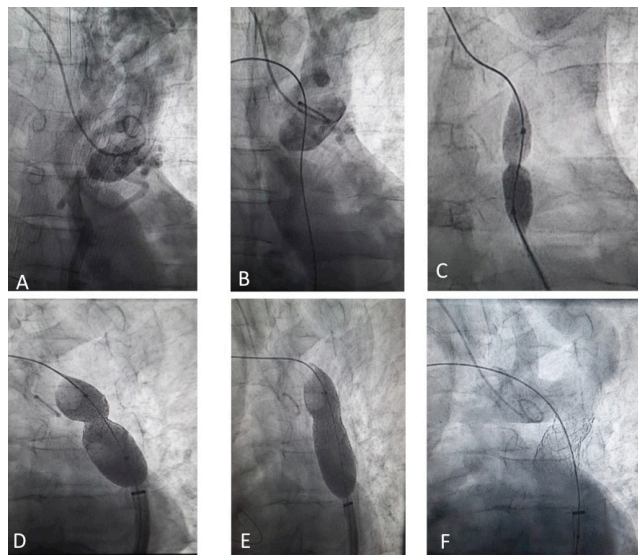
Physical examination revealed asymmetric blood pressure between upper and lower limbs beyond 30 mmHg and bilaterally diminished femoral pulses.

CT Scan



Coronal reconstruction CT scan showing a severe and tortuous coarctation of aorta isthmus with post stenotic dilatation

Percutaneous procedure step by step:



A: Aortic angiography via radial access showing the severe coarctation of the aorta with developed collaterals

B: Successful cross of the coarctation with hydrophilic guide wire

C: predilatation with a vascular balloon

D/E: Stent deployment

F: Good stent position and remodeling of aortic area with no complications.

Electrocardiogram showed a sinus rhythm and left ventricle hypertrophy.

Transthoracic echocardiogram revealed a preserved left ventricle ejection fraction with diastolic dysfunction and severe coarctation of the aorta (CoA) without aortic valve neither root diseases.

Cardiac computed tomography scan confirmed the tightness of

the CoA and its complexity by showing a very tortuous and kinked isthmus aorta.

Percutaneous procedure was done under general anesthesia, using at first a right femoral artery approach which failed to cross the extremely tight CoA. A secondary arterial access via the radial artery had allowed antegrade catheterization and angiography of the ascending aorta. Several predilatations of the stenosis were performed using initially coronary balloons than vascular balloons with successively higher diameter sizes. A 0.035 super stiff guide wire was than exchanged and retrieved through femoral artery sheath using a lasso catheter. After careful measurement of all aortic segments, a covered CP stent was mounted and crimped on a balloon in balloon (BIB) catheter than advanced through a 14 French delivery sheath to the CoA area via femoral approach.

Final angiographic inspection following stent deployment showed no immediate complication and well stent expansion. No residual peak-to-peak aortic gradient was noted.

No further complications had occurred during hospitalization and the patient was discharged 2 days later.

Conclusion:

Stent repair of complex coarctation is a safe and feasible strategy facilitated with noninvasive imaging techniques, good planning and teamwork attitude.

Submission ID: 1632

A NEW FEASIBLE AND SAFE ACCESS POINT IN INTERVENTIONAL CARDIOLOGY : THE TRANS-PALMAR ACCESS

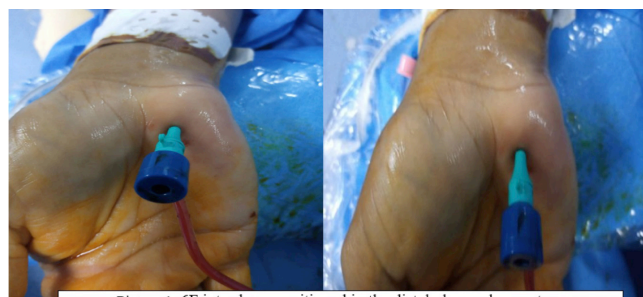
ALI KHORCHANI, HOUCINE ABDELHAFIDH, ZINE EL ABIDINE BEN ALI, FEKIH RIDHA, IMANE BOUALAOUI, TAHA LASSOUED, SOUAD FERJENI, SAMI MILOUCHI

TUNISIA

Background:

The selection of the vascular access is a crucial moment during an interventional cardiology procedure. Radial approach is recommended access over the femoral access because of a lower rate of bleeding complication. Many distal access were tested but their reliability is not yet validated.

A new feasible and safe access point in interventional cardiology: The trans-palmar access



Picture 1: 6F introducer positioned in the distal ulnar palmar artery



Picture 2: compressive bandage after a successful distal ulnar approach



Figure 5: local condition of the hand later after successful distal ulnar approach

Aim:

To evaluate the feasibility and safety of the distal ulnar palmar access on coronary angiography and intervention.

Results:

In 21 out of 27 patients, distal palmar (DUP) artery catheterization was feasible with an average puncture time of 3.5 minutes. Haemostasis was obtained in all cases within 1 hour compressive bandage which was well tolerated. No major complication was reported.

Conclusion:

The DUP approach is a new innovative access with preliminary results suggesting its feasibility and safety. Larger studies are needed to confirm this results and clarify its reliability.

Submission ID: 1633

AUTOMATIC CORONARY ANGIOGRAM ANALYSIS ALGORITHM: KEYFRAME EXTRACTION PHASE

AIMAN GHRAB, HOUNAIDA MOALLA FOURATI, AMINE BAHLOUL, BASSEM BEN HAMED, RANIA HAMMAMI, LEILA ABID

TUNISIA

Introduction:

Coronary angiography is the gold standard for the diagnosis of coronary artery disease (CAD). Treatment decision is based on the severity of the disease and the obstruction percentage. This evaluation, often made by visual assessment done by clinicians during catheterization procedure, is the subject of high interobserver variability.

Objective:

We aim to develop a fully automated coronary angiogram analysis method to have an accurate evaluation of CAD. To do so, keyframe extraction is the first and most important step.

Methods:

The full dataset was collected from the exams performed by a single catheterization laboratory during the period between January 2018 and December 2021. We used a sample of angiograms for the keyframe extraction step. Each one was annotated by two experienced physicians using a web application. Each frame, being a set of pixels, undergo processing based on predefined filters. Filter pipelines have also been used to seek better performance. The frames were tested sometimes with and sometimes without cropping. The surviving pixel were used to calculate an intensity score. The frame with highest score and the six neighboring frames were chosen as keyframes. Each processing method was compared to the manually annotated frames. The processing methods are detailed in table 1.

Results:

The full dataset consisted of 3159 angiographic study: a total of 37209 coronary angiogram was extracted. We used a sample of 45 angiogram to extract a total of 1434 frames. The manual annotation found 474 keyframe and 960 non-keyframe. By using the sato filter,

Table 1 Frame processing methods and their performance

Process	Without cropping	With cropping
Unrefined	20.80	40.80
Majering	36.91	13.45
Canny	81.74	78.16
Sato	85.74	80.92
Canny-Gaussian	81.74	78.16
Gaussian-Canny	60.86	60.37
Gaussian-Majering	67.93	22.77
Majering-Gaussian	36.91	13.45
Sato-Gaussian	85.18	82.77
Gaussian - Sato	82.96	75.06

we had an accuracy of 85.74%. The results of the other processing methods are resumed in table 1.

Conclusion:

Keyframe extraction using image processing seems to be efficient and can be used for a fully automated coronary angiogram analysis.

Submission ID: 1634

EPIDEMIOLOGY AND PROGNOSIS OF COAGULASE-NEGATIVE STAPHYLOCOCCAL ENDOCARDITIS

SAMIA EJJELE, ANAS MAAROUFI, GHALI BENNANI, MOHAMED KHALDI, SALIM AROUS

MOROCCO

Introduction:

Coagulase-negative staphylococci (CoNS) is recognized as a common pathogen responsible for infective endocarditis IE occurs mostly in patients with intra cardiac devices or prosthetic valves. becoming an important cause of native valve endocarditis too (NVE). Virulence and antibiotic resistance of CoNS affects IE outcome.

Methods and Materials:

The medical records of 115 patients clinically diagnosed with IE were reviewed for clinical and microbiology data admitted between January 2014 to december 2018. Blood cultures were detected by using Bactecaerobic / anaerobic /mycoticbottles.

Results:

There were 115 case of infective endocarditis admitted to our service during the period of study 26/115 cases were positive for bacterial pathogens. The isolates were identified as Coagulase negative staphylococci in 11 cases representing 9.5% of all IE, 45% were related to ICD (4 hemodialysis catheter in RA, 1 pacemaker), 9% were prosthetic Valve endocarditis, 45% were native valve endocarditis.

45% patients, isolates were resistant to methicillin and cephalosporin, with a higher rate in ICD IE (80%); tricuspid valve was the most involved 36%, vegetations were present in 81% cases, with one case of multiple abscesses, 54% patients required surgery, including almost all patients with ICD IE. Mortality rates were 9% related to advanced access dissemination, length of hospital stay were 41 days in cases related to resistant species and 29 days in sensible ones, vancomycin was used in 72% of cases.

Conclusion:

CoNS IE is mainly associated with ICD, surgical management improve prognosis and mortality is more related to virulence and local dissemination than resistance to Penicillin as long as it is sensible to vancomycin.

Submission ID: 1638

HIGH-GRADE ATRIO-VENTRICULAR BLOCK IN YOUNG SUBJECTS SECONDARY TO VAGAL HYPERACTIVITY (ABOUT 3 CASES)

KARIM FATIHA, HAMINE YOUSRA, TLOHI IMANE, ELAMRAOUI ASMAA

MOROCCO

Introduction:

Conduction disorders in young subjects can have several etiologies. Vagal hyperactivity, which corresponds to excessive activity of the parasympathetic system, is a frequent cause, hence the interest of exploring the autonomic nervous system (ANS) in young patients with conductive disorders.

Patients and methods:

We report the case of 3 young patients aged 22, 28 and 32 years, with no particular history, followed in the cardiology department at the Casablanca University Hospital. Who presents faintness and dizziness and several episodes of syncope in two of these patients. The clinical examination is normal apart from arterial hypotension, the baseline ECG was normal in 2 patients and showing a BAV 2/1 in the 3rd patient. The holter ECG showed nocturnal 2/1 atrioventricular block (AVB). ANS tests include deep breathing, isometric contraction, hyperventilation, orthostatic test, and mental stress. Showed a very high vagal response, a normal central and peripheral alpha and beta sympathetic response and a severe decrease in supine blood pressure in all 3 patients. Marked vagal hyperactivity is responsible for BAV. The patients were put under MHD and Ethyl-phenyl-ephine with good evolution.

Discussion:

The parasympathetic innervation is distributed mainly to the sinus node, atrioventricular node and, to a lesser extent, to the biauricular and ventricular myocardium. The sympathetic innervation concerns the whole of the heart with a distribution as marked at the level of the ventricle as elsewhere. Parasympathetic modulation has a negative chronotropic effect. At rest, the HR is mainly under the vagal brake. Acetylcholine (ACh) released by parasympathetic neurons decreases the frequency of discharge at the level of the sinus node. It also has a negative effect on the release of norepinephrine and attenuates the response to adrenergic stimulation. Cardiovascular modulation by the parasympathetic system is very rapid, while that of the sympathetic system requires a longer time. Manifestations related to vagal hyperactivity can take many forms. The set of clinical manifestations is called vagal syndrome.

Conclusion:

Vagal hyperactivity is a common cause of high-grade BAV that needs to be explored by ANS tests for more adequate management.

Submission ID: 1642

OUTCOMES IN ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION TREATED WITH PRIMARY PERCUTANEOUS CORONARY INTERVENTION OR PHARMACAINVASIVE STRATEGY IN A SINGLE TUNISIAN CENTER

DERWICH MOHAMED, DENGUIR HICHEM, ABID SLIM, BATRAWI AHMED

TUNISIA

Objective:

The Primary angioplasty in myocardial infarction (PAMI) is the preferred reperfusion strategy for ST-segment elevation myocardial

infarction (STEMI). The pharmacoinvasive strategy (PIs) is a reasonable alternative when prompt PAMI is not possible, especially in areas where percutaneous coronary intervention centers are not readily available. This study assessed the feasibility of PIs under local conditions.

Methods:

This was a retrospective case-control observational study of 103 patients in a Tunisian center of Gabes, (southeast).

We compared the clinical and angiographic characteristics, and in-hospital outcomes of patients undergoing PAMI during the first 12 h and those receiving a PIs.

Results:

We identified 75 and 28 consecutive patients enrolled in pharmacoinvasive and PAMI strategies, respectively.

There were no differences between PIs and PAMI in terms of age (58 years vs. 61 years, $p=0.966$), respectively.

There were no differences between PIs and PAMI in terms of coexisting cardiovascular risk factors: Hypertension (36% vs 32 % $p=0.715$), Diabetes mellitus (51% vs 56% $p=0.665$), History of dyslipidemia (34% vs 36% $p=0.862$), Current smoker (56% vs 50% $p=0.586$), respectively.

The median door-to-needle time was 37 min in the pharmacoinvasive group and the median door-to-balloon time was 91 min in the PAMI group ($p=0.009$).

TIMI flow grade 3 at baseline was present in 80% of patients in the pharmacoinvasive group and 3.6% of patients in the PAMI group. After the procedure, the proportion of TIMI flow grade 3 became 93.3% and 85.7%, respectively.

There were no differences between PIs and PAMI in terms of total in-hospital mortality (5.3% vs. 3.6%, $p=0.711$), heart failure (16% vs. 17.9%, $p=0.821$), major bleeding (0% vs. 3.6%, $p=0.1$) or component major adverse cardiac events (MACE) (16% vs 21.4%, $p=0.519$).

Conclusions:

Within the context of a STEMI management, a pharmacoinvasive strategy was associated with similar in-hospital rates of mortality, heart failure, major bleeding, or component major adverse cardiac events (MACE) as compared with a primary angioplasty in myocardial infarction strategy.

Submission ID: 1643

NONINVASIVE CARDIOVASCULAR EVALUATION OF PATIENTS WITH ERECTILE DYSFUNCTION

CHENIK SARRA, NOEMEN AYMEN, JABLOUN TAHA YASSINE, HAGGUI ABDEDDAYEM, HAJLAOUI NADHEM, FEHRI Wafa

TUNISIA

Introduction:

Erectile dysfunction (ED) is now recognized in most cases to be of vascular cause, with endothelial dysfunction as the main pathophysiological mechanism. ED was considered as a marker for an asymptomatic cardiovascular disease (CVD). Two-dimensional speckle tracking echocardiography seems to be a novel technique used to detect subclinical cardiovascular disease.

Objective:

The aim of this study was to evaluate the role of two-dimensional speckle-tracking for noninvasive evaluation in patients with erectile dysfunction.

Methods:

This was a prospective observational study carried out from June 2020 to march 2022, including all patients with organic erectile dysfunction referred to our cardiology consultation from the department of urology. Epidemiological and clinical characteristics were investigated. The severity of ED was evaluated using the

International Index of Erectile Function (IIEF5). A complete physical examination was performed for all subjects. Myocardial deformation analysis by 2D-STE was performed for all patients. The study was conducted after the approval of the local ethics comity.

Results:

We included 109 patients with a mean age of 59 years \pm 7.9. The severity of erectile dysfunction was mild in 10.1%, moderate in 46.8% and severe in 42.2% of the cases. Analyses revealed that there was a significant correlation between hypertension, hyperlipidemia, diabetes mellitus, sedentary lifestyle and severe ED ($p=0.056$; $p=0.013$; $p=0.058$ and $p=0.075$, respectively). One third of the patients (33%) with severe ED had a history of coronary artery disease confirmed by angiography. Moreover, correlation analysis revealed a significant correlation of GLS-LV values with severe ED ($p=0.001$ and $p=0.054$ respectively).

Conclusion:

Myocardial deformation parameters by 2D-STE is noninvasive methods that may be used as an emerging prognostic marker to detect subclinical cardiovascular diseases.

Submission ID: 1644

LONG-TERM OUTCOMES IN CONGENITALLY CORRECTED TRANSPOSITION OF THE GREAT ARTERIES: LA RABTA HOSPITAL EXPERIENCE

KAOUTHAR HAKIM, ELLA LAHMAIER, RIHAB BEN OTHMEN, SABRINE SOUDANI, AMIRA TALHAOU, SYRINE BEN JEDDOU, HELA MSAAD, FATMA OUARDA

TUNISIA

Background:

Congenitally corrected transposition of great arteries (ccTGA) is a rare and complex congenital heart disease. It can occur in isolation or in combination with other structural cardiac anomalies. Decision making for management strategies of ccTGA depends on the age, type, severity of the associated lesions and local surgical experience.

Objective:

The aim of our study was to determine long-term outcome in operated and non-operated patients with ccTGA.

Methods:

Monocentric retrospective review of patients with a diagnosis of ccTGA in the cardiopediatric department of la Rabta hospital. Anamnestic, clinical data, electrical data and therapeutic strategies were characterized at the time of diagnosis and during follow-up.

Results:

Fifty-five patients were included. The mean age of our patients was 13 years, with extremes ranging from 7 days to 58 years. Sex ratio was 1.8. Twenty-three patients were operated. Palliative surgery was performed in 20 patients. Eight patients underwent surgical repair: five patients have physiologic repair and three have anatomic repair.

Median follow-up in our population was 10 years with extremes ranging from one week to 36 years. Six patients were lost to follow-up.

