



# CVJ AFRICA

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CardioVascular Journal of Africa (official journal for PASCAR)

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## Twenty Second PanAfrican Course on Interventional Cardiology PAFCIC 2021

16-18 December 2021  
The Hybrid Edition

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Under The Patronage of His Excellence  
The Minister of Health of the Republic of Tunisia

**Twenty second PanAfrican Course on  
Interventional Cardiology PAFVIC 2021**

December 16-18, 2021

**The Hybrid Edition**



**PAFVIC Board:**

**Founding President:** Mohamed Ben Farhat

**Course Chairman:** Habib Gamra

**Course Directors:** Mohamed Ben Farhat  
Habib Gamra  
Horst Sievert

**Course Co-Directors:** Kais Battikh  
Fethi Betbout  
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Mohamed Jeilan  
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Habib Gamra, Tunisia  
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Fatma Ouarda, Tunisia  
Mohamed Sobhy, Egypt  
Adel Bouraghda, Algeria  
Sami Mourali, Tunisia  
David Kettles, South Africa  
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
- Fattouma Bourguiba University Hospital, Monastir, Tunisia
- La Rabta Hospital, Tunis Tunisia
- Sunninghill Hospital, Johannesburg, South Africa
- Alexandria University Hospital, Alexandria, Egypt

**Disclaimer**

The Abstracts for the PAFVIC 2021 was reviewed by the PASCAR Interventional Task Team and not by the Editor-in-Chief, Regional Editors or reviewers of the *Cardiovascular Journal of Africa*. Only accepted and presented abstracts are published.

## Thursday December 16th, 2021

### In Association with Africa Fellows Summit Learning from challenging cases

13:30 – 15:00

#### Learning From Challenging Cases Adult CV Interventions

Plenary Hall

**Chairs:** Leila Abid – Fehmi Remadi - Salem Abdessalem – Abdoul Kane– Abdelhadi Kadidi- Samir Ztot – Adel Bouraghda – Emmy Okello

**Facilitators:** Mohamed Jeilan - Yemi Jonhson

**Online Moderator:** Majed Hassine

- |   |  |
|---|--|
| <b>Case 1:</b> A challenging coronary dissection  | <i>Nashwa Abderrahim, Sudan</i>          |
| <b>Case 2:</b> A lifesaving POT in STEMI          | <i>El Ghali Mohamed Benouna, Morocco</i> |
| <b>Case 3:</b> A challenging and complex ACS case | <i>Roland Nguetta, Cote d'Ivoire</i>     |
| <b>Case 4:</b> Distal left main dissection        | <i>Nazim Megherbi, Algeria</i>           |
| <b>Case 5:</b> A nightmare Left main PCI          | <i>Slim Boudiche, Tunisia</i>            |
| <b>Case 6:</b> PCI for STEMI in later presenters  | <i>Adel Bouraghda, Algeria</i>           |

13:30 – 15:00

#### Learning From Challenging Cases Congenital H Disease Interventions

Kuriat Hall

**Chairs:** Shakeel Qureshi – Fatma Ouarda – Maiy El Sayed - Nadia Fellat – Faouzi Maatouk – Soraya Ben Youssef - Ihsen Zairi

**Facilitators:** Elyes Neffati – Dorra Abid

**Online Moderator:** Kaouthar Hakim

- |   |                                      |
|---|--------------------------------------|
| <b>Case 1:</b> Coronary artery fistula – simple?  | <i>Shakeel Qureshi, UK</i>           |
| <b>Case 2:</b> Critical pulmonar stenosis beyond the neonatal period                                      | <i>Christine Jowi, Kenya</i>         |
| <b>Case 3:</b> Challenging closure of tubular PDA   | <i>Sulaiman Lubega, Uganda</i>       |
| <b>Case 4:</b> Percutaneous closure of fenestrated Fontan in a patient with a complex cardiac abnormality | <i>Jeff Harrisberg, South Africa</i> |
| <b>Case 5:</b> Left ventricle – right atrium fistula closure  | <i>Elyes Neffati, Tunisia</i>        |

### In Association with Africa Fellows Summit PCI for heavily calcified lesions From A to Z

15:00 – 16:00

#### Live-in-a-box case presentation

**Chairs:** Jonathan Byrne - Habib Boussaadia - Habib Ben Ahmed - Jamel Langar - Omar Ait Mokhtar - Mohamed Hmem - Robert Mvungi - Ata Doost

**Facilitators:** Kais Battikh - Nadim Khedher

**Online Moderator:** Mehdi Slim

## Thursday December 16th, 2021

16:00 – 16:30

Visit of Exhibitions  
Moderated Poster Session 1

**Online Moderator:** Hichem Denguir – Nashwa Abderrahim – Selma Charfeddine – Sami Ouannes

### In Association with Africa Fellows Summit Bifurcation PCI – From A to Z

16:30 – 17:30

Live-in-a-box case presentation

Plenary Hall

**Chairs:** Goran Stankovic - Edoardo Camenzind - Faouzi Addad - Sami Mourali -  
Nazim Megherbi - Cherif Mboup

**Facilitators:** Awad Mohamed - Khaldoun Ben Hamda

**Online Moderator:** Najeh Ben Halima

### In Association with Africa Fellows Summit Retrograde approach for CTO PCI – From A to Z

17:30 – 18:30

**Live Transmission from:** Fattouma Bourguiba University Hospital - Monastir

**Operators:** Omer Goktekin - Mejd Ben Messaoud

**Chairs:** Khaldoun AlAswad - Ahmed El Guindy - Khalid Tammam - Marouane Boukhris -  
Riadh Kasri - Mohamed Jeilan - Fourat Zouari

**Facilitators:** Faouzi Drissi - Rania Hammami

**Online Moderator:** Walid Joma

18:30 – 19:00

Keynote Lecture

Plenary Hall

Current indications for revascularisation in chronic  
coronary syndromes: Implications of the ISCHEMIA Trial

*Bernard Gersh, USA*

## Official Opening Ceremony

19:00 – 19:30

**With the participation of His Excellence The Minister of Health of The Republic of Tunisia**

**Chairs:** Habib Gamra – Mohamed Ben Farhat – Lilia Zakhama – Elijah Ogola

## Friday December 17th, 2021

08:30 – 10:00

CSI Africa @ PAFVIC

Plenary Hall

**Live Transmission from:** La Rabta University Hospital - Tunis

*Stenting of Fontan conduit stenosis*

**Operators:** Semi Mourali – Abdeljelil Farhati – Kaouther Hakim

**Chairs:** Abdelfattah Abid – Fekria Abid - Leila Abid - Essia Boughzela - Massimo Chessa  
Maiy El Sayed - Horst Sievert – Endale Tefera

**Facilitators:** Syrine Abid - Elyes Neffati

**Online Moderator:** Khadija Mzoughi

Introduction – session objectives.