In non-operated group, moderate to severe systemic regurgitation was noted in 56% of patients. Two patients with mild tricuspid regurgitation carried pregnancy to term without major complications. Twelve percent of cases presented heart failure with dysfunction of the systemic ventricle; among them, one patient had cardiac transplantation. Complete heart bloc occurred in eight patients.

In operated patients, moderate to severe systemic regurgitation was found in 24% patients. Heart failure developed in 16% of cases. One patient with severe Systemic regurgitation carried pregnancy to term. Post partum period was affected by acute heart failure.

Early Post-operative heart bloc occurred in one patient. During follow-up only one patient presented heart bloc. A Re-intervention was necessary in five patients.

Conclusion:

Congenitally corrected transposition of great arteries is a complex heterogeneous heart disease, Hence, therapeutic approach should be individualized depending in associated anomalies and systemic ventricle function.

Submission ID: 1645

SEVERITY OF ERECTILE DYSFUNCTION AND CARDIOVASCULAR RISK: A PROSPECTIVE STUDY

CHENIK SARRA, NOEMEN AYMEN, JABLOUN TAHA YASSINE, HAGGAI ABDEDDAYEM, HAJLAOUI NADHEM, FEHRI WAFI

TUNISIA

Introduction:

Erectile dysfunction (ED) is now recognized in most cases to be of vascular cause, with endothelial dysfunction as the main pathophysiological mechanism. Studies nowadays are suggesting that ED is often a marker for an asymptomatic cardiovascular disease (CVD) and that the two conditions often coexist.

Objective:

The aim of this study was to evaluate the link between different cardiovascular risk scores and the severity of erectile dysfunction, and to identify the most related risk factors to this condition.

Methods:

This was a prospective observational study carried out from June 2020 to march 2022, including all patients with organic erectile dysfunction referred to our cardiology consultation from the department of urology. Epidemiological and clinical characteristics were investigated. The severity of ED was evaluated using the International Index of Erectile Function (IIEF5). The Cardiovascular risk was assessed through identifying the different risk factors and using the SCORE2 and GLOBORISK algorithms. The study was conducted after the approval of the local ethics comity.

Results:

We included 109 patients with a mean age of 59 years +/- 7.9. Cardiovascular risk factors were (%): Body mass index (BMI) greater than 25kg/m² (68.5), followed by smoking (56.9), diabetes mellitus (53.2), arterial hypertension (52.3), and dyslipidemia (44%). The severity of erectile dysfunction was mild in 10.1%, moderate in 46.8% and severe in 42.2% of the cases. One third of the patients (33%) with severe ED had a history of coronary artery disease confirmed by angiography. When analyzing each cardiovascular risk factor apart, only dyslipidemia showed a statistical correlation with the severity of ED (OR=2.4, IC95% [1.13-5.47] ; p=0.02). However, using the SCORE2 and GLOBORISK algorithms to evaluate the risk of CVD, both showed a statistically significant relationship with the severity of ED (p=0.02 and 0.04 respectively).

Conclusion:

The assessment of the risk of cardiovascular disease in patients with erectile dysfunction should be based on valid dedicated scores rather than analyzing each cardiovascular risk factor apart.

Submission ID: 1647

EPIDEMIOLOGICAL AND ETIOLOGICAL PROFILE OF ATRIAL FIBRILLATION: A MOROCCAN STUDY

TAOUSSI OUMAIMA, DAOUDI YOUSSEF, ILHAM BENSALI, MOHAMED SABRY

MOROCCO

Background:

Atrial fibrillation is the most common supraventricular arrhythmia associated with significant morbi-mortality, which places a heavy burden on the health system. Unfortunately, not enough is known about the characteristics of African patients with AF. This study aimed to describe the epidemiological and etiological profile of atrial fibrillation in Moroccan patients.

Methods:

This is a retrospective descriptive study in which we assembled, described, analyzed, and compared to international studies, data of 300 Moroccan adults with atrial fibrillation, who received care within Cheikh Khalifa international university hospital's cardiology department between January 1st, 2019, and January 1st, 2022.

Results:

There was a male predominance with a sex ratio of 1.12. The mean age was 69 – 12,3 years with extremes ranging from 29 to 96 years. The majority (60,3%) were aged between 45 and 75 years. Common presentations were dyspnea (59.3%) palpitations (42.3%) and embolic complications (42%). Frequent risk factors were old age and hypertension and 90.78% of women, were postmenopausal. EKG abnormalities associated with AF were mostly left bundle branch block and repolarization disorders. Permanent AF was predominant. There were 53,4% of valvular causes, and the common lesion was mitral regurgitation. Ischemic cardiomyopathy was found in 22% of the patients and 4% of the patients developed AF on a healthy heart. Calculated CHA2DS2VASc was 3 in 87,7% of the cases. Left ventricular ejection fraction was preserved in 54% of the cases, and 80.3% had left atrium enlargement. 21% of our patients had coronary artery disease with narrowing mostly found in the left anterior descending coronary artery and the right coronary artery. Laboratory tests revealed that 42% of the patients had chronic kidney disease. Thyroid dysfunction was noted in 9% of patients. In terms of stroke prevention, oral anticoagulants were mostly prescribed with a rate of 46.3%. A good outcome was noted in 93.4% of cases, however, 3.7% were transferred to the cardiac resuscitation unit and 2% died during hospitalization.

Conclusion:

AF is correlated to several factors. Analyzing current findings provides a better understanding of our population making it easy to prevent, screen, diagnose and engage in suitable integrated management, then, therefore, improve health in individuals with this arrhythmia.

Submission ID: 1653

PREDICTIVE FACTORS FOR REOPERATION AND DEATH IN OPERATED ATRIOVENTRICULAR DUCTS

HAKIM KAOUTHAR, TALHAOU AMIRA, BEN OTHMEN RIHAB, BEN KHELIFA ROUEIDA, SOUDANI SABRINE, LAHMAIER ELLA, BEN JEDDOU SYRINE, SOULA MOHAMED AMINE, GHORBEL CHAIMA, MEKKI NOUHA, ZERAI KARAM, MSAAD HELA, OUARDA FATMA

TUNISIA

Introduction:

Atrioventricular canal (AVSD) is a frequent congenital heart disease. Its surgical correction is associated with a high rate of re-operation and death.

Methods and Objectives:

This is a retrospective longitudinal descriptive study of 200 patients AVSD in the pediatric cardiology department of La Rabta between 1995 and 2020. Our aim was to study the predictive factors for reoperation and death in operated AVSD.

Results:

The population consisted of 67 patients with complete form, 66 patients with intermediate form and 57 patients with partial form operated at a mean age of 19.32 ± 21.74 months, 43.4 ± 42.67 months, 71.55 ± 62.79 months respectively. The mean time to reintervention was 4 ± 7.1 years with extremes of 2 to 21 years. Severe leakage of the left atrioventricular valve was the main indication for reintervention at a distance from the initial surgery ($p=0.04$). Other indications for reintervention were mitral stenosis in one case and aortic subvalvular stenosis in one case.

Operative mortality was 24.5% in the complete form, 3.4% in the intermediate form and nil in the partial form. The only significant factor was the presence of a severe mitral leak (grade III or IV) postoperatively (Odds ratio=2.3; 95% CI [1-5.4]; $p=0.002$).

Summary:

Repair of the atrioventricular canal is associated with significant reoperation and mortality. The left atrioventricular valve is the main factor conditioning the prognosis of this heart disease.

Submission ID: 1666

DISCORDANCE BETWEEN HIGH GRADIENTS AND MODERATELY STENOTIC VALVE SURFACES: A RARE CAUSE NOT TO BE IGNORED!

BOUSNINA SABRINE, ANTIT SAOUSSSEN, BOUSSABAH ELHEM, CHELBI HAZEM, THAMEUR MOEZ, ZAKHAMA LILIA

TUNISIA

Introduction:

Beriberi is a rare disease caused by a deficiency in vitamin B1 (Thiamine) that can be observed in cases of malnutrition or chronic alcoholism. It can manifest in two distinct clinical forms: "dry beriberi" characterized by central or peripheral neurological impairment and "wet beriberi" characterized by cardiovascular manifestations, essentially high output heart failure also called "Shoshin beriberi" in its fulminant form.

Case description:

We reported a case of a 47-year-old hypertensive and diabetic patient, followed since 1997 at the outpatient clinic of the Internal Security Forces Hospital of La Marsa for rheumatic mitral stenosis in permanent atrial fibrillation. She underwent percutaneous mitral dilatation in 1998 with good immediate and medium-term results.

Since 2008, echocardiographic controls showed discordance between the mitral and aortic valve surfaces with moderate stenosis and too high transvalvular gradients (mitral surface= 1.7cm^2 , average transmitral gradient= 15mmHg , aortic surface= 1.4cm^2 , and gradient between the left ventricle and the aorta at 57mmHg) and pulmonary arterial hypertension at 70mmHg even though the patient was totally asymptomatic.

The etiological investigation concluded a vitamin B1 deficiency associated with a malabsorption syndrome: hypoalbuminemia, hypocalcemia, hypovitaminosis B12, and low serum iron. A gastrointestinal fibroscopy with biopsies did not reveal villous atrophy or other anatomicopathological arguments in favor of celiac disease.

Vitamin B1 supplementation was performed and an echocardiography examination is planned to determine the surgical indication.

Conclusion:

We presented a case of wet beriberi in a patient with malabsorption syndrome and unexplained high transvalvular gradients to draw attention to this forgotten but memorable disease whose treatment is safe, inexpensive, simple, and life-saving.

Submission ID: 1668

INSIGHTS ABOUT UNSUAL GERMS IN INFECTIVE ENDOCARDITIS

HAYAR SALAH EDDINE, MAAROUFI ANASS

MOROCCO

Background:

Progress in molecular microbiology and serologies have increased the proportion of IE associated with infrequent microorganisms therefore reduced the proportion of infective endocarditis (IE) with no microbiological documentation, however infective endocarditis due to these unusual agents still not well studied.

Methods:

We performed a descriptive study of a retrospective Infective endocarditis population admitted to a tertiary hospital between 2014 and 2022. Unusual-microorganism IE was defined as definite IE based on Dukes criterias, due to microorganisms other than streptococci, staphylococci, or enterococci.

Results:

Of 122 cases of documented IE, 10 (8.2%) were due to unusual microorganisms; the following species were involved: *Candida* ($n = 2$), *Bacillus* ($n = 2$), *Gemella morbillifom* ($n = 2$), *Klebsiella* ($n = 2$), *Aerococcus viridans* and *Nisseriae* ($n=1$). Cases were documented with blood cultures ($n = 7$, 70%), or serology ($n = 3$). As compared with IE due to staphylococci, streptococci, or enterococci, IE due to unusual microorganisms occurred more frequently in patients with prosthetic valve (10% vs 5%; $p<0.05$), without previously known heart disease (60 % vs 55%; $p<0.05$), longer duration of fever (mean, 38.1 days vs 32.9); However mortality rate was significantly higher in group with atypical agents IE (30% vs 15%; $p<0.05$).

Conclusions:

In this population-based study, 8.2% of IE cases were due to unusual microorganisms, with a predominance of anaerobes, yeast, and gram-negative bacilli. As compared with IE related to staphylococci, streptococci, or enterococci, IE cases related to unusual microorganisms were associated with prosthetic valves, longer duration of fever, and higher mortality rate.

Submission ID: 1676

FALSE PANCREATITIS REVEALING INFECTIVE ENDOCARDITIS

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MOROCCO

Background:

Infective endocarditis is inflammation caused by bacterial or fungal infection of the endocardial surface, leading to the formation of vegetations, commonly on heart valves; presentation includes fever, nonspecific constitutional symptoms, and frequently new-onset cardiac murmur disease. Course may be short and fulminant (acute endocarditis) or indolent (subacute endocarditis).

We report the case of a 32-year-old patient with dental antecedents who had a febrile syndrome with abdominal pain and bilious vomiting 2 weeks before admission, an abdominal CT scan was performed revealing a pancreatitis managed in the gastrology department. Upon discovery of a cardiac murmur on clinical examination, transthoracic echocardiography objectified an aspect of infectious endocarditis on the native aortic valve. Abdominal CT readback corrected the diagnosis, showing a splenic infarction by septic embolus. The patient underwent an aortic valve replacement with mechanical prosthesis with good evolution.

Endocarditis is a rare but serious disease, with hospital mortality of approximately 20%. Infective endocarditis History and presentation are variable; Diagnosis may be delayed owing to non specific symptoms. Any unexplained prolonged fever should raise suspicion of infective endocarditis

Submission ID: 1677

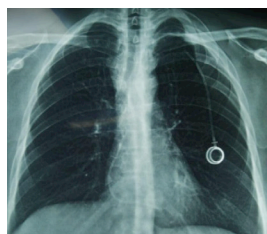
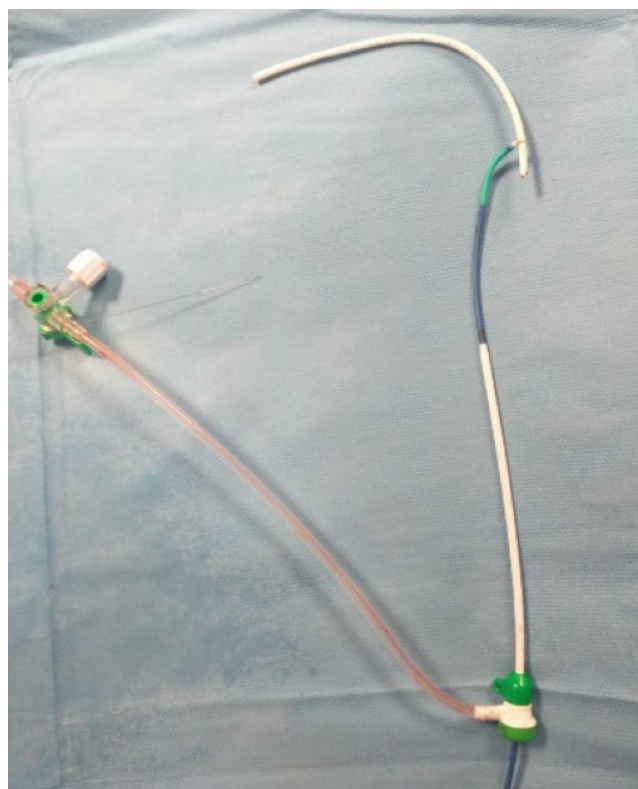
SUCCESSFUL RECOVERY OF CENTRAL VENOUS CATHETER FRAGMENT FROM THE RIGHT ATRIUM AND RIGHT VENTRICLE

ABDELJELIL FARHATI, ZEINEB OUMAYA, ZEYNAB JEBBERI, FATHIA MGHAIETH, AMINE BOUSSEMA, MANEL BEN HALIMA, MOHAMED SAMI MOURALI

TUNISIA

Background:

Central venous catheters are frequently implanted for chemotherapy and parenteral nutrition. When most commonly implanted in the subclavian vein (SCV), the venous catheter is subject to fracture because of the shear forces between the clavicle and the first rib. According to Cheng et al., broken catheters embolize frequently to superior vena cava (23.9%), right atrium-inferior vena cava (20.6%), right atrium-hepatic vein (11.9%), and right atrium- right ventricle (10.8%).

**Fig 1:** X Ray Chest showing severed chemoport.**Fig 2:** X Chemoport catheter lodged partly in RA and partly in RV.**Fig 3:** Attempt to snare with One snare device.**Fig 4:** Attempt to catch and straighten catheter fragment with Pig-tail catheter.**Fig 5:** AV end of the catheter was being caught and straightened.**Fig 6:** IVC end of the catheter was seized by Snare.**Fig 7:** Extracted catheter fragment of Chemoport.**Case:**

A 53-year-old woman, with right breast cancer mastectomy, was receiving adjuvant chemotherapy through a ventral venous catheter placed in the left SCV. The radiologic control confirmed the absence of signs of mechanical compression of the catheter and the correct position of its distal tip. Its optimal functioning had not motivated further radiological imaging. Two years later, in agreement with the oncology team, it was decided to explant the catheter. However, the chest X-ray before removal showed the presence of the distal fragment of the ruptured catheter in the right atrium (RA) and the right ventricle (RV). The extraction of this fragment was performed in the cardiac interventional unit. The right femoral vein was punctured under local anesthesia and a 6 F sheath was inserted.

An effort was made with a snare to catch the right atrium end of the embolized catheter without success. After several attempts with snare, we took recourse to a pigtail catheter with which we could catch and straighten the RA end of the catheter into IVC, using a coronary guidewire wrapped through the pigtail around the fractured catheter and captured by a snare. This position was favorable for grasping the tip of the catheter using the snare device. It was then trapped using a loop snare. Then the whole assembly of the snare, captured catheter fragment, and 6 F sheath were pulled out in unison. The patient well tolerated the procedure without any complications.

Conclusion:

Thrombosis, embolism, arrhythmia, endocarditis, or sepsis were the fatal complications that may develop due to the fracture and migration of the port catheter. To prevent these complications, extraction of the fragment must be carried out. We report this case to make oncologists aware of this entity and the necessity of monitoring by chest radiography. Percutaneous endovascular retrieval of a dislodged catheter is both safe and effective.