*Horst Sievert, Germany*

Closure of venovenous collaterals post Bidirectional  
Glenn Procedure

*Maiy El Sayed, Egypt*

Should collaterals be closed before and after Fontan operation

*Massimo Chessa, Italy*

Catheter intervention for post operative residual defects

*Ilyes Neffati, Tunisia*

Take Home Message

*Fatma Ouarda, Tunisia*

10:00 – 10:30

Visit of Exhibitions

**Moderated Poster Session 2**

**Moderators:** Tarak Ellouze – Marouane Mahjoub – Hedi Ben Slima – Mehdi Boussaada

10:30 – 11:00

**Keynote lecture Live From Japan**

Supported by Terumo

**Chairs:** Abdallah Mahdhaoui - Riadh Kasri – Faïçal Derbel – Mohamed Hmem – Habib Gamra

Insights from The Master DAPT Trial

*Shozo Ishihara, Japan*

11:00 – 12:00

**TAVI in Africa**

**Live from Fattouma Bourguiba University Hospital**

**Accurate Neo 2**

**Supported by Boston Scientific**

**Operator:** Habib Gamra – Fethi Bethout

**Chairs:** Mohamed Balgith – Horst Sievert - Raouf Denguir – Imad Al Haddad –  
Saleh Nawzad – Faouzi Addad – Adel Khayati

**Facilitators:** Dhaker Lahidheb – Morshed Marouane

**Online Moderator:** Helmi Kammoun

**Keynote Lecture**

Introducing TAVI in Africa: Challenges and Solutions

*Alain Cribier, France*

12:00 – 13:00

**TAVI in Africa**  
**Live transmission from Johannesburg**  
**Accurate Neo 2**  
**Supported by Boston Scientific**

**Operator:** Farrel Hellig**Chairs:** Mpiko Ntsekhe – Stephen Lee - Horst Sievert - Mohamed Sobhy – Kais Battikh – Sondos Kraiem – Fehmi Remadi**Facilitators:** Habib Gamra – Yemi Johnson**Online Moderator:** Hichem Denguir

Introduction – session objectives

Live transmission from Johannesburg

Take home message

*Mpiko Ntsekhe, South Africa**Operator: Farrel Hellig, South Africa**Yemi Johnson, Nigeria*

13:00 – 13:30

**Contemporary management of heart failure**  
 Supported by Servier

**Chairs:** Faouzi Addad – Abdoul Kane - Habib Gamra - Helmi Kammoun – Afef Ben Halima - Habib Ben Ahmed - Zahreddine SmiriContemporary management of HFrEF: don't miss  
Heart Rate reduction*Alexander Mebazaa, France*

13:30 – 15:00

**Innovation Session**  
 Techniques You Have Never Seen Before

**Plenary Hall****Chairs:** Jamel Langar – Stephen Lee – Khelil Hamza – Harun Otieno – Ashraf Ridha – Essia Boughezala - Samir Ahnia – Semi Milouchi**Facilitators:** Mohamed Jeilan – Ahmed Suliman**Online Moderator:** Fourat Zouari

New stenting technology for carotid angioplasty

Mechanical baroreceptor stimulation for heart failure treatment

Management of pulmonary hypertension post pulmonary vein isolation for AF

Low cost mechanical thrombectomy and lysis in deep venous thrombosis

Treatment of diffuse coronary disease: A new approach

Management of a complex aortic coarctation

*Max Amor, France**Horst Sievert, Germany**Farrel Hellig, South Africa**Khelil Hamza, Tunisia**Antonio Colombo, Italy**Jamel Langar, Tunisia*

14:00 – 16:00

**Allied Professionals Session****Kuriat Hall****Chairs:** Abdellateef Abdellateef – Fethi Betbout - Habib Ben Ahmed – Khelifa Rouis – Hassine Guedria – Lotfi Siala**Facilitators:** Mejdj Ben Messaoud – Nidhal Bouchahda**Online Moderator:** Mehdi Boussaada

Introduction and session objectives

Cardio-vascular nursing in Sudan: A vision to develop

ECG manifestations in cardio-vascular emergencies

Physiotherapy programs and diet in older patients with coronary artery disease and percutaneous intervention

Patients with negative stress test may experience a lower quality of life

Cath lab complications cases

Pharmacological approach for acute coronary syndrome management  
Take Home Message*Mejdj Ben Messaoud, Tunisia**Abdellateef Abdellateef, Sudan**Nidhal Bouchahda, Tunisia**Elena Marquez, Spain**Pallav Deka, USA**Wael Mohamed AIMutairi, Saudi Arabia**Amr Abdrabou, Egypt*  
*Nidhal Bouchahda, Tunisia*

## Friday December 17th, 2021

15:30 – 16:00

### New insights on the management of heart failure

Supported by Novartis

Plenary Hall

**Chairs:** Lilia Zakhama – Habiba Drissa – Fethia Mghaieth – Leila Bazdah –  
Gouider Jeridi – Rim Gribaa

New insights on the role of Saccubitril Valsartan in the  
management of heart failure

*Habib Gamra, Tunisia*

16:00 – 16:45

### TAVI in Africa

Live from Alexandria – Egypt - CVREP

#### TAVI – Step by step – Corevalve

Supported by Medtronic

**Live from:** University Hospital, Alexandria, Egypt

**Operators:** Mohamed Sobhy

Ahmed Elsayed

Ahmed Elkamrawy

**Chairs:** Omar Ait Mokhtar - Ziad Ghazzal – Adel Etriby – Hadi AbuHantach –  
Nicolas Moussallem – Abdulla Shehab- Amine Tarniz