Submission ID: 1678

PERCUTANEOUS TRANSCATHETER CLOSURE OF MITRAL PROSTHETIC PARAVALVULAR LEAKS: A CASE REPORT

ABDELJELIL FARHATI, FATHIA MGHAIETH, ZEINEB OUMAYA, ZEYNAB JEBBERI, AYMEN FTINI, WALID SELIMEN, MANEL BEN HALIMA, MOHAMED SAMI MOURALI

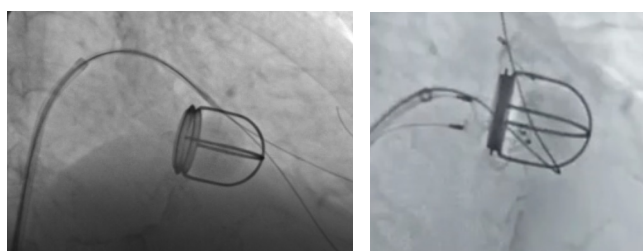
TUNISIA

Background:

Paravalvular leak (PVL) is a potentially life-threatening complication after valve replacement, leading to heart failure, hemolysis, and infective endocarditis. While the gold standard in the treatment of prosthetic valve PVL is surgery, it has a higher operative risk than the initial procedure, with an increased incidence of recurrent leakage. Percutaneous PVL closure is an emerging treatment approach, especially for patients at high surgical risk or who refuse surgery. It is a technically complex procedure and is not practiced in many centers.

Case report:

We report the case of a 71-year-old woman who was referred with refractory congestive heart failure and severe hemolysis caused by two severe PVL of a Starr-Edwards valve implanted in mitral position 33 years before. Owing to the perceived high surgical risk, percutaneous paravalvular leak closure was performed. We opted for a transseptal approach, under general anesthesia and with guidance by trans esophageal 3D echocardiography. The procedural complexity was heightened by the type of prosthesis (Starr-Edwards mitral prosthesis) with a potential risk of ball blockage. We used an "anchor wire" technique. Percutaneous closure with an Amplatzer TM APVL III 6 x 3mm and a VSD occluder 8 x 4mm was successfully performed. Post-procedure echocardiographic control confirmed the effective PVL closure, with a large anterior leak, scheduled for a second time. At the three-month follow-up, she presented a stable dyspnea NYHA II class and moderate hemolytic anemia related to the untreated leak. In the second procedure, we opted for an anterograde transseptal approach. Advancing the delivery sheath was not possible via this approach. We opted for an arteriovenous loop technique by snaring the wire and externalizing it through the femoral artery, allowing the passage of the catheter and then the devices implantation. She showed a relevant clinical improvement with a good quality of life at a one-month follow-up.



Loop.

Conclusion:

Mitral PVL transcatheter closure needs complex techniques of catheterization. It should only be performed by a structural and imaging cardiology team with a special experience in advanced structural procedures, supported by careful preprocedural planning.

Submission ID: 1682

EFFECTS OF PERCUTANEOUS BALLOON MITRAL VALVULOPLASTY ON LEFT VENTRICULAR, RIGHT VENTRICULAR AND LEFT ATRIAL DEFORMATION IN PATIENTS WITH ISOLATED AND SEVERE MITRAL STENOSIS: A STRAIN ANALYSIS

ZINEB FASSI FEHRI, ZINEB AGOUMY, SAMAH EL-MHADI, SAMAH EL-MHADI, HAMZA CHRAIBI, NADIA FELLAT, NESMA BENDAGHA, ADIL BENSOUDA, AIDA SOUFIANI, ROKYA FELLAT

TUNISIA

Background:

Previous studies have reported abnormal left ventricular (LV) contraction in patients with mitral stenosis (MS), but presently we do not have enough objective informations about right ventricular mechanics. The aim of our prospective single center study was to explore the serial changes in left and right ventricular (RV) mechanics in patients with severe MS undergoing balloon mitral valvuloplasty (BMV) to understand the reversibility of the abnormal contractile function.

Patients and methods:

The study included 30 patients with severe MS and 15 age-matched healthy individuals. 2D speckle-tracking-based LV and RV global longitudinal strain (GLS) measurements were performed for each participant. In patients with MS, the same measurements were repeated 72h hours after BMV.

Results:

The mean age of patients with MS was 41 ± 13 years (vs 37 ± 11 in the healthy control group) with a majority of women (92%). 57% were in NYHA class II and 19% in class III.

There were no significant differences between heart rate and LV ejection fraction in patients with MS compared to control group ($P=0.16$) and between LV ejection fraction before and after BMV.

The magnitude of LV and RV GLS was significantly reduced in patients with MS ($P=0.001$ for each parameter) with a normal LV ejection fraction ($61.5 \pm 4\%$). In the control group, the 2D LV and RV GLS were respectively $-21 \pm 1.14\%$ and $-24 \pm 4.2\%$.

After BMV, we note a significant improvement in GLS ($-13 \pm 2\%$ vs $-15 \pm 3\%$), and a significant decrease of left atrial volume ($143 \pm 56\text{ml}$ vs $130 \pm 50\text{ml}$).

There was no significant modification of RV strain 72 hours after BMV ($-15 \pm 4\%$ vs $-16 \pm 4\%$ with $P=0.3$).

On multivariate analysis, mitral area and LV end-diastolic (LVED) volume were independently correlated with baseline GLS. The mitral area was a risk factor $p=0.004$ and LV end-diastolic volume was a protector factor $P=0.007$, whereas increment in LVED volume was the only determinant of increased GLS after BMV ($P=0.049$).

Conclusions:

LV and RV deformations are reduced in patients with severe MS and is related to the severity of the stenosis. LV GLS appears to be useful in the detection of subclinical LV systolic dysfunction in patients with MS and preserved ejection fraction.

BMV results in rapid improvement of LV deformation which is correlated with serial improvement in LV diastolic loading, but not in the RV deformation. Further studies should be undertaken with longer follow-up to assess the improvement of RV function.

Submission ID: 1683

SURGICAL OUTCOMES OF PATIENTS WITH SEVERE AORTIC REGURGITATION WITHIN MARKEDLY REDUCED LEFT VENTRICULAR FUNCTION: WHY SHOULD WE OPERATE

ZINEB AGOUMY, SAMAH EL_MHADI, ZINEB FASSI FEHRI, HAMZA CHRAIBI, NESMA BENDAGHA, ADIL BENSOUDA, AIDA SOUFIANI, SAID MOUGHIL

MOROCCO

Background:

Surgical management of patients with severe aortic regurgitation (AR) in the setting of significantly impaired left ventricle (LV) function generally carries very high operative risk. The aim of this study is to assess the short and long-term outcomes of aortic valve replacement (AVR) in a selected young Moroccan population. Therefore, optimistic results should encourage surgical approach for those patients.

Patients and methods:

Between January 2008 and June 2022, 127 patients in the Cardiovascular Surgery Department B of Rabat underwent AVR for massive isolated AR. This is a retrospective study that included all patients (overall 42 of 127 patients) operated for major AR with an ejection fraction $\leq 35\%$.

Results:

The average age was 44 years old with a male prevalence. Only two deaths are noted in immediate postoperative. At the 15 years follow-up, the survival in the 38 patients controlled is 86.8%. Clinical improvement was present in the majority of patients. The ventricular diameters have significantly decreased and the EF has increased by an average of 16%.

Conclusions:

In this case series, the patients benefited largely from AVR, as it has significantly improved their functional state as well as the LVEF in a majority of patients. The global operative mortality was acceptable (4.7%), due to the preponderance of young patients with rheumatic valve disease. The long-term survival (86.8%) better than described in the West.

Key-words: Aortic regurgitation, left ventricular dysfunction, aortic valve replacement, prognosis, survival, long term.

Submission ID: 1684

SPECTRUM OF CARDIOVASCULAR INVOLVEMENT IN BEHÇET DISEASE: NOT ONLY THROMBOSIS!

EL-MHADI SAMAH, FASSI FEHRI ZINEB, AGOUMY ZINEB, EL HAJJAJ BELGHAI, FELLAT NADIA, BENDAGHA NESMA, BENSOUDA ADIL, TAZI MEZALEK ZOUBIDA, SOUFIANI AIDA, FELLAT ROKYA

MOROCCO

Background:

Behçet disease, also known as "Silk Road Disease", is a chronic auto inflammatory disorder triggered by infectious and/or environmental factors in genetically predisposed individuals. It is characterized by a triple-symptom complex of recurrent oral ulcers, genital ulcers and uveitis. Despite the high incidence of vascular damage in Behçet disease, cardiac involvement is still uncommon. Cardiac imaging techniques such as Echocardiography, Computed Tomography Scan and Magnetic Resonant Imaging play an important role for both diagnosis and assessment of complications.

Objective:

The aim of our work is to report rare manifestations of cardiovascular Behçet disease and the place of multimodality noninvasive imaging in diagnosis, detection of complications and follow-up.

Methods:

Throughout a series of six real cases, we will emphasize heterogeneous cardiovascular manifestations of Behçet disease. Beyond intracardiac thrombosis, we will report uncommon cases of coronary artery involvement, left ventricular pseudo-aneurysm and endo myocardial fibrosis.

Results:

Our six patients were all male between the second and fourth decades of life, in whom Behçet disease was previously confirmed according to the International Criteria for Behçet Disease. Cardiovascular manifestations were non-specific, dominated by dyspnea, chest pain and fever.

Even if intracardiac thrombosis is the most frequently reported lesion in literature, we herein report six various cardiovascular manifestations of Behçet disease, including: one case of classical right atrial thrombosis, two cases of right ventricular thrombosis associated to endo myocardial fibrosis, two cases of coronary artery involvement and one case of giant left ventricular pseudo-aneurysm. Transthoracic echocardiography and cardiac MRI are two useful and noninvasive diagnostic tools that allowed us to detect all cardiac lesions and ensure good follow-up.

Conclusion:

Cardiac involvement in Behçet disease is uncommon but life-threatening. A multidisciplinary approach can reduce morbidity mortality and rates. We suggest that echocardiography and other cardiac imaging techniques be routinely considered for early diagnosis and long-term follow-up.

Submission ID: 1690

RELATIONSHIP BETWEEN CARDIOVASCULAR RISK AND NOCTURNAL SYSTOLIC-DIASTOLIC ARTERIAL PRESSURE IN HYPERTENSIVES AT CHU-IBN ROCHD.

MAHOUNGOU MACKONIA NOEL MASCHELL, EL MOUSAID MERIEM, NASSOUR BRAHIM, HABOUB MERIEM, SALIM AROUS, BENOUNA GHALI, ABDENASSER DRIGHIL, LEILA AZZOUI, RACHIDA HABBAL

MOROCCO

Introduction:

Arterial hypertension is a real major public health problem in the world. Blood pressure (BP) has been shown to be associated with cardiovascular risk. However, clinical blood pressure measurement has several disadvantages, such as a limited number of blood pressure readings and the inability to assess blood pressure variability over a period of time. A nocturnal drop in blood pressure is a normal physiological regulation, called dipper-like blood pressure, and no drop in it is considered non-dipper; which was found to be significantly associated with adverse cardiovascular outcomes. The character of blood pressure dipper or not, their condition of variability in association with cardiovascular risk have not been sufficiently studied.

Methods:

We conducted a retrospective study on 35 patients with arterial hypertension for at least 2 years, in whom we performed an ambulatory blood pressure measurement and associated cardiovascular events, namely: coronary syndrome, stroke.

Results:

The average age of the patients was 64.5 ± 10 years, mainly men at 64% against 36% of women. The dipper trait was more important than the non-dipper at 56% versus 54%. The cardiovascular risk factors were objectified as follows: tobacco in 33% of cases, alcohol in 7% of cases, in 62% of cases the patients were diabetic, in 65% of cases they presented a metabolic syndrome and in 5 % of cases patients had coronary heredity. Arterial hypertension (HTA) associated with other risk factors was more frequent in the order

of 61% compared to isolated hypertension. The less than frequent non-dipper character was more associated with cardiovascular events in 75% of cases in our study.

Conclusion:

Hypertension associated with cardiovascular risks potentiates the occurrence of cardiovascular events even more when it has a non-dipper character.

Submission ID: 1691

ASSESSMENT OF LEFT DIASTOLIC FUNCTION IN PATIENTS WITH METABOLIC SYNDROME

HANANE CHOUKRANI, ANASS MAAROUFI, SARA ABOURADI, RACHIDA HABBAL

MOROCCO

Background:

There are several definitions of metabolic syndrome, but it is most commonly diagnosed when ≥ 3 of the following criteria are present: excess abdominal fat, high fasting blood glucose, hypertension, high triglycerides, low HDL cholesterol. The incidence of metabolic syndrome often parallels that of obesity and type 2 diabetes. It is very common; in the United States, $> 40\%$ of people > 50 years of age may have metabolic syndrome.

The aim of this study was to assess left diastolic function by echocardiographic parameters in patients with metabolic syndrome without known cardiovascular disease.

This study included 125 people who were divided into two groups with a similar mean age, a group with metabolic syndrome $n=60$ with an age: 63 ± 1.7 years and a group without metabolic syndrome $n=65$, age: 60 ± 2.3 years).

Left ventricular wall thickness, LV mass were calculated according to the TM mode. The ejection fraction was calculated in Simpson biplane. LV diastolic function was assessed by fast filling rate (E-rate), atrial systolic rate (A-rate), and E/A ratio by analyzing the transmitral flow. The Tei index, which reflects both diastolic and systolic LV function, was also calculated. In the metabolic syndrome group, LV wall thickness and LV mass were higher ($p < 0.001$), there was no significant difference in LVEF between the two groups. However, mitral flow parameters and Tei were significantly different between the metabolic syndrome (0.64 ± 0.12 and 0.39 ± 0.06 , respectively) and non-metabolic syndrome groups (0.9 ± 0.23 and 0.28 ± 0.07) ($p < 0.001$), independent of the presence of LV hypertrophy.

These results indicate that the metabolic syndrome is related to the presence of diastolic cardiac dysfunction independently of LV hypertrophy and systolic dysfunction.

Submission ID: 1694

PULSE PRESSURE IS A PREDICTIVE TOOL OF CARDIOVASCULAR EVENTS IN TUNISIAN HYPERTENSIVE PATIENTS

SAOUSSEN ANTIT, BADREDDINE BEN KAAB, FEKIH RIDHA, AMINE BOUFARES, CYRINE ANTIT, LHEM BOUSSABAH, MOEZ THAMEUR, LILIA ZAKHAMA

TUNISIA

Introduction:

Pulse pressure (PP) reflects the level of arterial stiffness in great vessels. We aimed to confirm that pulse pressure predicted the onset of cardiovascular events.

Methods:

This is a prospective descriptive study that included 240 hypertensive patients, treated in the outpatient clinic of the Internal Security Forces Hospital in La Marsa, having consulted between 2015 and 2016 and followed for five years.

Results:

The mean age was 57.4 ± 9.5 years, with a sex ratio of 1.3. Diabetes and hypertension were the most common cardiovascular risk factors. Diabetes and dyslipidemia were associated with an increase in pulse pressure but not significantly ($p = 0.07$ and 0.22 respectively).

A significant increase in pulse pressure was noted when moving from the younger group of patients to the older one ($p = 0.01$).

On univariate analysis, a significant correlation was observed between pulse pressure, acute coronary syndrome (ACS) ($p = 0.01$) and heart failure (HF) ($p = 0.04$). A cutoff value of 60 of PP was obtained to predict the onset of global cardiovascular events with a significant correlation ($p = 0.01$). On multivariate analysis, a significant correlation was observed between pulse PP, ACS ($p = 0.01$), HF ($p < 0.01$), stroke ($p < 0.01$) and global cardiovascular events ($p = 0.02$).

Conclusion:

The increase of PP, as measured by ambulatory blood pressure measurements (ABPM), is a predictor of cardiovascular events in a Tunisian treated hypertensive population.

Submission ID: 1695

AMBULATORY BLOOD PRESSURE MEASUREMENT: PROFILE AND CORRELATION WITH CARDIOVASCULAR EVENTS IN TREATED HYPERTENSIVE PATIENTS

SAOUSSEN ANTIT, BADREDDINE BEN KAAB, RIDHA FEKIH, AMINE BOUFARES, CYRINE ANTIT, MOEZ THAMEUR, ELHEM BOUSSABAH, LILIA ZAKHAMA

TUNISIA

Background:

Cardiovascular risk is directly correlated to the circadian blood pressure profile. The aim of this work was to analyze the profile of Ambulatory blood pressure measurement (ABPM) in treated hypertensive patients as well as evaluate the incidence of cardiovascular events over the medium term, in order to study the ABPM parameters that can predict the occurrence of cardiovascular events.

Methods:

We conducted a prospective descriptive study of 240 hypertensive patients who were treated and who had had ABPM during their follow-up at our Cardiology Department, with consultations between 2015 and 2016.

Results:

The mean age of our population was 57.4 ± 9.54 years, with a sex ratio of 1.33. Diabetes was the most common risk factor associated with hypertension (42.1%), followed by obesity (39.2%). This is a high cardiovascular risk population with 61% of patients with 3 or more risk factors and 56.9% with high and very high risk according to the SCORE score. The MAPA analysis showed that the mean 24-hour SSP was 129.5 ± 14 mmHg and the mean 24-hour MAP was 74.7 ± 9.8 mmHg. Electrical HVG was found in 7.2% of patients. Microalbuminuria was documented in 31.5% of patients and proteinuria in 6.8% of patients. Forty-three cardiovascular events were identified during the 4-year follow-up of our patients with a mean time to onset of 14.5 ± 9 months. In univariate analysis, there was a significant difference between patients with and without a cardiovascular event in terms of age ($p = 0.026$), mean SBP both overall ($p = 0.011$), diurnal ($p = 0.042$) and nocturnal ($p = 0.005$), maximum DBP ($p = 0.035$) and PP ($p = 0.001$). In multivariate analysis, the independent factors associated with cardiovascular events were mean nocturnal SBP (OR=1.04; CI=1.01-1.07; $p = 0.001$) and maximum DBP (OR=0.96; CI=0.92-0.99; $p = 0.02$).