**Facilitators:** Ahmed Suliman - Leila Hached

**Online moderator:** Hedi Ben Slima

16:45 – 17:15

### Visit of Exhibitions

#### Moderated Poster Session 3

**Moderators:** Nidhal Bouchahda, Hassen Ibn Hadj Amor, Meriem Drissa, Ayman Hraiech

17:15 – 18:15

### Live Transmission From Cedar Sinai Medical Center

Los Angeles, USA

**Operator:** Raj Makkar

**Chairs:** Augusto Pichard – Rachid Boujenah – Mohamed Jeilan –

Imad Al Haddad - Lilia Zakhama - Ramesh Daggubati – Firas Alani

**Facilitators:** Dhaker Lahidheb – Habib Gamra -

**Online Moderator:** Selma Charfeddine

**Live Transmission:**

*Operator: Raj Makkar*

Mitral Valve Implantation & Tricuspid Valve Implantation and repair

### Keynote Lecture

Challenges with isolated tricuspid valve surgery: Results  
of a new approach

*Imed Frikha, Tunisia*

18:00 – 18:30

### Update on antiplatelet therapy in coronary artery disease

Supported by Sanofi

**Chairs:** Samir Kammoun – Rachid Boujenah – Habib Haouala – Sami Milouchi – Youssef Ben Ameer

New insights on antiplatelet therapy in CAD patients

*Habib Gamra, Tunisia*

## Saturday December 18th, 2021

08:30 – 10:00

### Structural Interventions in Africa Balloon Mitral Valvuloplasty

Plenary Hall

**Live from:** Fattouma Bourguiba University Hospital

**Chairs:** Kanji Inoue- Mohamed Ben Farhat - Rachid Mechmeche – Naima ElHaitem Habiba Drissa – Osama Rifaie - Amine Jemel – Reuben Mutagaywa - Emmy Okello - Salim Bem Khedda

**Facilitators:** Sami Mourali – Habib Gamra

**Online Moderator:** Faten Triki

**Operators:** Fethi Betbout – Ahmed Suliman

### Keynote Lecture

Balloon Mitral Valvuloplasty: 35 years later

*Kanji Inoue, Japan*

10:00 – 10:30

### Visit of Exhibitions Moderated Poster Session 4

**Moderators:** Soufiene Kammoun, Emna Allouche, Mejdj Ben Messaoud, Ayman Ben Abdessalem

10:30 – 11:30

### Structural Interventions in Africa LAA Closure

Plenary Hall

**Live from:** Fattouma Bourguiba University Hospital

**Chairs:** Shakeel Quraichi – Skander Ben Omrane – Salim Ben Khedda – Zied BelHadj – Ikram Kammoun – Sondos Kraiem

**Facilitators:** Adel Bouraghda - Jamel Langar

**Online Moderator:** Nashwa Abderrahim

**Operators:** Alae Bourakkadi – Fethi Betbout – Mejdj Ben Messaoud

LAA Closure: Current and Future devices

*Horst Sievert, Germany*

10:30 – 12:00

### Interventional Rhythmology Catheter ablation for atrial fibrillation in Africa

Kuriat Hall

**Chairs:** Youssef Ben Ameer - Sonia Chabrak - Salem Kachboursa - Abdeddayem Haggui - Adama Kane - Mohamed Salim

**Facilitators:** Sana Ouali – Majed Hassine

**Online Moderator:** Slim Kacem

Cryoablation for atrial fibrillation, Tunisian experience

*Salma Krichene, Tunisia*

Cryoablation for atrial fibrillation, Moroccan experience

*Abdelhamid Moustaghfir, Morocco*

Current indications for atrial fibrillation catheter ablation: what's new?

*Jean Claude Deharo, France*

Cryoballoon or Radiofrequency Ablation for Atrial Fibrillation

*Razeen Gopal, South Africa*

Live in A Box: How to perform AF cryoablation

*Razeen Gopal, South Africa*



## Saturday December 18th, 2021

11:30 – 13:30

### Complications by The Masters Under The Auspices of GTCI – AGIC – PASCi - CardioAlex

Plenary Hall

**Chairs:** Eric Eeckhout – Antonio Colombo – Mohamed Sobhy – Abdelmajeed Al Zubaidi – Kamal Chitkara - Adel Bouraghda –

**Facilitators:** Awad Mohamed – Omar Ait Mokhtar

**Online Moderator:** Habib Gamra

Beware of live cases

*Eric Eeckhout, Switzerland*

When Transseptal sheath missed its way to the LA

*Farrel Hellig, South Africa*

A slam dunk PCI

*Kamal Chitkara, United Kingdom*

Unusual coronary perforation  
Antonio Colombo, Italy

A complex simultaneous left and right CTO PCI

*Max Amor, France*

A breaking experience

*Edoardo Camenzind, France*

Distal coronary perforation: How to manage?