Conclusion:

ABPM is an interesting prognostic tool in hypertensive patients, allowing the prediction of long-term cardiovascular events.

Submission ID: 1697

INTRACARDIAC THROMBOSIS AND VASCULAR INVOLVEMENT IN BEHÇET'S DISEASE: TWO SIDES OF THE SAME COIN?

SARRA CHADLI, HAJAR Khibri, SAFAA FARI, NAIMA MOUATASSIM, WAFAA AMMOURI, MOUNA MAAMAR, MOHAMED ADNAOUI, ZOUBIDA TAZI MEZALEK

MOROCCO

Background:

Behçet's disease (BD) is a relapsing vasculitis that can affect vessels of all sizes and kinds. Intracardiac thrombosis (ICT) is a serious complication of BD, that often presents associated with vascular lesions.

Objectives:

Our study aims to describe the clinical profile, imaging features, therapeutic management, and outcomes of BD patients with ICT. And secondly, to shed some light on the relation between ICT and the vascular involvement of the disease.

Methods:

We retrospectively conducted a descriptive study including 446 Behçet patients admitted to our department between 2010 and 2022.

Results:

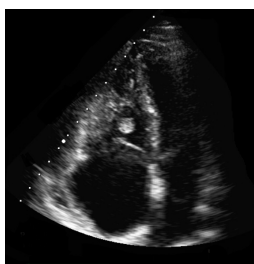
Twelve patients with ICT related to BD were enrolled. The sex ratio (M/F) was 9 and the mean age was 29 ± 6 years (20-41). ICT occurred as the revealing form of BD (50%), or after a median of 4 years [1; 8] since the disease onset (50%). Symptoms were: dyspnea (50%) chest pain (50%), dry cough (40%), and hemoptysis (30%). Concurrent BD flares were mainly mucocutaneous (80%). Inflammatory parameters were elevated with a median ESR of 48 mm/h and CRP of 52 mg/L. On echocardiography, ICT was located in the right cavities (100%), with an extension to the inferior vena cava in half of the cases. Multiple thrombi were visualized (33%). Associated cardiac lesions were: pericardial effusion (50%), tricuspid (50%) and mitral insufficiency (10%), endomyocardial fibrosis (10%), myocarditis (10%), and ischemic coronaropathy (8%). Pulmonary hypertension (75%) and right dilatation (58%) were common. On chest angioCT, pulmonary artery involvement was frequent (80%): thrombi (70%) and aneurysms (50%). Other sites of venous thrombosis included: superior vena cava (n=2), lower extremity (n=5), suprahepatic (n=2), internal jugular (n=1), pulmonary (n=1), cerebral (n=1) and superior mesenteric (n=1) veins. All patients were treated with colchicine, glucocorticoids, and immunosuppressants: cyclophosphamide (n=11), methotrexate with a TNF- α inhibitor (n=1). Six patients were under curative anticoagulation. The outcomes were classified as complete (n=7) or partial remission (n=3), and relapse (n=1). No death was recorded.

Conclusion:

ICT usually occurs in the first years of BD's onset, among young men with vascular lesions, especially of the pulmonary arteries and vena cava. We believe that this strong association is highly suggestive that, unlike common thrombotic diseases, ICT in BD is a direct consequence of the underlying vasculitis.



Pulmonary artery thrombosis and aneurysm in a BD patient with ICT.



TTE of a floating right intraventricular thrombus in a BD patient.

Submission ID: 1698

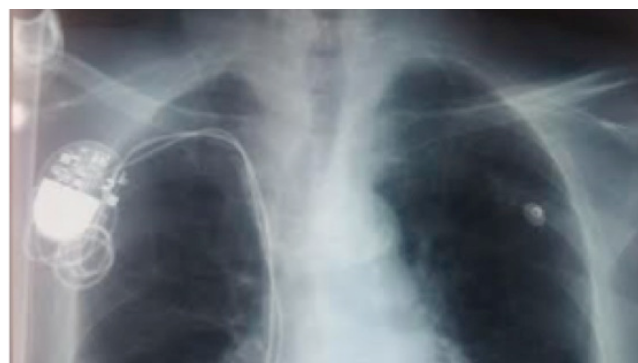
RUNAWAY PACEMAKER PHENOMENON: WHEN A PATIENT ALMOST PASSED AWAY

DAHIMENE NAWEL, SIK AREZKI, BAOUNI MOHAMED MEHDI, LOUALI INSSAF, BOURAHLA LAMIA, AIT MOKHTAR OMAR, BENKHEDDA SALIM

ALGERIA

Background:

Pacemaker implantation is a salvatory procedure in most situations. However, it still carries some risks as any device dysfunction can have dark consequences for the patient. Despite the technological progress in cardiology, runaway pacemaker phenomenon is still described and can cause critical bradycardia, arrhythmia and even death. The clinical context of this phenomenon is a pacemaker's battery depletion almost all the time and this is why a rigorous patient's follow-up is important. In this clinical case, we are going to describe a 96 years old man, who had a pacemaker implantation in 2007. He missed his last device follow-up because of the covid 19 pandemia and came to our emergency department for syncope. The 12 lead EKG showed a typical runaway pattern. Even if this is relatively an infrequent situation every cardiologist has to recognize the EKG pattern, know the different clinical situations possible and how to manage each of them.



Submission ID: 1704

AN EXCEPTIONAL OBSERVATION OF A TICAGRELOR INDUCED DELUSION

BELGHAIT ELHAJJAJ, SAMAH EL-MHADI, YASSINE ELGRINI, OUSSAMA AIT KAJJATE, DRISS BRITEL, ZOUHAIR LAKHEL, AATEF BENYASS

MOROCCO

Introduction:

The use of cardiovascular medications can have a variety of neuropsychiatric consequences. Case reports of medication-induced cognitive disturbances exist for many cardiovascular drugs. P2Y12 inhibitors have not been associated with significant neuropsychiatric symptoms.

Object:

This is the second reported case in literature of Ticagrelor induced delusion, in a patient admitted for a very late stent thrombosis.

Case report:

We report the case of a 64-year-old patient, who had a history of anterior STEMI, treated 15 months ago with percutaneous coronary intervention with a drug eluting stent and discharged home on an optimal long term pharmacotherapy including Clopidogrel for 12 months. He had no psychiatric history. He was admitted in our emergency department for an anterior STEMI management. An urgent coronarography showed a stent thrombosis. A percutaneous coronary intervention was conducted, and a Ticagrelor based therapy was introduced. Within the next few hours, the patient started showing signs of confusion and disturbed thoughts, and progressively became delusional. Brain CT scan, then a brain MRI were performed revealing no organic abnormality. Hydroelectrolytic, metabolic, toxicologic tests and cerebrospinal fluid analysis were normal. Ticagrelor induced neuropsychiatric adverse effect was then suspected since the drug was the only pharmacotherapeutic medication modification. Ticagrelor was switched to Clopidogrel. Psychiatric symptoms progressively faded away, and completely disappeared after three days. The patient was discharged home the fourth day.

Conclusion:

Though a given agent may not consistently cause neuropsychiatric symptoms in the general population, idiosyncratic reactions are possible. This type of reactions is diagnosed by exclusion. The symptoms must clear once the plasma concentrations of the given drug are below a clinically relevant concentration.

Submission ID: 1705

PROPHYLACTIC PACEMAKER IMPLANTATION IN STEINERT DISEASE: CASE REPORT

BENSSIED ASMAE, EL KARROUMI NASSIMA

MOROCCO

Introduction:

Steinert Disease, known as myotonic dystrophy type I (DM1) is a rare multisystemic genetic disorder with major cardiac involvement.

In DM1, cardiac dysrhythmia is the second leading cause of death after respiratory failure.

Pacing therapy is required to prevent sudden death in DM1.

Case report

A 55 year old man, recently diagnosed with Steinert disease, was referred to our rhythmology department to manage a dyspnea related to a first degree atrio-ventricular block.

The clinical examination found a bradycardia (50 bpm) with typical physical signs of Steinert disease.

The EKG showed a sinus regular rhythm (52cpm), a left axis deviation, a first degree AV block with a PR = 240ms, left anterior fascicular block, wide QRS =160ms, an intraventricular conduction delay

24h holter EKG revealed a mild ventricular hyperexcitability.

An electrophysiological study concluded a long HV interval (73ms).

The patient was implanted with prophylactic dual chamber pacemaker.

Discussion

Patient with DM1, a multisystemic neuromuscular disease, may experience conduction disturbances and tachyarrhythmias as major cardiac events.

If non-invasive testing (12 lead EKG completed with a 24H ambulatory EKG) indicate elevated risk for serious conduction block or arrhythmias, the electrophysiology study is considered in order to evaluate the distal conduction impairment (His-Purkinje disease) by determining the HV interval.

Following the 2021 ESC Guidelines on cardiac pacing, in DM1 patients, permanent pacing:

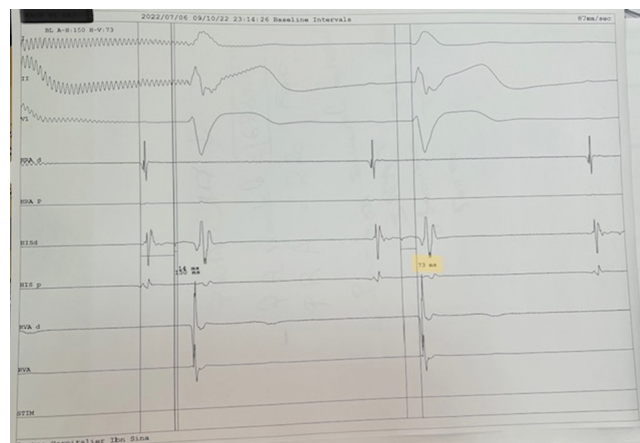
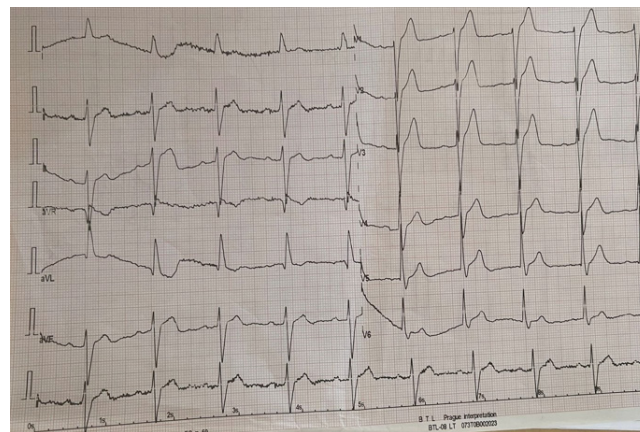
- May be considered if PR \geq 240 or QRS duration \geq 120ms
- Is indicated in a second or third AV block or HV interval \geq 70 ms on electrophysiological study regardless of symptoms.

Indeed, studies suggest that cardiac pacing improves survival of Steinert disease patients with severe ECG conduction abnormalities.

In our case, the patient presented a high risk of severe conduction abnormalities, as well as a long HV interval found through the electrophysiological study which justified the implantation of a prophylactic dual chamber pacemaker.

Conclusion

The prevention of sudden death in DM1 is central and relies on annual follow-up and prophylactic permanent pacing in patients with conduction defects on electrocardiogram and/or infrasisian blocks on electrophysiological study.



Submission ID: 1710

COMPLETE HEART BLOCK AND PREGNANCY : A MANAGEMENT DILEMMA

DHIMENE SAFAE, BERHIL TAHA, EL BOUSSADANI BADRE, RAISSOUNI ZAINAB

MOROCCO

Background/Introduction:

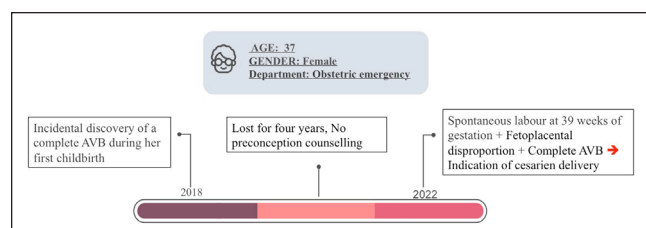
Congenital atrioventricular block (CAVB) is a rare but not exceptional pathology that is caused by many etiologies; the main CAVB's etiology is immunological. An atrioventricular block is a distribution of cardiac conduction with abnormal electrical impulse propagation due to a structural or functional abnormality. Symptom analysis should include the evaluation of systemic and chronic signs. 30% of CAVBs remain asymptomatic and are generally incidentally discovered during pregnancy.

Case:

This report relates to a case of CAVB in a 37 years old pregnant female, mother of one, who presented to the obstetric emergency of Tangier in spontaneous labour at 39 weeks of gestation. Her past medical and family histories were unremarkable, besides the same episode of AVB, during her first childbirth four years ago. The patient did not have preconception counselling. There was no associated syncope, lipothymia or chest pain. The clinical examination did not reveal any particular anomaly; the heart sounded well, no edema, and the peripheral pulses were present and symmetrical. The electrophysiological study showed a 3rd-degree atrioventricular block with a heart rate of 40 bpm. Transthoracic echocardiography did not show any cardiomyopathy or significant valvular disease. After a complete risk and benefit analysis, the approach was decided by a multidisciplinary team involving cardiologists, gynecologists, neonatologists and anesthesiologists; the indication of cesarian delivery was based on a fetoplacental disproportion. During the cesarian delivery, no changes in hemodynamics were observed; a constant HR of 40 bpm under injection of atropine every 5 min. The newborn had a normal Apgar score. The mother underwent ECG monitoring for the following four days in an intensive unit no modification was detected. In order to find the origin of this pathology, a range of autoimmune assessments has been done.

Conclusion:

This case highlights the severity of asymptomatic AVB; indeed, in the absence of unfavourable risk factors, it is not necessary to propose the installation of a pacemaker; a follow-up is, however, essential.



Submission ID: 1714

MYOCARDIAL INFARCTION AFTER COVID-19 VACCINATION: A CAUSAL LINK?

KAMAL MARZOUKI, MOHAMED AOUDAD, Wafa EL MIRE, AHMED YOUSOUF ADDOU, AMALE TAZI MEZALEK, AATIIF BENYASS

MOROCCO

Background:

Vaccination against Vaccine-19 is currently the only effective means of protection against mortality and severe forms of the infection. Minor side effects are quite frequent, serious and severe events related to vaccination remain rare. We report in our observation a case of myocardial infarction (MI) following vaccination with the Sinopharm vaccine.

Case presentation:

A 48-year-old man, a smoker with no other cardiovascular risk factors, presented with acute coronary syndrome 3 days after the second dose of Sinopharm vaccine. The admission ECG revealed an anterior ST elevation with right bundle branch block and ventricular extrasystoles. Transthoracic echography showed left ventricular inferior and inferoseptal wall akinesia, with an impaired ejection fraction of 45%. Coronary angiography demonstrated triple stenosis of the Left Anterior Descending (LAD) Artery, including a critical proximal lesion, with an occluded Right Coronary Artery (RCA) of chronic appearance. The proximal LAD was successfully dilated with active stent angioplasty, and the outcome was favorable.

Discussion:

Rare cases of post-vaccination MI have been reported in the literature, without establishing a direct cause-and-effect relationship. Several theories are possible: stress in a context of mistrust of the vaccine's side effects, inflammatory and sometimes allergic reaction, may be the cause of atherothrombotic complications of a pre-existing coronary artery disease. In the absence of evidence and in view of the rarity of cases, simple coincidence may also be considered.

Conclusion:

Acute coronary syndromes, reported after vaccination against covid-19, remain rare. Particular attention should be paid to identifying these events as well as proposing preventive measures, especially among coronary patients who are candidates for vaccination.

Submission ID: 1717

PROGNOSTIC FACTORS OF MORTALITY DURING INFECTIOUS ENDOCARDITIS IN THE UNIVERSITY HOSPITAL OF MARRAKECH

H NABAWI, M BOUTGOURINE, M EL JAMILI, S EL KARIMI, M EL HATTAOUI

MOROCCO

Background:

Infective endocarditis (IE) is an infection of the endocardium caused by bacteria, fungi, or germs that enter through the bloodstream. Despite great medical progress, IE remains a serious and lethal infection with a high frequency and a poor prognosis.

Objective:

Our aim is to determine the predictive factors of overall mortality during IE.

Methods:

Retrospective and descriptive study conducted in the cardiology department of the University Hospital of Marrakech January 2017 to July 2022. including 99 patients hospitalized for IE. Its diagnosis is according to the modified DUKE criteria.

Results:

99 patients with IE were collected during the study period. The mean age was 42 years. Complications were observed in 41 patients: cardiac in 61% of patients, embolic in 31% of patients, infectious in 12% of patients, renal in 29% of patients and neurological in 17% of patients. Sixty-eight of the patients (69.3%) underwent surgery: 30 as an emergency and 38 as a delayed operation. The overall mortality was 20%. The analytical study concluded that: the location of endocarditis on mitral prosthesis, persistent fever and duration of antibiotic therapy were independent risk factors for mortality.

Conclusion:

Infective endocarditis is a serious condition. Her prognoses remain poor. Thus, a multidisciplinary approach should be considered for optimal care and management of patients with the aim of improving their survival.

Submission ID: 1723

TREATMENT OF CORONARY BIFURCATION LESIONS WITH TWO-STENT TECHNIQUES: SHORT- AND LONG-TERM OUTCOME IN A NORTH AFRICAN REFERRAL HOSPITAL

AMAL BEN SALEM, SELIM BOUDICHE, ZEINEB OUMAYA, ZEINEB JABBARI, MANEL BEN HALIMA, SANA OUALI, FATHIA MGHATH, MOHAMED SAMI MOURALI

TUNISIA

Introduction:

Angioplasty of coronary bifurcation lesions using 2-stent techniques represent 5% of percutaneous coronary interventions and constitute a real challenge in interventional cardiology. Few data are available in Tunisia regarding this complex strategy.

Objective:

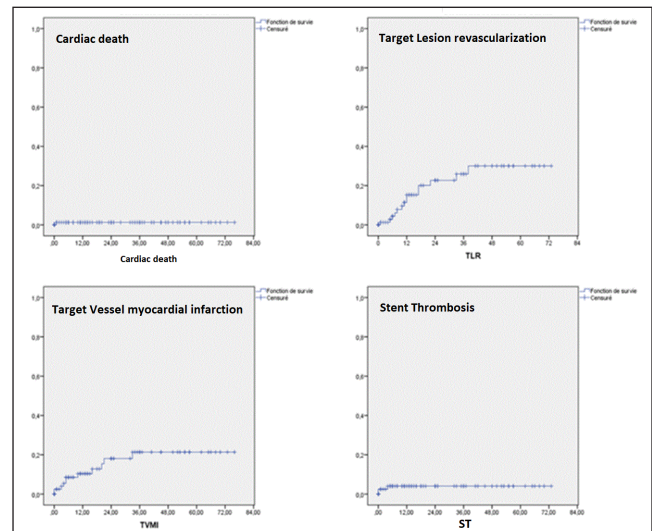
The aim of this study was to evaluate the immediate and long-term results of these patients.

Method:

This was a monocentric retrospective observational study including 80 patients who underwent bifurcation lesion angioplasty using two-stent technique between January 2014 to June 2020 after excluding the use of bare-metal stents and treatment of intra-stent restenosis. The primary endpoint was target lesion failure (TLF) and to identify possible TLF predictive factors. Secondary endpoint was MACE. A minimum follow-up of 12 months was required.

Results:

The mean age was 61.4 ± 11 years. The sex ratio was 3. Diabetes was present in 66,3% of patients. Lesions treated were related to distal left main artery bifurcation in 40% and were in relation with a true bifurcation lesion in 93.8% of cases. The indication for 2-stent



technique was elective in 85% of cases. Most used technique was T and protrusion in 61.2% of cases. Proximal optimization technique and final kissing balloon were performed in 82.5% and 86.3% of procedures respectively. A procedural success was achieved in all cases. After a median follow-up of 13.5 months [5–35], TLF rate was 18.8%, mainly related to secondary revascularizations (17.5%). Definite and probable stent thrombosis rate was 3.8%. TLF predictive factors were bifurcation angle $>90^\circ$ ($p=0.001$; OR=21.42 [3.3–60]), side branch reference vessel diameter ≤ 2.5 mm ($p=0.005$, OR=11.23 [2.07–50.7]), main branch lesion length ≥ 25 mm ($p=0.002$; OR=6.50 [1.9–21.19]), and main branch severe calcifications ($p=0.019$; OR=3.98 [1.28–12.63]).

Conclusion:

Two-stent techniques for treatment of coronary bifurcation lesions represent complex situations associated with increased rate of long-term adverse events despite initial procedural success in all patients. Careful patient selection and rigorous optimization technique could improve long-term outcomes.

Submission ID: 1725

DRUG-ELUTING VERSUS BARE-METAL STENTS: IS IT A MATTER OF VESSEL SIZE?

SKANDER BOUCHNAG, MOHAMED MEHDI BOUSSAADA, MOHAMED MAJED HASSINE, NIDHAL BOUCHEHDA, MEJDI BEN MESSAOUD, MARWEN MAHJOUB, FETHI BETBOUT, HABIB GAMRA

TUNISIA

Background:

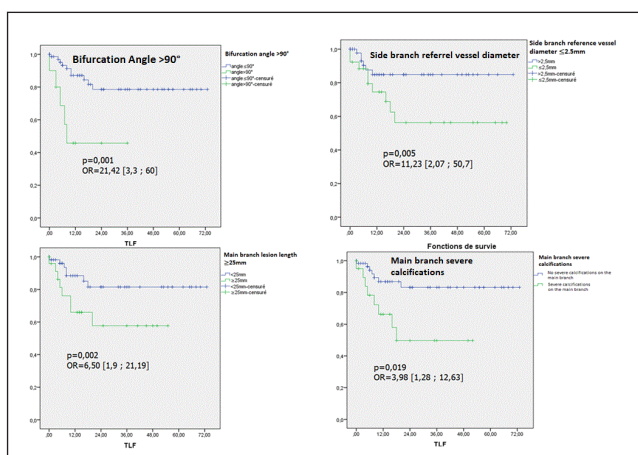
Although drug-eluting stents (DES) for percutaneous coronary intervention have dramatically reduced the incidence of in-stent restenosis.

Aim:

This study sought to evaluate the safety and effectiveness of drug-eluting stents (DES) compared to bare-metal stents (BMS) for patients with large coronary vessels ≥ 3.5 mm.

Methods:

This is a retrospective comparative study conducted in the cardiology A department of the university hospital Fattouma Bourguiba in Monastir. A total of 77 consecutive patients (80 lesions) who underwent, between October 2003 and March 2014, successful DES implantation were compared to 73 consecutive patients (84 lesions) who were treated with BMS in large coronary vessels ≥ 3.5 mm.



Results:

The average age in our population was 59.7 ± 11.3 years with a male majority without any significant difference between the two groups. The DES group contained significantly more patients with diabetes (67.5% versus 38.1%; $p < 0.0001$) and a history of coronary heart disease (40% versus 16.7%; $p = 0.001$). The BMS group had significantly more procedures in the aftermath of MI (18.8% versus 40.5%; $p = 0.002$) including more primary angioplasty (6.7% against 47.1%; $p = 0.006$). About two-thirds of the study patients had multivessel disease with equal distribution in both groups. The average duration of dual antiplatelet therapy was significantly prolonged in the DES group: 13.01 ± 8.31 months versus 7.59 ± 8.19 months; $p < 0.0001$. A mean follow-up of 27.87 ± 14.82 months was obtained. At 12 months, DES led to a significant reduction in the combined rate of major cardiac events by about 70% (OR = 0.32; 95% CI: 0.119 to 0.858; $p = 0.019$) without allowing a significant reduction in the rates of in-stent restenosis, in-stent thrombosis, target vessel revascularization or non-combined major cardiac events. During long-term follow-up, the benefit of DES in terms of MACE was maintained by allowing a 60% reduction in the combined rate of major cardiac events (OR = 0.406; 95% CI: 0.172 to 0.955; $p = 0.035$). Multivariate analysis identified the BMS as an independent predictor of major cardiac events and death. However, the stent type does not appear to influence the ISR and target lesion revascularization rates.

Conclusion:

The results of our study demonstrate a clear clinical benefit of drug-eluting stents during angioplasty of large coronary arteries in reducing major cardiac events and death.

Submission ID: 1726

VESSEL SIZE AND LONG-TERM OUTCOME AFTER PERCUTANEOUS CORONARY INTERVENTION WITH DRUG ELUTING STENT

SKANDER BOUCHNAG, MOHAMED MEHDI BOUSSAADA, MOHAMED MAJED HASSINE, NIDHAL BOUCHEHDA, MEJDI BEN MESSAOUD, MARWEN MAHJOUR, FETHI BETBOUT, HABIB GAMRA

TUNISIA

Introduction:

The role of coronary stenting with DES in the treatment of patients with small vessels is not well defined and still seems to raise controversy.

Aim:

The purpose of this study was to investigate the influence of vessel size on long-term clinical and angiographic outcomes after coronary DES placement.

Methods and Results:

The study comprised 421 patients with successful DES implantation for symptomatic coronary artery disease. Patients were subdivided into 2 groups according to vessel size, with respective ranges of > 2.75 mm and ≤ 2.75 mm. There was no significant difference between the two groups regarding the conventional cardiovascular risk factors (sex, hypertension, smoking, dyslipidemia) except for diabetes: indeed, in the small-vessel group, there are more diabetics (72, 5% vs 59.9%; $p=0.05$). Furthermore, there is no noticeable difference between the two groups regarding the reasons for hospitalization. The mean follow-up duration was 26.14 ± 17.7 months. In our population, the overall mortality rate was 5%. This rate was higher in the group with smaller vessels than in the group with larger vessels (8,1% vs 3,4%; $p=0.02$). Rehospitalization was similar between the 2 groups (26,9% and 21,1%, respectively; $p=0.106$). Angiographic restenosis rate was significantly higher in the small-vessel group (21,8% vs

11,8%; $p=0.04$). Similarly, the rates of stent thrombosis, TVR and TVF were also significantly higher in this group (9,7% vs 2,5%, $p=0.024$; 14,7 vs 6,6, $p=0.06$; 10,3 vs 5,4, $p=0.03$ respectively).

Conclusions:

Patients with small vessels present a higher risk for an adverse outcome after coronary drug-eluting stent placement because of a higher incidence of restenosis and stent thrombosis. However, the unusually high risk for restenosis is confined to those patients with small vessels who have concomitant risk factors such as diabetes.

Submission ID: 1728

RENAL ARTERY ANGIOPLASTY IN PATIENTS WITH KIDNEY FAILURE IN PATIENTS WITH SEVERE ATHEROSCLEROTIC RENAL ARTERY STENOSIS AND ISCHEMIA DOCUMENTED BY ULTRASOUND RESISTANCE INDEX: A RETROSPECTIVE STUDY OF 48 CONSECUTIVE PATIENTS

ZAKARIAE LARAICHI, MARC DARRAS, STÉPHANE GRECIANO

FRANCE

Background:

Severe arteriosclerotic stenosis of the renal artery with at least 60-70% narrowing of the lumen can lead to various diseases. Renal artery stenosis may be treated by revascularization using either percutaneous (balloon angioplasty with or without stenting) or less commonly open surgical procedures, both with excellent primary patency rates of over 90%.

Objective:

In this context, we evaluated a cohort of patients having been revascularized by angioplasty in order to trace their evolution and to evaluate the possible benefit of this procedure.

Methods:

This is a monocentric, retrospective, cross-sectional study conducted in the interventional cardiology department of the Colmar Hospital Center during the period between 2012 and 2020. The 48 patients therefore included in the analyses were all with chronic kidney disease classified according to the KDIGO criteria. They had undergone a Doppler ultrasound of the renal arteries finding not only a severe stenosis, but complicated by a decrease of the resistance index (RI) of more than 5% compared to the contralateral side.

Results:

56.2% of the included patients were male. The mean age of the population was 73.8 ± 12.2 years. Almost all of the study population had hypertension (97.9%) and the mean systolic and diastolic blood pressures of the patients preoperatively were $164.5/83.9 \pm 33.2/17.6$ mmHg for an average number of 3.6 ± 1.5 antihypertensive drugs. The success rate of the procedure was 100%, with implantation of one stent per artery. The mean diameter of the implanted stents was 6.40 ± 0.83 mm with a mean length of 16.22 ± 2.72 mm. Intra-hospital follow-up shows a constant improvement in blood pressure figures, allowing control of blood pressure in all patients, although the number of antihypertensive drugs cannot be reduced immediately in all patients. One month after angioplasty, there was an immediate decrease in serum creatinine levels to $127.44 \pm 33.15 \mu\text{mol/L}$ for a GFR of $46.52 \pm 16.41 \text{ mL/min/1.73m}^2$. The possible correlation between preoperative ultrasound RI and postoperative creatinine evolution was studied. It reveals that the improvement of postoperative creatinine was greater the higher the preoperative RI (p -value = 0.004).

Conclusion:

The results of this single-center retrospective study show a benefit of renal angioplasty in patients suffering from kidney failure secondary to atheromatous renal artery stenosis, both in terms of renal function and control of hypertension.

Submission ID: 1729

VENTRICULAR SEPTAL DEFECT POST-MYOCARDIAL INFARCTION: ABOUT 7 CASES

EMAD ALDIN MASSRI, NESMASSI MOUNIR, ICHRAQ FADAOU, OUKERAJ LATIFA, DOGHMI NAWAL, CHERTI MOHAMMED

MOROCCO

Introduction:

Ventricular septal rupture (VSR) is a rare complication of acute myocardial infarction, thanks to the improvement of pharmacology treatment, catheter-based and surgical reperfusion of patients in the past few decades. Nevertheless with the presence of risk factors of VSR, it can happen with a somber prognostic.

The objective of our work is to compare risk factors, timing, clinical presentation and the management of 7 cases of VSR, illustrating the prognosis of each case.

Methods:

Our prospective study consisted of the inclusion of 7 patients in a monocentric study carried out within the cardiology departments B of the Souissi Maternity Hospital in Rabat over a period of one year. The main inclusion criterion is the detection of VSR after Myocardial infarction (MI).

Results:

The study involved 5 men and 2 women, for a sex ratio of 2.5/1. The median age was 68 years. The most risk factor seen is diabetes and smoking (42.8%) followed by hypertension seen only in one patient, the average timing of detecting the VSR is 8 days varying between 2-18 days, with the clinical manifestation dominated by acute heart failure (3 patients), cardiogenic shock (3 patients) and only one patient was asymptomatic.

The detection of VSR was done using Transthoracic echocardiography in all patients, VSR was associated with LV aneurysm in 2 patients (28.5%).

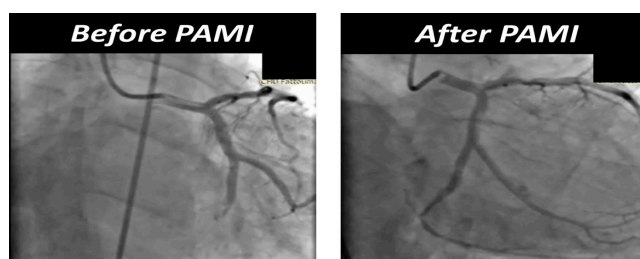
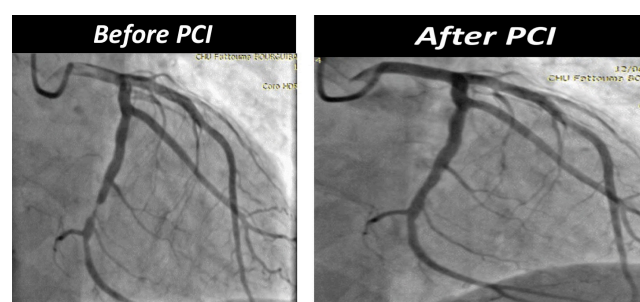
Coronarography was done only in 5 patients, 3 of them having multiple vessel lesions. Left anterior descending artery (LAD) lesion was seen in 5 patients followed by left marginal and right coronary arteries (2 patients each).

Only 3 of the 7 patients underwent surgical closure, with 3 of them died (2 before surgery and one after).

Conclusion:

VSR is a rare yet deadly complication of myocardial infarction, varying between asymptomatic to cardiogenic shock manifestation, which can be detected by simple cardiac auscultation. Its management requires a complex procedure involving an interprofessional team, including an interventional cardiologist and cardiothoracic surgeon.

an ad-hoc PCI of the circumflex with a drug-eluting stent. Initial laboratory tests at admission were normal. The patient was discharged after 5 days. Laboratory tests were not controlled during the hospitalization. The discharge treatment included aspirin, clopidogrel, bisoprolol, and atorvastatin. One week later, the patient has referred again to our department for both chest and right lower limb pain. The electrocardiogram showed an inferior STEMI and the physical exam of the right lower limb found ischemic signs with the absence of the femoral pulse. An urgent coronary angiogram showed total thrombosis of the circumflex stent. The patient underwent a successful PCI of the circumflex by a balloon. An urgent lower limb CT scan was performed immediately after the angioplasty, revealing total acute thrombosis of the right common femoral artery. The patient underwent an urgent successful thrombectomy with a Fogarty catheter. Immediate evolution was favorable with total regression of ischemic signs. Laboratory tests showed a marked fall in the platelet count (68,000/L) which was normal (364,000/L) in the previous hospitalization. A diagnosis of concomitant coronary stent and femoral artery thrombosis due to HIT was strongly suspected (4T score = 8). Our therapeutic strategy was immediate discontinuation of low molecular weight heparin, aspirin, and clopidogrel with strict daily control of platelet count. During this period, no alternative anticoagulation was initiated because of the unavailability of direct thrombin inhibitors in our center. Anticoagulation with a vitamin K antagonist (acenocoumarol 4 mg once a day) and dual antiplatelet therapy with aspirin and clopidogrel was initiated at day 3 once platelet count had recovered. The in-hospital outcome was favorable and the patient has discharged on acenocoumarol, aspirin, and clopidogrel. The 3-month follow-up, with controlled blood tests and lower limb contrast-enhanced computed tomography showing total reperfusion of the right femoral artery, was unremarkable.