*Mohamed Sobhy, Egypt*

A complicated percutaneous pulmonary valve implantation

*Mario Carminati, Italy*

13:30 – 14:00

### Closing Keynote Lecture

Plenary Hall

**Chairs:** Mohamed Ben Farhat- Horst Sievert – Habib Gamra

Top three Practice Changing Late Breaking Trials from TCT 2021

*Gregg Stone, USA*

## Closing Remarks / Meeting Highlights

Mohamed Ben Farhat – Habib Gamra – Horst Sievert

Entry ID	Name	Surname	English Title
997	WAEI	YAAKOUBI	Anomalous Origin of the Left Coronary Artery from the Non-Coronary Cusp: About A Scarce Case of a Tunisian Adult
1040	Mariem	Mediouni	Acceleration Time and Ratio of Acceleration Time to Ejection Time: Echocardiographic Diagnostic Parameters in Aortic Stenosis
1128	amrouche	amel	3D transoesophageal echocardiography assessment of mitral stenosis
1161	Nawel	Dahimene	Atrial septal defect and three dimensional trans esophageal echocardiography : when the 3D saves the day ?
989	YAAKOUBI	WAEI	A JELLYFISH SHAPED PROXIMAL LEFT ANTERIOR DESCENDING CORONARY ARTERY: ABOUT AN INTRIGUING CASE
991	Houssem	Thabet	An exceptional cause of chronic chest pain
992	Houssem	Thabet	A rare complication of Behçet's disease. A case report.
994	Ghariani	Anis	Clinical characteristics of patients presenting with early in-stent restenosis and mid-term outcomes after revascularization
1006	FADWA	OMRI	BALLOON MITRAL VALVOTOMY FOR PATIENTS WITH MITRAL STENOSIS IN ATRIAL FIBRILLATION: IMMEDIATE AND LONG TERM
1015	Ben Abderrahim	Sarra	Anomalous origin of left coronary artery from the right pulmonary artery: Autopsy case and literature review
1021	fares ammar	ammar	Clinical characteristics of high bleeding risk patients admitted for Non-ST segment elevation myocardial infarction
1038	Sabrina	Soudani	Association between GRACE risk score and coronary disease complexity in patients with acute coronary syndrome
1064	Kallala	Mohamed Yassine	A decreased LA reservoir function is associated with high trans mitral gradient in mitral stenosis (MS) patients
1066	Kallala	Mohamed Yassine	Association of left atrial reservoir function with pulmonary hypertension (PH) in patients with rheumatic mitral stenosis
1081	El Hakim	Foued	Acute coronary syndrome in the elderly: epidemiological, clinical, therapeutic and prognostic particularities
1097	Iyed	Maatouk	Attitudes and perceptions of adult smokers about smoking cessation
1098	Iyed	Maatouk	Analysis of the performance of EuroSCORE II according to the discrimination approach in a Tunisian population
1104	Ridha	Fekih	Acute coronary syndrome caused by coronary embolism: About 6 cases
1112	ahmed	mlik	Cardiovascular risk factors and stent thrombosis
1113	Emna	Rekik	Accessory and Solitary Main Papillary Muscle Hypertrophy Resulting in Dynamic Mid - Left Ventricular Obstruction: Contribution of Multimodality Imaging in Highlighting of Dynamic and Structural Abnormalities.
1119	Drissa	Mariem	Accuracy of 64-slice computed tomography in the preoperative assessment of coronary disease as compared with conventional invasive coronary angiography
1134	Rihab	Sghir	A severe pulmonary arterial hypertension complicated a systemic-onset juvenile arthritis in a child
1135	Houssem	BEN AYED	Acute complications during chronic total occlusions revascularizations
1152	Amdouni	Nesrine	Clinical and prognostic features of infective endocarditis in women
1155	Ayoub	Meddeb	Atrial septal defect management in the era of percutaneous closure devices
1159	mariem	drissa	Cardiovascular risk in heart failure with mid-range ejection fraction
1169	kacem	marwen	Clinical characteristics of patients with Infective endocarditis
1221	MEKKI	NOUHA	A CORONARY PERFORATION : always a nightmare
1239	Nasser	Khaoula	Application of Medical Imaging in Diagnosis and Assessment of cardiac tumors (About 26 patients)
1241	Chouihi	Roua	Cardiopulmonary arrest in pre-hospital in the era of COVID
1247	Roua	Chouihi	Acute coronary syndrome with elevation of ST segment in the COVID-19 era
1249	Chiraz	Lassoued	Infective endocarditis secondary to a restrictive ventricular septal defect

Entry ID	Name	Surname	English Title
973	Ghariani	Anis	Comparison of survival following different treatment modalities of in-stent restenosis
1017	ben hamida	yasmine	FALSE AORTIC ANEURYSM POST TEVAR : EXCEPTIONAL FATAL COMPLICATION
1024	CHENIK	Sarra	Heart and Cancer: Predictors of Cardiotoxicity by Chemotherapy
1026	Amira	Talhaoui	CLINICAL CHARACTERISTICS OF PATIENTS UNDERGOING TAVR
1117	AZZOUZ	Abdelmalek	Comparison of short- and long-term mortality of acute ST-segment elevation myocardial infarction and non-ST-segment elevation acute coronary syndrome in patients admitted in the A2 Cardiology Department, Mustapha Bacha Hospital, Algiers, Algeria.
986	Ben Othman	Rihab	Hypertrophic cardiomyopathy in children: Etiology and clinical characteristics
990	Housseem	Thabet	Congenital structural heart diseases associated with coronary abnormalities
999	Ghariani	Anis	Clinical, electrical and angiographic characteristics of young patients with acute myocardial infarction
1004	FADWA	OMRI	ENDOCORONARY STENT THROMBOSIS : IN-HOSPITAL MORTALITY AND ITS PREDICTORS
1016	skander	bouchnag	determinants of return to work after acute coronary syndrome
1023	Tlili	Ghassen	Does a myocardial cleft support the diagnosis of early Hypertrophic cardiomyopathy in case of syncope with minimal posterior hypertrophy?
1025	Tlili	Ghassen	Infective endocarditis on ductus arteriosus: A myth or a reality?
1060	Kallala	Mohamed Yassine	Factors associated with low-flow in rheumatic mitral stenosis (MS) patients
1065	skander	bouchnag	Impact of acute hyperglycemia after angioplasty for acute myocardial infarction
1073	Dardouri	Safa	contribution of biomarkers (troponin and NT-pro BNP) in the early detection of cardiotoxicity induced by chemotherapy
1091	Iyed	Maatouk	Impact of central venous pressure on mortality in patients admitted for shock
1105	azouz	asma	Fatal acute aortic syndrom Department of forensic medicine of Monastir, Activity report
1116	BEN AYED	Housseem	CLINICAL PARTICULARITIES, THERAPEUTIC STRATEGIES, AND MEDIUM-TERM OUTCOMES OF OSTIAL LEFT ANTERIOR DESCENDING CORONARY ARTERY STENTING
1118	skander	bouchnag	Drug-Eluting vs. Bare-Metal Stents: Is it a Matter of Vessel Size?
1122	Kallala	Mohamed Yassine	Impact of percutaneous transvenous mitral commissurotomy (PTMC) on left heart hemodynamics and mitral stenosis' (MS) tolerance: a prognostic case series study.
1126	DRISSA	MARIEM	FINDINGS IN THE MAIN CAUSES OF HEART FAILURE(HF) IN YOUNG PATIENTS
1129	Kallala	Mohamed Yassine	Evolution of right ventricular (RV) strain after percutaneous transvenous mitral commissurotomy (PTMC): a prospective case series study.
1138	Amdouni	Nesrine	Incidence and clinical characteristics of patients presenting with myocardial infarction with non-obstructive coronary arteries (MINOCA)
1140	Amdouni	Nesrine	Clinical presentation, risk factors and outcomes in women with acute ST- elevation myocardial infarction (STEMI)
1145	Amdouni	Nesrine	Epidemiological profile and biological factors predicting in-hospital mortality in infective endocarditis
1146	DRISSA	MARIEM	EVOLUTION OF LEFT VENTRICULAR EJECTION FRACTION IN YOUNG ADULTS HEART FAILURE (HF)
1211	Drissa	Mariem	Infective endocarditis profile, prognostic factors and in-hospital mortality: 20-years trends from a tertiary university center in tunisa
1233	OUSSEMA	ACHECHE	Diagnostic of accuracy of point -of-care lung ultrasonography using two methods of calculating the pulmonary congestion score in adults with symptoms suggestive of acute decompensated heart failure
1248	Hella	Kaddour	Coronary perforation: Always unexpected.
1257	Roua	Chouihi	Evaluation of the management of pediatric cardiac arrest by in situ simulation