Submission ID: 1731

CONCOMITANT CORONARY STENT AND FEMORAL ARTERY THROMBOSIS IN THE SETTING OF HEPARIN-INDUCED THROMBOCYTOPENIA

SKANDER BOUCHNAG, MEJDI BEN MESSAOUD, YASSINE KALLELA, NIDHAL BOUCHEHDA, MOHAMED MEHDI BOUSSAADA, MOHAMED MAJED HASSINE, MARWEN MAHJOUR, FETHI BETBOUT, HABIB GAMRA

TUNISIA

Introduction:

Heparin is a commonly used anticoagulant for hospitalized patients, but its use can lead to devastating complications, such as heparin-induced thrombocytopenia (HIT).

We report the case of a 66-year-old male patient, with a history of smoking, who was admitted to our department for a spontaneously resolved inferior STEMI. The coronary angiogram showed a thrombotic lesion of the distal circumflex. The patient underwent

Submission ID: 1736

CARDIAC AMYLOIDOSIS : A RACE AGAINST TIME

SARRA CHADLI, ZINEB FASSI FEHRI, SAMI BELKHETTAB, NAIMA MOUATASSIM, HAJAR KHBRI, WAFAA AMMOURI, MOUNA MAAMAR, HICHAM HARMOUCHE, MOHAMMED ADNAOUI, AIDA SOUFIANI, ZOUBIDA TAZI MEZALEK

MOROCCO

Background:

Amyloidosis is characterized by the extracellular deposition of misfolded proteins in various tissues and organs. Cardiac involvement is common and has a grim prognosis.

Objective:

Our study aims to describe the profile, diagnostic workup, therapeutic management, and outcome of patients with cardiac amyloidosis (CA).

Methods:

We carried out a retrospective, monocentric and descriptive study between 2015 and 2022, including all patients admitted to our department with documented systemic amyloidosis and confirmed cardiac involvement.

Results:

31 patients were enrolled. The sex ratio (M/F) was 0.93 and the mean age was 62 ± 15 years (26–86). Past history included:

Associated systemic involvements in patients with CA :

Systemic involvements	Type	%
Renal	Nephrotic syndrome	35%
	Acute renal failure	12%
Neurological	Peripheral neuropathy	16%
	Dysautonomic syndrome	3%
Mucocutaneous	Macroglossia	12%
	Periorbital ecchymosis	9%
	Purpura	3%
	Papulopustula	3%
	Lichen	3%
Others	Pat shoulder sign	6%
	Exophthalmia	3%
	Conjunctival tumefaction	3%
	Enlarged spleen and liver	3%

Associated systemic involvements in patients with CA.

Etiological investigations of patients with AL-CA :

Monoclonal Ig type	G (87.5%) ; A (12.5%)
Quantification	8.4 g/l [6 ; 56]
Subtype	Lambda (61%) Kappa (39%),
Quantification	Lambda: 333 mg/l [183 ; 644] Kappa : 23 mg/l [14 ; 76]
Ratio (L/k or K/l)	19 [2 ; 67],
dFLC	429 [183 ; 644]
Medullar plasma cells	9 % [7; 16]
Others	Bence jones proteinuria : 12% CRAB criteria : 9% Translocation t (4;14) : 3%

Etiological investigations of patients with AL CA.



Purpuric lesions in a patient with AL CA.



Periorbital ecchymosis in a patient with AL CA.

multiple myeloma (n=7), monoclonal gammopathy of undetermined significance (n=1), T lymphoma (n=1), and treated systemic amyloidosis (n=1). Patients presented after a mean of 12 ± 4 months since the onset, with peripheral edema (58%) and other signs of right (45%) and global heart failure (16%). Concomitant involvements were mostly renal (35%), neurological (16%), and mucocutaneous (12%). Electrocardiogram showed low-voltage (n=5), atrial fibrillation (n=3), atrioventricular (n=2) and right bundle block (n=2), junctional tachycardia (n=1), and left ventricular hypertrophy (n=1). Echocardiographic features were: altered longitudinal global strain (87%), left ventricular (84%), valvular (61%) and septal (68%) hypertrophy, bull's eye strain pattern (58%), pericardial effusion (35.5%), sparkling myocardium (32%), diastolic dysfunction (26%), dilated cavities (25%), pulmonary hypertension (19.4%), and aortic stenosis (3%). The most recurrent signs on cardiac MRI were: late enhancement (39%), left ventricular hypertrophy (33%), and abnormalities in myocardium nulling (25%). Median troponin was 0.40 ng/ml [0.07; 70.25] and BNP was 3918 pg/ml [1056; 12 563]. Positive cardiac fixation on bone scintigraphy confirmed ATTR-CA (n=3). Biopsies, serum, urine, and medullar investigations showed AL-CA lambda (n=8) and kappa (n=5). AA-CA was observed with sarcoidosis (n=1), and ankylosing spondylitis (n=1). Patients were treated with: chemotherapy (n=11), Tafamidis (n=2), and Infliximab (n=2). Outcomes were documented as complete (n=3) or partial remission (n=4), and death (n=8).

Conclusion:

CA is often misdiagnosed or discovered at an advanced stage. Thus, a better knowledge of the disease and screening of at-risk patients is of paramount importance for a timely diagnosis and better prognosis.

Submission ID: 1739

ALL IN ONE: THE 3 P PARADOXICAL EMBOLIC STROKE AND PULMONARY EMBOLISM IN A PATIENT WITH A PATENT FORAMEN OVAL

EL MIRE Wafa, EL HAJJI YASMINE, ADDOU AHMED YOUSSEF, AOUDAD MOHAMED, MARZOUKI KAMAL, BENOMAR ALI, BENYASS AATIF, TAZI MEZALEK AMALE

MOROCCO

Background:

Paradoxical embolism associated with patent foramen ovale (PFO) is a rare cause of ischemic stroke that should be investigated. Its association with a pulmonary embolism (PE) is a rare phenomenon.

Objective:

managing anticoagulation of pulmonary embolism during the acute phase of ischemic stroke and its value in preventing recurrence of stroke in the context of PFO.

Method:

This is the case of a 76-year-old female patient with hypertension, who presented progressive dyspnea, complicated by an acute right hemiparesis. The workup (cerebral MRI, Chest thoracic scann and Transthoracic Echo) was in favor of an ischemic stroke and proximal pulmonary embolism. The etiological investigation revealed extensive bilateral deep vein thrombosis of the lower limbs concomitant with a patent foramen ovale (PFO) confirmed by a contrast TTE.

Results:

Concerning his ischemic stroke, there was no indication for thrombolysis at admission. Regarding the low risk of hemorrhagic transformation, (NIHSS score inferior to 8), the patient was then treated with prophylactic heparin infusion for 72 hours followed by curative anticoagulation with NOAC targeting pulmonary embolism. The treatment was given during 6 months and relayed by a half dose for life.

Discussion:

The diagnosis of paradoxical embolism is very difficult and is guided by identifying an anatomical right-left shunt and a thrombus in the systemic venous circulation, while eliminating other possible etiologies. The therapeutic strategy taking into consideration the issue of curative anticoagulation of pulmonary embolism which is mandatory in emergency (or immediately administered), in the context of acute phase of an ischemic stroke that only rare cases have been reported in the literature and also discuss the role of interventional cardiology for PFO closure based on different scales ROPE and PASCAL.

Conclusion:

Further research is needed to establish the safety and efficacy of anticoagulant therapy for pulmonary embolism in the acute phase of ischemic stroke. Large randomized trials comparing medical and percutaneous approaches for patients with paradoxical embolic stroke are still underway.

Keywords: paradoxical embolism, ischemic stroke, pulmonary embolism, patent foramen oval.

Submission ID: 1740

ELECTROCARDIOGRAPHIC CRITERIA FOR LEFT VENTRICULAR HYPERTROPHY IN AORTIC VALVE STENOSIS: CORRELATION WITH ECHOCARDIOGRAPHIC PARAMETERS

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TUNISIA

Introduction:

The frequency of aortic valve stenosis (AS) is on the rise in the overall population due to its aging and the longer life expectancy. AS generates a chronic pressure overload that induces left ventricular hypertrophy (LVH). In order to identify it, the electrocardiogram (ECG) is widely used as a primary screening tool. Although the diversity of ECG parameters to identify LVH, their accuracy in patients with AS has not been well described yet and the clinical significance of the discrepancy between LVH by echocardiography and ECG in AS has not been extensively evaluated. **AIM:** To evaluate the prevalence of the ECG criteria for LVH in patients with severe AS and the relationship between ECG criteria for LVH and echocardiographic LV mass index findings.

Methods:

We performed a retrospective study including 87 patients diagnosed in the cardiology department of Charles Nicolle hospital-Tunisia with severe AS. The left ventricular mass index was evaluated by

	mean \pm SD	AUC	Sensitivity	Specificity	Prevalence	p	r
R aVL (mm)	6.81 \pm 4.00	0.645	38%	80%	9%	0.417	0.111
R DI (mm)	9.64 \pm 4.59	0.712	22%	93%	18%	0.554	0.045
Minnesota code 3.1 (mm)			20%	80%	20%	0.397	
Sokolow Index(mm)	30.68 \pm 8.65	0.691	36%	80%	32%	0.071	0.223
Sokolow Product (mm.ms)	2878.55 \pm 925.04	0.697	44%	86%	38%	0.004	0.196
Cornell Index (mm)	18.06 \pm 7.28	0.728	26%	93%	23%	0.047	0.251
Cornell Product (mm.ms)	1844.93 \pm 940.93	0.701	25%	100%	22%	0.106	0.213
Gubner-Ungerleider Index (mm)	15.58 \pm 10.23	0.699	16%	80%	16%	0.550	0.009
Gubner-Ungerleider Product (mm.ms)	1705.13 \pm 814.17	0.724	11%	100%	9%	0.205	0.047
Lewis Index(mm)	10.73 \pm 10.18	0.673	23%	80%	23%	0.530	-0.22
Pignoro-Lo Presti Index (mm)	20.37 \pm 10.79	0.648	29%	84%	26%	0.174	0.256
Framingham-adjusted Cornell voltage (mm)	9.78 \pm 7.49	0.667	10%	93%	9%	0.583	0.337
Romhilt Estes Score \geq 4 (points)	3.62 \pm 2.43	0.760	36%	80%	33%	0.185	0.132
Perugia Index			45%	80%	41%	0.046	
*Combined Index:			63%	80%	56%	0.02	-0.324

Table 1: Diagnostic accuracy of electrocardiographic left ventricular hypertrophy indexes

*Combined Index: Perugia Index and Pignoro-Lo Presti index and Sokolow Index and Cornell

transthoracic echocardiography (TTE). We assessed sensitivity, specificity, and area under the receiver-operating characteristics (ROC) curve for fourteen different ECG criteria for identification of LVH and compared to the results of (TTE).

Results:

The population was made of 52 men and 35 women with a mean age of 64,2 \pm 10,9 years. Echocardiographic LVH prevalence was 82 %. Electrocardiographic LVH ranged from 9% (R wave in AVL, Gubner-Ungerleider Product and Framingham-adjusted Cornell voltage) to 41 % (Perugia score). The ECG parameters had a low sensitivity, ranging from 10 % (Gubner-Ungerleider product) to 45 % (Perugia score). The specificity ranged from 80 % (Lewis Index, Romhilt Estes Score and Perugia Index) to 100% (Cornell and Gubner-Ungerleider Product). Only Sokolow Product, Cornell, and Perugia Index were weakly correlated to the LVMI (Table). Using a Combined Index from the five most accurate criteria allows sensitivity increase and ameliorates the correlation value with the LVMI ($r = -0.324$, $p = 0.02$).

Conclusion:

The majority of electrocardiographic criteria for LVH have a rather poor sensitivity and an acceptable specificity in patients with severe AS with LVH, which was confirmed using echocardiography. The values of the selected ECG criteria for LVH correlate weakly with the TTE indices of LVH. To improve the accuracy of ECG criteria, it is necessary to combine several ECG criteria and not often focused on a single classic electrocardiographic index.

Submission ID: 1742

TWO-STENT STRATEGIES FOR THE TREATMENT OF UNPROTECTED LEFT MAIN BIFURCATIONS LESIONS. A FIVE-YEAR MONOCENTRIC EXPERIENCE

BOUDICHE SELIM, YAAKOUBI WAEL, BEN SALEM AMEL, BOUSSEMA MOHAMED AMINE, SOULA MOHAMED AMINE, JEBBERI ZEYNAB, FARHATI ABDELJELIL, OUALI SANA, MGHAETH FATHIA, BEN HALIMA MANEL, MOURALI MOHAMED SAMI

TUNISIA

Background:

The treatment strategy for left main (LM) bifurcation is a controversial issue.

Methods:

This was a monocentric observational retrospective study of 34 patients with unprotected left main (LM) bifurcation stenosis treated with 2-stent strategies conducted over a period of five years from January 2017 to June 2022. We aimed to assess immediate and long-term outcomes of these patients at the era of new generation drug eluting stents.

Results:

A total of 34 consecutive patients were included. The mean age was 64.9 ± 10 years. Diabetes was present in 64.7% of patients. Six percent of patients had left ventricular ejection fraction $<40\%$. 97.1% of the patients had true bifurcation lesions. The majority of patients (92%) had low or intermediate SYNTAX Score I. The used techniques were T and protrusion (TAP) (64.7%), followed by DK-Crush (5.9%), Culotte (5.9%), T-stenting (5.9%) and other techniques (2.9%). Proximal optimization technique (POT) was performed in 100% of cases and final kissing balloon in 97.1% of cases. No hemodynamic assistance devices were used in our series. Immediate procedural success was of 100%. At a median follow-up of 13.5 months, target lesion failure (TLF) rate was 29.4% (10 patients) consisting of one cardiac death (1.3%) in relation with a sudden cardiac death considered as a sub-acute probable stent thrombosis and nine cases of in-stent restenosis requiring percutaneous reintervention in seven cases and surgical revascularization in two cases. The major adverse cardiac events (MACE) rate was 35.3% (11 patients) with two non-cardiac deaths in addition to previous described events.

Conclusions:

Despite initial procedural success in all patients, percutaneous coronary interventions in unprotected LM bifurcation lesions with 2-stents techniques were associated with high long-term rates of TLF and MACE in our population.

Submission ID: 1746

TRANSCATHETER AORTIC VALVE IMPLANTATION: INITIAL EXPERIENCE AND ONE-YEAR OUTCOMES FROM A SINGLE INSTITUTE IN TUNISIA

BOUDICHE SELIM, BOUSSEMA MOHAMED AMINE, JEBBERI ZEYNAB, YAAKOUBI WAEL, OUMAYA ZEINEB, BEN SALEM AMAL, FARHATI ABDELJELIL, OUALI SANA, MGHAETH FATHIA, BEN HALIMA MANEL, MOURALI MOHAMED SAMI

TUNISIA

Background:

Transcatheter aortic valve implantation (TAVI) is a novel method to treat selected high-risk patients with aortic stenosis. Implementation of this technique in developing countries is still very limited. This case series aims to report the results of a single center in Tunisia.

Methods:

Nine consecutive patients with symptomatic severe aortic valve stenosis were planned for transfemoral TAVI using standard procedures between July 2016 and June 2021. Patients were further followed by retrospective record review up to one year to assess efficacy and safety according to the Valve Academic Research Consortium 3 endpoints.

Results:

Patients had a mean age of 79 ± 5.6 years, two-thirds were women, and all had at least one major cardiovascular risk factor, except for a single case with stenotic degenerated prosthetic valve treated with valve-in-valve TAVI. Another case had a balloon aortic valvotomy for hemodynamic instability as a bridge to TAVI. The mean STS risk score was $7.80\% \pm 2.05$. Eight patients out of nine were treated with self-expanding prosthetic valves while the remaining patient had a balloon-expandable prosthesis. Immediate procedural success was 77.8%. Procedural failure was due to severe aortic regurgitation and hemodynamic instability upon predilatation with subsequent death in one case, and valve embolization in the second case. At 30 days, device success and early safety endpoints reached 66.7% and 55.6% respectively, while clinical safety at one year dropped to 33.3%. Main adverse outcomes on follow-up comprised death due to intracranial hemorrhage and Pacemaker-lead infection, severe anemia, congestive heart failure and arrhythmia.

Conclusion:

Our case series albeit small, provides insight to both caregivers and policymakers in Tunisia to further extend the scope of application of TAVI in patients with severe aortic stenosis at high surgical risk.

Submission ID: 1751

CARDIOVASCULAR MAGNETIC RESONANCE IN CARDIAC AMYLOIDOSIS

MERYEM IBEN CHEKROUN, OUSSAMA SIDATY, DOGHMI NAWAL, CHERTI MOHAMMED

MOROCCO

Background:

Cardiac amyloidosis can be diagnostically challenging. Cardiovascular magnetic resonance (CMR) can assess abnormal myocardial interstitium.

Methods:

It is a retrospective study, involving 40 patients, between January 2017 and December 2019, carried out in Cardiology department B.

We included in our study all patients who underwent cardiac MRI in the presence of clinical symptoms and echocardiography signs of cardiac amyloidosis.

Results:

The average age of the patients was 65 ± 12 with a male predominance (68%).

Global late gadolinium enhancement was found in 62,5% in amyloid patients. All these patients had greater LV mass.

Conclusion:

In cardiac amyloidosis, CMR shows a characteristic pattern of global subendocardial late enhancement coupled with abnormal myocardial and blood-pool gadolinium kinetics. Cardiac MRI may prove to have value in diagnosis and treatment follow-up.

Submission ID: 1752

NEUROLOGICAL EVENTS ARE STILL A SERIOUS COMPLICATION OF INFECTIVE ENDOCARDITIS

HOUDHAYFA HERMASSI, MERIEM DRISSA, NEYROUZ BENGAGI, FAKHER JAOUEDI, MOSLEM BEN ABDALLAH, SYRINE AOUJI, HICHEM MTIMET, HABIBA DRISSA

TUNISIA

Introduction:

Neurological complications constitute the second leading cause of death after hemodynamic complications in infective endocarditis (IE).

Purpose:

The aim of this work was to study the clinical, bacteriological, therapeutic and evolutionary aspects of these neurological complications.

Methods:

We conducted a retrospective study of 250 cases of IEs hospitalized between 1996 and 2021. We included cases of certain IE according to Dukes criteria. Neurological complications accounts for 88 patients (35%). Our population was divided into 2 groups: group 1 (IE with neurological complications) composed of 88 patients and group 2 (IE without neurological complications) including 162 patients. Characteristics of each groups were compared.

Results:

Neurological complications were: ischemic stroke in 65 patients, hemorrhagic stroke in 8 patients and cerebral abscess in 15 patients. There was no significant difference in age and sex between the 2 groups. Neurological complications occurred more frequently in prosthetic endocarditis ($p = 0.04$) than in native valve disease. The infectious syndrome was more observed in case of neurological complications (group 1: 97%, group 2 64.74%, $p = 0.05$). Staphylococcal endocarditis occur more in group 1 (40.78% versus 15.64%, $p = 0.01$). The presence of the vegetations (23.73%, versus 15%, $p = 0.5$), abscesses (10%, versus 8%, $p = 0.6$), severe regurgitation (23.73%, versus 13%, $p = 0.3$) were more common in neurological complications.

Prognosis was worse in case of neurological localizations with more occurrence of cardiac failure (40%, versus 12.55%, $p = 0.04$), more need to early surgery (50%, versus 41%, $p = 0.6$) and higher mortality (34.78%, versus 15.25%, $p = 0.001$)

Conclusion:

Neurological complications are as serious complication of IE and constitute a life-threatening condition. Their occurrence may change the management strategy.

Submission ID: 1753

USEFULNESS OF 64-SLICE MULTIDETECTOR COMPUTED TOMOGRAPHY TO DETECT CORONARY DISEASE IN PATIENTS PRIOR TO CARDIAC VALVE SURGERY

HOUDHAYFA HERMASSI, MERIEM DRISSA, NEYROUZ BENGAGI, FAKHER JAOUEDI, MOSLEM BEN ABDALLAH, SYRINE AOUJI, HICHEM MTIMET, HABIBA DRISSA

TUNISIA

Introduction:

Preoperative identification of significant coronary artery disease (CAD) in patients prior to valve surgery requires systematic invasive coronary angiography.

Purpose:

The purpose of this current study was to evaluate whether exclusion of CAD by multi-detector CT (MDCT) might potentially avoid systematic cardiac catheterization in patients prior to cardiac surgery.

Methods:

Thirty patients were included between June 2019 and 2021, they underwent 64-slice multi-detector computed tomography (MDCT) before invasive quantitative coronary. They were 19 females and 11 males, aged from 50 to 75 years, they were asymptomatic of chest pain but they have a cardiovascular risk factor. They were scheduled for surgical procedures: aortic valve replacement for severe aortic stenosis (15 patients), aortic root surgery and aortic valve replacement for aortic root aneurysm (5 patients) and mitral replacement for severe regurgitation (10 patients). They underwent 64-slice MDCT before invasive quantitative coronary. The MDCT showed a normal coronary artery in 16 patients, a non-significant stenosis in 7 patients, and significant stenosis in 7 patients; Coronary angiography confirmed the results of MDCT in 28 patients. Two patients and 8 segments were not correctly identified by MDCT because of artifact and especially due to severe calcifications which overestimate a moderate stenosis ($< 50\%$ by quantitative coronary angiography).

Conclusion:

64-slice MDCT is potentially useful for detecting CAD in patients prior to valve surgery. By selecting only those patients with positive MDCT findings to undergo invasive coronary angiography, it could avoid cardiac catheterization in a large number of patients without CAD.

Submission ID: 1754

ANGIOGRAPHIC FEATURES OF MYOCARDIAL INFARCTION IN YOUNG WOMEN

AZAIER FARES, JAOUED FAKHER, KHALIFA ROUAIDA, DRISSA MARIEM, MLIK AHMED, LAGHA ELYES, BEN ROMDHANE RIM, BACHRAOUI KAOUTHER, TLILI RAMI, BEN AMEUR YOUSSEF

TUNISIA

Introduction:

MI (myocardial infarction) in young women is rare. Though, there is limited data about MI in this category of patients. It has been observed that the angiographic profile of MI and its causes are quite different in young women as compared to older age.

Our study was carried out to study the angiographic profile and etiologies of myocardial infarction in young women.

Methods:

This was a retrospective study of women aged between 18 and 50 years hospitalized for MI at the cardiology department of Mongi Slim Hospital over a period of 2 years and 6 months (July 2019 – December 2021). All patients underwent clinical examination, echocardiography and coronarography.

Results:

A total of 44 female patients were enrolled in our study. The mean age of presentation was 44.2 years.

ST segment elevation myocardial infarction was reported in 15 cases (34%). Primary angioplasty was performed in 8 (53%) cases while thrombolysis was done in 7 patients (46%), out of which it was successful in 3 (20%) patients.

An obstructive coronary finding due to an atherosclerotic cause was found in 25 cases (57%). A single-vessel disease predominated among 25 cases (57%).

A coronary artery dissection was at the origin of MI in 11 (25%) patients. The left anterior descending artery was the most affected vessel by the coronary artery dissection in 7 (64%) cases.

MI with normal or recanalized coronaries was present in 8 (18%) cases, 6 (75%) of whom underwent myocardial MRI. Myocarditis and MI with recanalized coronaries were found in 3 patients each, followed by TakoTsubo (1 patient) and Prinzmetal (1 patient).

27 (61%) patients had percutaneous coronary angioplasty and the rest of patients received medical treatment only.

Conclusion:

In our study, plaque-related MI, coronary artery dissection and myocarditis were the main causes of MI in young women. Non-atherosclerotic causes of MI should be investigated in patients without obstructive coronary since non-diagnosis can result in higher morbidity.

Submission ID: 1756

CARDIAC ARRHYTHMIAS IN HEMODIALYSIS PATIENTS

MERIE M LAMHANI, M ELJAMILI, M ELHATTAOUI

MOROCCO

Background:

Cardiac arrhythmias are frequently observed in patients with end-stage renal disease on hemodialysis (ESRD). The most frequent cause of cardiac arrhythmias death is ventricular arrhythmia which usually precedes by premature ventricular contraction (PVC) and are associated with high morbidity and mortality. The purpose of our study is to determine if hemodialysis is responsible for causing these potentially fatal cardiac arrhythmias, or is it the progression of chronic kidney disease itself with its complications on the cardiovascular system that is responsible for it.

Methods:

We carried out a study in the hemodialysis units of Marrakech's Mohammed VI University Hospital, Morocco, over a six-month period in 2020, we consecutively recruited consenting adult patients on maintenance hemodialysis for at least three months. A 24-hour Holter ECG monitor was placed just before dialysis. After the examination of 24-hour Holter ECG, especially cardiac arrhythmias, with clinical characteristics and biochemical data was analyzed.

Results:

56 patients were retained. The average age was 49 ± 17.32 years, and women made up 54% of the workforce. The main comorbidity found was hypertension (24 patients, 43%). On Holter ECG ventricular extrasystoles (ESV) were present in 15.19% of cases. Supraventricular extrasystoles (ESSV) were found in 11.04% of patients with a significant correlation with electrolyte abnormalities generated by dialysis as a significant difference in serum potassium level change (5.66 VS 3.69 mEq/l; $p < 0.05$). Other electrocardiographic abnormalities were captured in per-hemodialysis (QTc interval lengthening, P wave duration shortening, PR interval lengthening).

Conclusion:

Through the results of our study of the arrhythmogenic profile of hemodialysis in ESRD, we underlined the "SAFETY" of hemodialysis, while the other electrocardiographic abnormalities that appeared during the dialysis session are the results of per-dialytic electrolyte disturbances, but without any generation of a serious cardiac arrhythmia, these detected abnormalities could allow nephrologists to modify dialysis prescription in response to minute-to-minute changes on dialysate.

Submission ID: 1759

FEMALE PATIENTS WITH MYOCARDIAL INFARCTION AND NON OBSTRUCTIVE CORONARY ARTERIES (MINOCA): CLINICAL CHARACTERISTICS, IN-HOSPITAL COMPLICATIONS AND LONG-TERM MORTALITY

AZAI EZ FARES, JAOUED FAKHER, KHALIFA ROUAIDA, DRISSA MARIEM, MLIK AHMED, LAGHA ELYES, BEN ROMDHANE RIM, BACHRAOUI KAOUTHER, TLILI RAMI, BEN AMEUR YOUSSEF

TUNISIA

Introduction:

The clinical manifestations of myocardial infarction (MI) with normal arteries on angiography is known as myocardial infarction with non-obstructive coronary arteries (MINOCA). As compared to MI due to obstructive coronary artery disease (MI-CAD), female gender is over-represented in MINOCA.

The aim of our study was to assess the clinical characteristics, in-hospital complications and long-term mortality of female patients with MINOCA compared to female patients with MI-CAD.

Methods:

This was a retrospective study of women hospitalized for MI at the cardiology department of Mongi Slim Hospital over a period of 2 years and 6 months (July 2019 - December 2021). All patients underwent clinical examination, echocardiography and coronarography.

Results:

We enrolled 191 patients in the study. The mean age was 61 years. An obstructive coronary due to atherosclerotic cause was found in 161 (84%) while MINOCA was found in 30 patients (16%).

The mean age of the MINOCA group was 50 years significantly younger than the MI-CAD group (64 years) ($p < 0.05$).

Among risk factors, a significant difference was found in the MINOCA group compared to the CAD group concerning the history of hypertension (15 (50%) vs 114 (71%), $p < 0.05$), diabetes mellitus (5 (17%) vs 113 (70%), $p < 0.01$) and dyslipidemia (3 (10%) vs 50 (31%), $p < 0.05$) while no significant difference was found in the history of smoking (8 (27%) vs 42 (26%)), obesity (7 (23%) vs 31

(19%)) and family CAD (4 (13%) vs 12 (7%)). 15 (50%) patients of the MINOCA group were postmenopausal on admission significantly less than the CAD group (140, 87%).

ST segment elevation myocardial infarction was found in 8 (27%) cases in the MINOCA group and in 60 (36%) cases in the CAD group ($p > 0.05$) with no significant difference.

In-hospital complications in the MI-CAD group have been significantly higher than in the MINOCA group (39 (24%) vs 3 (10%) $p < 0.05$). 6 cases of in-hospital mortality have been noted in the MI-CAD group while no death have been recorded in the MINOCA group.

Concerning long term mortality, 13 deaths have been recorded in the MI-CAD group while no deaths in the MINOCA group were recorded.

Conclusion:

Presentation with MINOCA was more common in younger patients and tended to have fewer cardiac risk factors than patients with MI-CAD. Patients with MINOCA had different outcomes compared to MI-CAD patients, including lower in-hospital complications and better long-term mortality.

Submission ID: 1761

MYOCARDIAL INFARCTION IN YOUNG WOMEN: CLINICAL PROFILE AND LONG TERM OUTCOMES

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TUNISIA

Introduction:

Myocardial infarction (MI) in young women is rare but its incidence is increasing and constitutes a challenging economic issue. Given that coronary artery disease in young women has epidemiological, clinical, and prognostic particularities, it would be important to identify them in order to be able to act in a more targeted manner in primary and secondary prevention and to improve therapeutic management.

Our study aimed to determine the clinical, electrical, prevalence of in-hospital complications and long-term mortality in young women with acute myocardial infarction.

Methods:

This was a retrospective study including women aged between 18 and 50 years hospitalized for MI at the cardiology department of Mongi Slim Hospital over a period of 2 years and 6 months (July 2019 - December 2021). All patients underwent clinical examination, echocardiography and coronarography.

Results:

We enrolled 44 patients in the study. The mean age was 44 years. The most frequent cardiovascular risk factors were hypertension (52%) followed by smoking (45%) and diabetes mellitus (43%). Dyslipidemia was noted in 23% (10 cases). Obesity was noted in 25% (11) patients. History of autoimmune disease was present in 11% (5). 12 patients (28%) were postmenopausal on admission. Typical angina was the main circumstance of MI in 40 (91%) patients associated with other signs in 10 (23%) cases. ST segment elevation myocardial infarction was reported in 15 (34%) cases. Inferior MI in 7 patients (16%) was the most common type, followed by anterior MI in 6 (14%) patients and non-ST segment elevation MI in 27 (61%).

25 patients (57%) had preserved left ventricular ejection fraction post MI. Concerning biological data, 9 patients (25%) had anemia and 6 (14%) had moderate chronic kidney disease. In-hospital complications occurred in 11% of cases (5 patients) and no in-hospital mortality was noted. On long-term mortality, only one death was recorded.

Conclusion:

The incidence of MI in young women is rising along with rising lifestyle risk factors and higher rates of diabetes, hypertension and smoking.

Submission ID: 1762

IMPACT OF PRIOR CORONARY ARTERY BYPASS GRAFTING IN PATIENTS WITH AN ACUTE CORONARY SYNDROME

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TUNISIA

Background:

Patients with prior Coronary Artery Bypass Grafting have often been under represented in acute coronary syndrome clinical trials. There are relatively few data on the characteristics and long-term prognosis of these patients, in particular in Tunisia.

The purpose of this study was to investigate the clinical particularities of bypass patients presenting for acute coronary syndrome and to compare the effect of coronary artery bypass grafting on the short and long-term prognosis of these patients.

Methods:

We performed a cohort analysis of patients hospitalized for an acute coronary syndrome in the Mongi Slim Hospital cardiology department between 2016 and 2020. The primary endpoints were in-hospital and one-year mortality.

Results:

A total of 506 (59 coronary artery bypass grafting and 447 non-coronary artery bypass grafting) patients were included in the analyses. Coronary artery bypass grafting patients were older and had a higher incidence of comorbidities. They were more likely to undergo percutaneous coronary intervention than to receive medical treatment only (73 vs 27%, $p<0.001$). The two groups had a comparable rate of rehospitalization at 3 and 6 months. In-hospital mortality was similar between groups (1.7 vs 4.5%, $p=0.507$). Furthermore, one-year mortality was higher in the coronary artery bypass grafting group (6.8% vs 5.3%, $p=0.002$).

Conclusion:

Among patients with acute coronary syndrome, a previous history of coronary artery bypass grafting was associated with a higher burden of comorbidities and a high-risk profile. Treatment decisions should be made on a case-by-case basis, but long-term mortality and adverse events were higher than in patients without coronary artery bypass grafting.

Submission ID: 1764

ANGIOGRAPHIC FACTORS ASSOCIATED WITH STENT THROMBOSIS

AZAIEZ FARES, MLIK AHMED, KHALIFA ROUAIDA, DRISSA MARIEM, BAHRI SAFA, BEN ROMDHANE RIM, TLILI RAMI, BEN AMEUR YOUSSEF

TUNISIA

Background:

Stent thrombosis (ST) is a serious complication with an increased mortality rate of 40% and major sequelae of MI in approximately 80% of survivors who remain at risk for frequent recurrence. Several factors have been associated with ST, including comorbidities, initial clinical presentations, diabetes, stent undersizing or under-expansion, complex and/or bifurcation lesions, and coronary dissections.

The objective of our study was to analyze stent thrombosis features and to identify the angiographic risk factors according to local expertise.

Methods:

This was a single-center retrospective study conducted at the cardiology department of Mongi Slim University Hospital La Marsa over a seven-year period from January 2013 to December 2019. We

enrolled 50 patients who had ST and an equivalent number of patients hospitalized in the same department and who did not develop a stent thrombosis during the first 3 years after the implantation of a stent.

Results:

Angiographic finding of arterial thrombus on the index lesion was more frequent in the case group (42% versus 32%) without statistical significance ($p=0.3$).

Paradoxically, we found more patients with coronary bifurcation lesions in the control population without statistical significance (0.19).

A strong correlation existed between the occurrence of ST and the presence of severe coronary calcifications with $p=0.004$ in univariate analysis.

The proportion of patients with ostial lesions was the same in both groups (12%).

We noted a significant association between coronary tortuosity and ST ($p=0.02$).

Conclusion:

The role of complex coronary lesions in the increased incidence of ST is widely demonstrated in our study.

Submission ID: 1765

PROGNOSIS OF STENT THROMBOSIS

AZAIEZ FARES, MLIK AHMED, KHALIFA ROUAIDA, DRISSA MARIEM, BAHRI SAFA, BEN ROMDHANE RIM, TLILI RAMI, BEN AMEUR YOUSSEF

TUNISIA

Background:

Stent thrombosis is a serious complication with an increased mortality rate of 40% and major sequelae of MI in approximately 80% of survivors who remain at risk for frequent recurrence. Several factors have been associated with ST, including comorbidities, initial clinical presentations, diabetes, stent undersizing or under-expansion, complex and/or bifurcation lesions, and coronary dissections.