Entry ID	Name	Surname	English Title
1030	SARRA	CHENIK	Prevalence of arrhythmias and conduction disturbances post-TAVR
1036	Soudani	Sabrina	Predictors of smoking cessation after acute coronary syndrome
1069	Djermane	Dalila	Mortality after 6 months of follow up of an algerian population presenting with acute heart failure
1108	AZZOUZ	Abdelmalek	Patients admitted for NSTEMI: short and long-term prognosis: intrahospital and 12month results
1148	Amdouni	Nesrine	Predictive risk factors of embolic event in patients with infective endocarditis
1156	Mediouni	Mariam	Left ventricular non-compaction cardiomyopathy: clinical and imaging findings
983	GHARDALLOU	HOUDA	NEONATAL REVELATION OF EBSTEIN ANOMALY: WHEN THE TRICUSPID VALVE IS LETHAL
985	GHARDALLOU	HOUDA	Melody prosthesis : An infective endocarditis once again
987	Ben Othman	Rihab	Outcomes of childhood hypertrophic cardiomyopathy.
1000	Ghariani	Anis	Prognostic factors of myocardial infarction among young adults
1001	GHARDALLOU	HOUDA	Junctional tachycardia in children : Is it a WPW syndrome ?
1020	fares	ammar	Outcomes and prognosis of patients admitted for non-ST segment elevation myocardial infarction
1028	Yasmine	Hajri	Myocardial clefts, should we be worried?
1031	Amira	Talhaoui	Percutaneous coronary revascularization before TAVR: is it really beneficial?
1035	Tlili	Ghassen	Interatrial block mimicking a preexcitation syndrome in patient with atypical flutter admitted for wide QRS tachycardia
1046	Ben ayed	Houssem	Luckily, we enhance the stent!
1048	BEN AHMED	HABIB	Myocardial bridging and sudden cardiac death, data from the northern Tunisian sudden cardiac-death registry
1068	Dardouri	Safa	Kounis syndrome : Allergic acute coronary syndrome
1080	Boussema	Amine	Predictive value of the CHA2DS2-VASc score for severity of coronary artery disease in patients with Acute Coronary Syndrome
1089	aiman	GHRAB	Recurrent ST-segment elevation after successful percutaneous coronary intervention
1094	Nada	Boukadida	Quality of life among parents of children with congenital heart diseases
1109	Sabrina	Bousnina	Persistent ST-segment elevation due to cardiac metastasis
1120	Drissa	Mariam	Ostial coronary artery stenosis after aortic valve replacement
1121	skander	bouchnag	Long-Term Results After Drug-Eluting Stent Implantation in Diabetic Compared To Non Diabetic Patients
1123	skander	bouchnag	Lesion Length Impacts Long Term Outcomes of Drug-Eluting Stents
1130	DRISSA	MARIEM	MORTALITY PREDICTIVE FACTORS IN YOUNG PATIENTS WITH HEART FAILURE (HF)
1150	Mariam	Drissa	Peripartum Cardiomyopathy: a disease with a mysterious course
1162	Meriem	Grayaa	Medico-legal aspects of sudden cardiac death at work: A retrospective study during 28 years
1165	DRISSA	MARIEM	PREDICTIVE FACTORS OF CORONARY LESIONS IN POSITIVE EXERCISE TESTING
1167	Achref	Hamndani	Neuro endocrine carcinoma revealed by a tamponade : A Case Report
1179	dardouri	safa	Predictors of residual shunt after percutaneous closure of the patent ductus arteriosus in lower weight infants
1213	drissa	meriem	Management of Acute coronary syndrome without ST-segment elevation in women
1222	AHMED	BOUHLEL	Prognosis of patients consulting for acute coronary syndrome: ST-elevation myocardial infarction (STEMI) by gender
1231	SALMA	BEN SAID	Management of chest pain in COVID-19 patients in the Emergency Department
1238	AHMED	MH	Performance of TIMI score to predict major adverse cardiac in patients with acute coronary syndrome (about 500 cases)

Entry ID	Name	Surname	English Title
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Submission ID: 997

### ANOMALOUS ORIGIN OF THE LEFT CORONARY ARTERY FROM THE NON-CORONARY CUSP: ABOUT A SCARCE CASE OF A TUNISIAN ADULT

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LA Rabta, Tunisia

#### Background:

Anomalous origin of the left coronary artery from the non-coronary cusp (LCANCC) is extremely rare and its prognosis and management are still controversial. The anomalous aortic origin of the coronary arteries (AAOCA) occurs in up to 0.7% of the general population. Despite its extremely low prevalence, it is the second most common cardiovascular cause of sudden cardiac death (SCD). There are scarce reports of left coronary artery (LCA) arising from the non-coronary cusp (LCANCC), which is one of the rarest forms of coronary anomalies. Furthermore, the true prevalence, prognosis, risk stratification strategies, and management options for this specific coronary anomaly have not been well-defined.

#### Case presentation:

A 38-year-old woman presented for evaluation after multiple emergency room (ER) visits with atypical chest pain over the last three years. She denied dyspnea on exertion or syncope. The electrocardiogram was normal. Troponins were repeatedly negative. Computed tomography coronary angiogram (CCTA) was performed. The LCA had an anomalous origin from the

non-coronary sinus of Valsalva followed a retro-aortic, and then bifurcated into the left anterior descending (LAD), and left circumflex arteries (LCX). Left coronary arteries were hypoplastic and the left main was small and widely dominated by a large right coronary artery RCA originated from the right coronary cusp. There was no evidence of coronary atherosclerosis or myocardial bridging. A basic coronary angiography was performed revealing the same constations of the CT scan but technically, the left main intubation was difficult given its course and size. Intravascular ultrasound (IVUS) showed a left main coronary artery with a minimal luminal area of 27 mm<sup>2</sup>. Transthoracic Echocardiogram showed normal size of left ventricle (LVEF was about 60 %), the contractility of the LV was preserved without mitral regurgitation mitral regurgitation (MR). Left coronary artery birth site is blind end and its path was retro aortic arising from the non-coronary cusp the right coronary artery birth-site and path were normal. The right ventricle (RV) was normal. Speckle tracking (GLS) was about -22%. Based on these images and clinical findings, the decision for coronary artery bypass of LAD was made.