The objective of our study is to analyze the stent thrombosis and the prognosis of patients affected by this complication.

Methods:

This was a single-center retrospective study conducted at the cardiology department of Mongi Slim University Hospital La Marsa over a seven-year period from January 2013 to December 2019. We recruited 48 patients who were victims of stent thrombosis. The follow-up in this study was done for only the first year after ST. The primary end point was the occurrence of MACE during the follow-up period.

Secondary end points were TS recurrence, cardiac mortality, target lesion revascularization (TLR), ACS occurrence, and rehospitalization for cardiovascular disease.

Results:

The average post-procedural hospital stay was 5 ± 2 days with extremes ranging from 2 to 14 days.

Of the 48 patients initially included, 8 patients (16.7%) were lost to follow-up.

The number of patients followed up who developed MACE within 1 year of TS was 13, which is equivalent to a 31% rate.

Two patients died during the same hospitalization. The first died from cardiogenic choc and the second from a poorly tolerated arrhythmia followed by cardiorespiratory arrest. Of note, both of these patients were hospitalized for STEMI, and were treated with primary PCI with final angiographic failure (TIMI flow <3).

Two patients died within 1 year of the TS episode by cardiogenic acute pulmonary edema (PAO).

The rate of cardiac mortality within 1 year was 9.52%.

In the year following the TS episode, 11 patients were rehospitalized, including 4 for stable angina, 4 for cardiac

decompensation, 2 for NSTEMI, and a single patient who presented with STEMI. There were 2 recurrences of ST classified as late ST during angiographic exploration of these patients. Seven of these patients required revascularization of the target lesion.

Conclusion:

To conclude this work, we note that ST has identified a subgroup of patients with a high mortality rate, suggesting that the management of these patients should be improved.

Submission ID: 1766

ANGIOGRAPHIC PROFILE OF PATIENTS OVER THE AGE OF 75 YEARS OLD PRESENTING WITH ACUTE CORONARY SYNDROME

TLILI RAMI, LAGHA ELYES, AZAIEZ FARES, KHALIFA ROUAIDA, BAHRI SAFA, BEN ROMDHANE RIM, BEN AMEUR YOUSSEF

TUNISIA

Introduction:

Cardiovascular diseases are the leading cause of death globally, taking an estimated 17.9 million lives each year. As a consequence of prolonged life expectancy, the number of older patients with symptomatic coronary artery disease is constantly increasing.

The aim of our study was to describe the angiographic profile of patients aged over 75 years old and treated for acute coronary syndrome (ACS).

Methods:

This was a descriptive retrospective cross-sectional study conducted over a period of three years, from January 1, 2018 to March 31, 2021 including 100 patients over the age of 75, hospitalized for an ACS in the cardiology department of Mongi Slim-La Marsa hospital and having been treated by coronary angioplasty.

Results:

All our patients had undergone coronary angiography with an average delay of 3 days. The radial approach was the preferred approach, used in 78% of cases. The left anterior descending artery (LADA) was the most affected artery in 90% of cases. The left main was responsible for the infarction in 7% of cases, the LADA in 59% of cases, followed by the right coronary artery in 22% of cases and the circumflex in 12% of cases. Calcified lesions characterized 35% of the total lesions. Bifurcation lesions represented 18% of the total lesions with a predominance of the Medina 1-0-1 class. The right coronary artery was dominant in 80% of cases. Significant stenosis of the left main was present in 16% of our patients with associated three-vessel involvement in 7% of cases.

Conclusion:

The angiographic profile of our population was characterized by the spread of coronary involvement and the complexity of the lesions.

Submission ID: 1767

MID AND LONG-TERM FOLLOW-UP OF PATIENTS AGED OVER 75 YEARS WITH ACUTE CORONARY SYNDROME

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TUNISIA

Introduction:

Acute coronary syndrome (ACS) in patients aged over 75 years has become a very frequent situation as a consequence of prolonged life expectancy, and poses specific problems, diagnostically, therapeutically and prognostically.

In our study, we aimed to assess the mid and long-term prognosis

of patients over 75 years old treated for ACS and who had undergone coronary angioplasty.

Methods:

This was a descriptive retrospective cross-sectional study conducted over a period of three years, from January 1, 2018 to March 31, 2021 including 100 patients over the age of 75, hospitalized for ACS in the cardiology department of Mongi Slim-La Marsa hospital and having been treated by coronary angioplasty.

Results:

The median follow-up for all patients was 20.7 months. The major adverse cardiac events rate was estimated at 39%.

7% of patients died of cardiovascular causes, myocardial re-infarction was noted in 24% of patients, 1 case of stroke (1%) was noted, 7% of patients had presented an acute heart failure and 28 patients had an angina recurrence. Coronary angiography did not reveal any change in coronary status in 4 patients and revascularization was performed in 24 patients. Rehospitalization for acute heart failure was observed in 7 patients. One patient had presented a hemorrhagic stroke 3 months post-infarction. A patient died within 1 year after the NSTEMI following a state of hemorrhagic shock refractory to treatment. Two patients had presented a complete atrioventricular block and had benefited from the implantation of a dual-chamber pacemaker.

Conclusion:

Ischemic heart disease is the leading cause of morbidity and mortality in this age group. The management of coronary pathology at these extreme ages remains difficult and the postoperative complications rate is higher than in the general population.

Submission ID: 1770

ST-SEGMENT-ELEVATION MYOCARDIAL INFARCTION IN COVID-19

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TUNISIA

Introduction:

The Severe Acute Respiratory Syndrome Coronavirus-2 have been associated with cardiovascular adverse events including acute myocardial infarction due to a prothrombotic and hypercoagulable status, and endothelial dysfunction.

Case report:

We report the case of a 62-year-old women, admitted to the hospital via the emergency room for acute chest pain and dyspnea. A nasopharyngeal swab was positive for COVID19 real-time reverse transcriptase-polymerase chain reaction 11 day ago. On admission, she was hypotensive with systolic blood pressure measuring 87 mmHg and tachycardic with 117 beats/min, oxygen saturation (SO₂) was 94%. An 18-lead ECG revealed an infero-postero-lateral ST-elevation myocardial infarction with right ventricular involvement and a second-degree-Mobitz Type 1 atrioventricular block. The coronary angiography from the right femoral artery showed acute thrombotic occlusion of the first diagonal branch with TIMI 0 flow and acute thrombotic occlusion of proximal right coronary artery with TIMI 0 flow. The most likely diagnosis was myocardial infarction secondary to a non-atherosclerotic coronary occlusion. The angioplasty was performed with dilatations with a semi compliant balloon, bailout implant of BMS, manual thrombus aspiration and intracoronary injection of tirofiban in the right coronary artery. The myocardial revascularization was ineffective. The patient developed significant severe hemodynamic instability and cardiac arrest for pulseless electric activity after 24 hours.

Conclusion:

The COVID-19 outbreak implies deep changes in the clinical profile and therapeutic management of STEMI patients who underwent PCI. At present, the natural history of coronary embolism is not well understood; however, the cardiac mortality rate are high. This suggests these patients require further study to identify the natural history of the condition and to optimize management to improve outcome.

Submission ID: 1573

PARAORTIC ECTOPIC THYROID: A CASE REPORT

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TUNISIA

Background:

Ectopic thyroid is defined as thyroid tissue not located anterolaterally between the second and the fourth tracheal cartilage. This anomalous localization is a rare lesion that results from abnormal embryologic development and/or migration of the gland. An intracardiac ectopic location is even rarer. We are presenting a case of a discovery of paraortic ectopic thyroid during coronary artery bypass graft surgery.

Case report:

A 63 year old female patient with a history of diabetes and dyslipidemia who got admitted in cardiovascular surgery department for coronary revascularization. During the coronary artery bypass graft surgery, we discover a 25mm superficial movable mass on the antero-lateral side of the ascending aorta. The mass was resected and sent to anatomopathology to clarify the diagnosis. Thus, the pathological examination of the mass revealed ectopic thyroid cells with no signs of malignancy. However, the patient was clinically and biochemically euthyroid. Ultrasound sonography of the cervical region showed no thyroid gland abnormalities. We completed the explorations with scintigraphy that showed a thyroid gland in place, decreased in size, and no residual ectopic thyroid tissue. With simple postoperative follow-up, the patient was sent home and had regular check-up revealing the absence of any clinical complication.

Conclusion:

The clinical occurrence of ectopic thyroid gland is an infrequently encountered condition, resulting from a developmental abnormality during the migration of the thyroid. Intracardiac or pericardial extension is a rarer case that could be discovered incidentally. This condition is often asymptomatic, whereas symptoms could be related to ectopic thyroid size, to its relationships with surrounding organs.



Ectopic thyroid

Submission ID: 1578

AXILLARY ARTERY ANEURYSM REVEALED BY ACUTE ISCHEMIA OF THE UPPER EXTREMITY

CHIHOUAI CHAIMA, SOUMER KHEDIJA, BOUSNINA MOUNA, JABER CHAKER, BENNOUR EMNA, JEMEL AMINE

TUNISIA

Background:

Upper extremity peripheral artery aneurysms are not common. True aneurysms of the axillary artery on the basis of atherosclerosis are rare and remain asymptomatic until a complication occurs. We are reporting a case of left axillary artery aneurysm revealed by acute ischemia of the upper extremity.

Case report:

A 92-year-old male patient presented to the emergency department with the complaint of an increasing pain and numbness of his left forearm, associated with cyanosis of the tips of fingers of the left hand evolving since the day before. He had no history of trauma or vascular intervention. But he was hypertensive and receiving oral anticoagulation therapy due to chronic atrial fibrillation. There was no axillary mass in the physical examination. However, humeral, ulnar and radial pulses were suppressed and the neurological examination of the upper extremity showed paresthesia of fingers. CT scan objectified a fusiform aneurysm, partially thrombosed and measuring 4 * 4 cm of the left axillary artery. The distal arteries were not contrasted. We immediately started intravenous heparin and urgent open surgical resection of the aneurysm was planned. Under general anesthesia and through an infraclavicular incision, we controlled the axillary artery upstream the aneurysm then the brachial artery after brachial approach. The aneurysmal mass was carefully dissected, separated from the surrounding tissues and resected after heparinization and clamping. Embolectomy of distal arteries using a Fogarty balloon catheter was also performed. Arterial continuity was established by interposing a graft bypass. Distal and proximal anastomosis were done in end to side fashion. Distal pulses were normal after the anastomosis. The pathological examination of the aneurysm sac revealed a true axillary artery aneurysm on an atherosclerosis basis. Postoperative course was uneventful and the patient was discharged on the third postoperative day without morbidity.

Conclusion:

Although aneurysms of the axillary artery are rare and mostly asymptomatic, it should be treated early to prevent many complications such as distal embolization. Thus, surgical or endovascular repair, if suitable anatomy, should be done without delay.

Submission ID: 1662

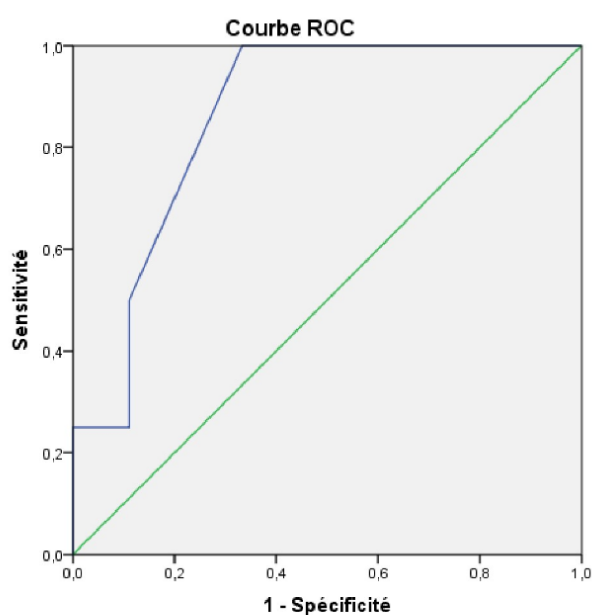
CONTRIBUTION OF THE SPECKLE TRACKING IN THE EVALUATION OF LEFT VENTRICULAR FILLING PRESSURE IN ACUTE CORONARY SYNDROMES

ASMA BRAHIM, FATHIA MGHAIETH, ZAINEB JABBARI, MANEL BEN HALIMA, SELIM BOUDICHE, ABDELJALIL FARHAT, SANA OUALI, MOHAMED SAMI MOURALI

TUNISIA

Introduction:

A non invasive estimation of diastolic function with echocardiography according to consensus methods, ie American society of Echocardiography (ASE)/European association of cardiovascular imaging (EACVI) algorithm 2018, is considered an integral essential part of the clinical evaluation of patients presenting with symptoms of acute coronary syndrome (ACS). Left atrial (LA) longitudinal was reported recently to have additive diagnostic value to assess left ventricle (LV) filling pressures (LVFP) in acute settings. Our study aim is to assess the accuracy of LA strain in evaluating



Les segments diagonaux sont générés par des liaisons.

The receiver operating characteristic

LVFP in patients with ACS, as a single parameter and its additive value to classical consensual parameters.

Methods:

Our study was led prospectively between April 20, 2022, and June 30, 2022. It included patients with ST elevation (STEMI) or non-ST elevation (NSTEMI) myocardial infarction. Echocardiographic measurements were performed in less than 24 hours from admission. Patients were divided into two groups according to LVFP; group 1 with non-elevated LVFP and group with elevated LVFP as defined by ASE/EACVI algorithm. LA-GS was assessed using images obtained in apical 4- and 2-chamber views. Left atrial reservoir strain (LARS) was calculated from LV-end diastole, and pump strain (LAPS) after the onset of the p-wave in the electrocardiogram.

Results:

Fifty patients were included in our study. The mean age was 59 ± 12 years. 72%(36) of our population was men. 34%(17) of the population had elevated LVFP (Group2) with a male predominance of 82% (14). They were active smokers in 64% (11), 52%(9) had hypertension, 70% (12) had diabetes mellitus, 47%(8) had dyslipidemia and 35% (6) were hospitalized for NSTEMI.

The mean LARS and LAPS were 26.9%, and 15.2% in group 1 vs 15.1%, and 7.1% respectively in group 2 with a difference statically significant $p=0.001$, and $p=0.002$ respectively.

The area under the curve was 0.910 (LARS) and 0.850 (LAPS).

The best cut-off for the LAPS was 11.5% with 100% of sensibility and 63% of specificity, for the LARS the best cut-off was 18% with 95% of sensibility and 66% of specificity.

Conclusion:

LA-GS is useful particularly when considered along with other diastolic parameters, in an acute setting of diastolic function and FP alteration while many other consensual parameters were not accurate in this context.

Submission ID: 1664

THE CORRELATION BETWEEN 2D GLOBAL LONGITUDINAL STRAIN ECHOCARDIOGRAPHY AND CARDIAC MAGNETIC RESONANCE TO DETERMINE LEFT VENTRICLE MYOCARDIAL SCAR BURDEN (LVMS) IN PATIENTS PRESENTING WITH ACUTE CORONARY SYNDROME (ACS)

ASMA BRAHIM, EMNA ALLOUCH, SANA SAID, MOHAMED SELMEN AISSA, HABIB BEN AHMED, HAKIM BEN JEMAA, FATEN BOUDICHE, WEJDENE OUECHTATI, LEILA BEZDAH

TUNISIA

Introduction:

The cartography of the LVMS presents an important diagnostic parameter to predict the prognostic of patients presenting with ACS. Nowadays, late gadolinium enhancement cardiac magnetic resonance (LGE-CMR) remains the cornerstone for the quantification of scars after myocardial infarction. However, echocardiography with Global longitudinal strain by 2-dimensional speckle-tracking (GLS) which is available is the most important first-line technic to evaluate the infarct.

Aim:

To test the ability of the GLS to quantify LVMS compared to CMR.

Methods:

We conduct a retrospective study from January 2020 to January 2022. patient attending our cardiology department with an ACS and who had echocardiography and CMR. We compared LVMS between, GLS and CMR findings. The LVMS was defined by LGE-CMR as a fraction of total left ventricle tissue. GLS was the average peak strain from 16 left ventricle segments.

Results:

Thirty-three patients were included in our study. The mean LVMS in CMR was $14\% \pm 8\%$ while GLS mean was $-10\% \pm 4\%$. There was a statically significant difference $p=0.010$.

The CMR of thirty Patients who had severe Left Anterior Descending artery (LAD) stenosis showed a mean scar burden of $42\% \pm 30\%$, while GLS showed $-4\% \pm 4\%$ with a difference statically significant $p=0.001$.

Besides no statically significant difference between CMR and 2D GLS in patients with right coronary (RCA) artery related infract ($13\% \pm 7\%$, $-9\% \pm 5\%$ respectively). Although the CMR scar mean in those who had circumflex artery (CX) related infract (17 patients) was $30\% \pm 15\%$ versus $-8\% \pm 4\%$ in GLS, with a statically significant difference. ($P=0.024$).

Conclusion:

GLS includes a reproducible and simple method for the assessment of scar burden in ACS in lesions in the territory of CX and RCA. Therefore, the CMR is the cornerstone for the quantification of scars after myocardial infarction.