#### Conclusion:

Although LCANCC is fairly rare, the potential risk of sudden cardiac death and other adverse complications make accurate diagnosis and treatment of this condition crucial to maximizing patient out.

Submission ID: 1040

### ACCELERATION TIME AND RATIO OF ACCELERATION TIME TO EJECTION TIME: ECHOCARDIOGRAPHIC DIAGNOSTIC PARAMETERS IN AORTIC STENOSIS

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#### Background:

Assessing aortic stenosis severity is essential for its correct management. The echocardiographic evaluation of AS can sometimes be tricky and inconsistencies can be found between gradients and aortic valve areas. The aim of our study was to evaluate the role of acceleration time (AT), ejection time (ET) and their ratio (AT/ET) in AS diagnosis.

#### Methods:

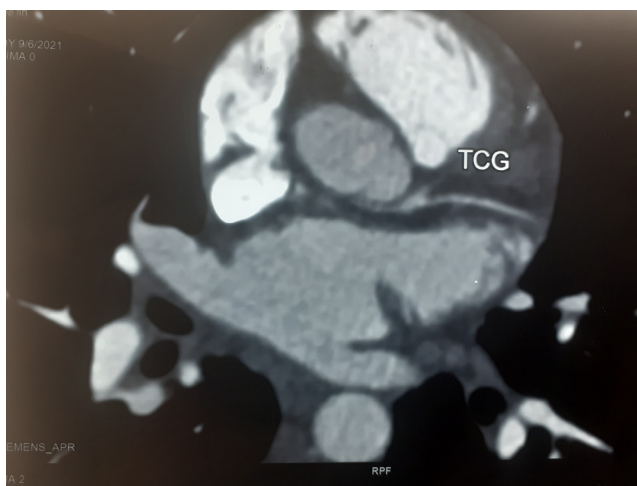
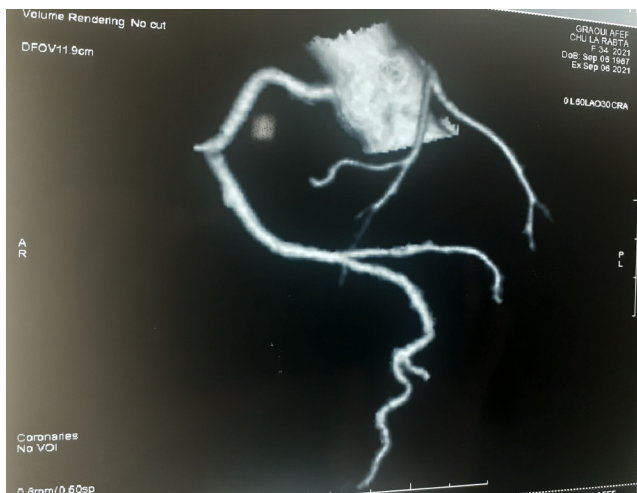
50 Patients with AS (aortic peak velocity > 2 m/sec) were prospectively included. Quantitative echocardiographic Doppler parameters including ejection dynamics (AT, ET, and AT/ET ratio) as well as conventional and clinical parameters were analyzed. AT, ET, and AT/ET ratio were calculated in different stages of AS.

#### Results:

50 patients were included in our study (54% of men, mean age of 72 ±10 years) of whom 36 (72 %) had severe AS, 12 (24%) had mild AS and 2 (4%) had moderate AS. Most of our patients (92%) had a normal systolic function with a mean EF of 58% and all of them had classic normal flow high gradient AS. AT and AT/ET ratio were higher in patients with higher levels of severity of AS. Significant correlation was found between AT and the classic echocardiographic parameters of AS: peak velocity (p=0.01), mean gradient (p=0.005) and aortic valve area (p=0.023). AT/ET ratio was as well significantly correlated with these parameters: peak velocity (p=0.16), mean gradient (p=0.012) and aortic valve area. Both of these dynamic parameters had poor correlation with DVI (p= 0.3 and 0.4 respectively). On multivariate analysis, AT was associated with aortic orifice area (p=0.04). A cutoff value of 94.5ms for AT had a sensitivity of 97% for severe AS and a cut-off value of 0.300ms for AT/ET ratio had a sensitivity of 97.2%.

#### Conclusion:

Ejection parameters such as AT and AT/ET are valuable parameters to help evaluate AS severity.



Submission ID: 1128

**3D TRANSESOPHAGEAL ECHOCARDIOGRAPHY ASSESSMENT OF MITRAL STENOSIS**

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**Introduction:**

Mitral stenosis is defined by a mitral valve area less than 1.5cm<sup>2</sup>. The planimetry of the mitral valve is the reference method to assess mitral valve stenosis, but it is not always easy to perform with 2D transthoracic echocardiography in some patients, we then use the trans esophageal echocardiography to complete our study, since the introduction of 3D modes we improved our comprehension of the mitral anatomy, 3DE improves MVA measurement since it allows to acquire front view of the mitral valve (surgical view) witch is impossible with 2D, in this acquisition we can perform the mitral planimetry very reliably with an alignment of the orthogonal planes.

In addition to the benefits it offers for planimetry, it is also mandatory to evaluate the anatomy of the valve to ensure the feasibility of percutaneous mitral commissurotomy (PMC); indeed in our country the cause of mitral stenosis is mostly rheumatic and therefore better suited for PMC.

Classically the Wilkins score is used, this score is based on the assessment of four parameters (in 2D echocardiography), which include: leaflets mobility, thickness, calcification, and subvalvular apparatus. currently 3D has a supplementary value in this purpose and there is some new scores developed for this purpose for exemple 3DRTE score: each leaflet is divided into three scallops (anterolateral A1-P1, middle A2-P2, and posteromedial A3-P3) and each part is scored separately for thickness, calcification, and mobility.

There is sufficient evidence that 3D is superior to 2D echocardiography and may be routinely used in the quantification of the MVA and the mitral anatomy in mitral stenosis.

Submission ID: 1161

**ATRIAL SEPTAL DEFECT AND THREE DIMENSIONAL TRANS ESOPHAGEAL ECHOCARDIOGRAPHY : WHEN THE 3D SAVES THE DAY?**

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**Introduction**

Atrial septal defect (ASD) is one of the most common acyanotic congenital cardiac diseases. The clinical presentation is variable and the closure indication are clear in most cases. The challenge is to select the right candidate for the right modality. Transcatheter procedures are less invasive and provide rapid recovery and early discharge of the patient; it is now widely accepted as the first therapeutic approach.

The 3 D Transesophageal echocardiography ( 3D TEE) seems to be the appropriate tool to get a detail morphological evaluation of the defect which is the key to achieve a successful closure

In these two cases we are going to discuss how the 3D TEE helps us decide which of these two patients is eligible to a transcatheter closure and what is the added-value of the 3D in this situation.

Two patients were addressed to our echolaboratory , the first has exercise dyspnea, the second was paucisymptomatic, both have major right ventricular dilatation and volumetric overload due to an ostium secundum atrial septal defect but only one was selected to a transcatheter closure despite similar TTE finding. The 3D TEE has shown better description of the rims bordering the defect so the selection was easier and more accurate.

**Key words:** Atrial septal defect - Three dimensional transesophageal echocardiography- transcatheter closure

Submission ID: 989

**A JELLYFISH SHAPED PROXIMAL LEFT ANTERIOR DESCENDING CORONARY ARTERY: ABOUT AN INTRIGUING CASE**

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**Background:**

Coronary artery fistula (CAF) is an abnormal communication between a coronary artery and one of the cardiac chambers or a great vessel, so bypassing the myocardial capillaries.

They are usually discovered incidentally upon coronary angiography. Clinical manifestations are variable depending on the type of fistula, the severity of shunt, site of shunt, and presence of other cardiac conditions.

**Case presentation:**

A 63 years old tabetic and hypertensive man was referred to cardiology clinic of LA RABTA with chest pain. His chest pain was retrosternal and effort-related, was relieved by rest, radiated to left arm. He had no history of diabetic mellitus, hyperlipidaemia, and family history of coronary artery disease.

There were no signs of cardiopulmonary insufficiency. Physical examination and heart auscultation revealed nothing unusual. ECG showed a sinus rhythm of 76 beats/min, without repolarisation anomalies. The transthoracic echocardiogram demonstrated normal wall motion with an ejection fraction of 55% and heart function valve was unremarkable.

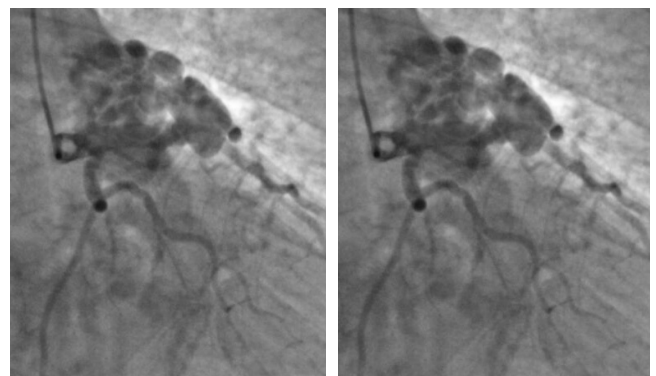
Seen a high probability of coronary artery disease, the patient underwent a coronary arteriogram, which revealed a big and complex fistula connection arising from the left anterior descending artery (LAD) which was mildly calcified and draining into left pulmonary artery.

The fistula was serpiginous and jellyfish-like from proximal left anterior descending artery (LAD) and it ends in two ways on the left pulmonary artery. There was a significant stenosis at the mid of LAD. The CT-Scan of coronary arteries confirmed the presence of an aneurysmal and tortuous coronary artery fistulae between proximal segment of LAD and left pulmonary artery.

Considering the complexity of this fistulae, we thought that transcatheter repair would not occlude it totally and therefore, surgery would be a more feasible and effective approach. After discussing the risks and benefits of the surgical and transcatheter approaches with the patient, the decision was made to pursue surgical repair.

**Conclusion:**

Our case is a good example of a rare congenital anomaly in which coronary artery pathology can remain entirely asymptomatic over many years. Despite the fact that CAF is rare, this diagnosis should be considered in all patients who present with angina, as was evident in this case.



Submission ID: 991

### AN EXCEPTIONAL CAUSE OF CHRONIC CHEST PAIN

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#### Background:

Papillary fibroelastoma is a benign, primary, and very rare cardiac tumor with a preferential valve location (77% of cases). The aortic tumor is the most affected (30% of cases) followed by the mitral valve (20-25% of cases). Although fibroelastoma affects all age groups from the neonatal period to the tenth decade of life. Sometimes asymptomatic, it can be the cause of serious embolic events.

#### Case presentation:

We report the case of a 59-year-old patient with a history of diabetes, hypertension, unmatched sleep apnea syndrome, and an ischemic stroke that was not sequelae one year ago. She consulted the emergency room for atypical chest pain that had progressed for a year without other associated clinical signs. The clinical examination was unremarkable. The ECG showed a regular, sinus rhythm as well as an incomplete left bundle branch block. Troponins were negative. We completed with an echocardiogram which revealed a rounded, well-defined, mobile mass of tissue echogenicity measuring 13 mm long, at the expense of the aortic wall. The aortic valve was neither leaky nor stenosing, and the left ventricle systolic function was correct. Besides, there were no other anomalies. The infectious investigation was negative. We completed by a cardiac scanner which confirmed the fibroelastoma. The CT scan showed permeable coronary arteries. We opted for surgical resection of the tumor but the patient refused surgery. Currently, one year after the discovery of this benign tumor, the patient reported atypical precordialgia.

#### Conclusion:

Currently, the diagnosis is easily suggested by echocardiography and computed tomography. The diagnostic confirmation remains anathomopathological. Its treatment is surgical by excision of the tumor. The long-term prognosis is good.

Submission ID: 992

### A RARE COMPLICATION OF BEHÇET'S DISEASE. A CASE REPORT

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#### Background:

Behçet's disease is a systemic disease, which mainly affects young people in Mediterranean countries. Cardiac involvement is rare, its prevalence varies from 1 to 6% in clinical series, it can affect the three tunics of the heart. Coronary artery disease is the most severe heart attack.

#### Case presentation:

We report the case of a 32-year-old man with no previous family and personal history. He went to the emergency room for atypical chest pain. His ECG showed a regular sinus rhythm, with no disturbance in repolarization. The physical examination was normal. US troponins was elevated at 5000. A TTE was performed showing good systolic function of the LV, the segmental kinetics were homogeneous, with absence of valve disease and a dry pericardium. The patient was admitted to cardiology, a coronarography done was normal except the diagonal which was the site of multiple aneurysm lesions. During his hospitalisation, the patient presented an osteonecrosis of the left femoral head. Behçet's disease has been evoked and then confirmed. The patient was transferred to

the internal medicine department for further management. 1 year later, the patient consulted for tightness-type chest pain occurring at rest, intermittent, lasting 30 min, associated with dyspnea at rest. Physical examination revealed isolated polypnea at 22 cpm. In biology: BC = 10,000. CRP = 150 US Troponins = 14000. The ECG was normal. Chest x-ray revealed a convex left middle arch filled with a water-toned mass. TTE found good systolic LV function. As well as the presence of an aneurysm formation of 51 mm of long axis, the origin of which would be a branch of the left coronary artery, deforming the lateral wall of the LV and pushing back the pulmonary trunk and the left PA without creating a real obstacle. Coronary angiography was then performed showing a large partially thrombosed sacciform aneurysm of IVA I with a circulating lumen at 3 cm and a neck of 4 mm. 2 micro-aneurysms at the level of the distal part of the 2nd diagonal of 4 and 3 mm. The distal Cx was occluded. The patient received solumédrol then relayed by oral corticosteroids associated with imurel. The medico-surgical staff opted for resection of the coronary aneurysm with a coronary artery bypass grafting. Which were realised with success.

#### Conclusion:

Behçet's disease is a vasculitis of varying expression. Cardiac involvement remains rare. The interest of our clinical presentation is its peculiarity in the difficulty of management.

Submission ID: 994

### CLINICAL CHARACTERISTICS OF PATIENTS PRESENTING WITH EARLY IN-STENT RESTENOSIS AND MID-TERM OUTCOMES AFTER REVASCULARIZATION

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#### Introduction:

The mechanism and characteristics of early in-stent restenosis (ISR) is not fully elucidated. Whether there are different clinical characteristics and outcomes among patients presenting with early and late ISR remains to be clarified.

In our study, we aimed to compare clinical characteristics of patients presenting with early and late ISR and to describe outcomes following revascularization

#### Methods:

A total of 116 patients who underwent initial stent implantation in our hospital, and then were readmitted to receive treatment for the reason of recurrent ISR. From January 2017 to December 2018 were involved. The patients were categorized as early ISR ( $\leq 6$  months;  $n = 30$ ) and late ISR ( $> 6$  months;  $n = 86$ ). They were followed-up for a mean period of 24 months. During follow up, major adverse cardiac events (MACEs) included cardiac death, non-fatal myocardial infarction (MI), or target lesion revascularization (TLR) were collected.

#### Results:

Most baseline characteristics were almost similar in both groups except for hypertension and treatment with statins. The group of early ISR were more hypertensive (60% vs 41.2%,  $p = 0.004$ ) and received less frequently full dose of statin (3.3% vs 24%,  $p < 0.001$ ). The incidence of MACEs is higher in the early ISR group (18.1% vs 6.4%;  $p = 0.042$ ). A daily dose of statin under the full dose was predictor of worse outcomes following revascularization (75% vs 19%,  $p = 0.005$ ).

#### Conclusion:

Our study suggests that Early ISR is associated with more MACEs during the mid-term follow-up period. The LDL-cholesterol levels may be related to the formation and progression of early neoatherosclerosis. This may explain that statins under the full dose is associated with worse outcomes following ISR treatment in the early ISR group.



Submission ID: 1006

### BALLOON MITRAL VALVOTOMY FOR PATIENTS WITH MITRAL STENOSIS IN ATRIAL FIBRILLATION: IMMEDIATE AND LONG TERM

Fadwa Omri, Mejdi Ben Messaoud, Skander Bouchnag, Ammar Dhoubi, Mahdi Boussaada, Nidhal Bouchahda, Marouen Mahjoub, Majed Hassine, Fethi Betbout, Habib Gamra

#### Introduction:

Atrial fibrillation (AF) is a common finding in patients with severe mitral stenosis requiring Balloon Mitral Valvotomy (BMV). Its immediate and long term prognosis remains controversial

#### Materials and methods:

The immediate procedural and the long-term clinical outcome after BMV of 139 patients with AF were collected and compared with those of 381 patients in normal sinus rhythm (NSR).

#### Objectives:

We sought to evaluate the effect of AF on the immediate and long-term (23 years) outcome of patients undergoing BMV.

#### Results:

Patients with AF were older (43.3 vs. 29.7 years;  $p < 0.001$ ), had frequently a history of systemic embolism (9.4% vs. 1.6%,  $p < 0.001$ ) and of mitral commissurotomy (28.1% vs. 19.4%,  $p=0.035$ ).

Symptoms were similar between the two groups (NYHA > II: 48.9% vs. 49.9%,  $p=0.648$ ). Patients with AF had more frequently a Wilkins score > 8 (51.4% vs. 30.9%,  $p < 0.001$ ), a larger left atrium (41 cm<sup>2</sup> vs. 32 cm<sup>2</sup>,  $p=0.001$ ) and a lower transmitral gradient (11.1 mmHg vs. 16.6 mmHg,  $p < 0.001$ ).

BMV was equally successful in the two groups (90.6% vs. 94%,  $p=0.187$ ) but resulted in a smaller post BMV area (2 cm<sup>2</sup> vs. 2.15 cm<sup>2</sup>,  $p=0.012$ ) with a lower mitral valve area gain (0.9 cm<sup>2</sup> vs. 1 C,  $p=0.015$ ).

BMV was not associated with a higher risk of complications (4.3% vs. 4.7%,  $p=0.844$ ). After a mean follow-up of 74 months, patients with AF had the same rate of restenosis (28.3% vs. 25.6%,  $p=0.96$ ) but required more frequently a mitral valve replacement (16.3% vs. 7.7%,  $p=0.012$ ). They also experienced higher rates of systemic embolism (3.8% vs. 0.6%,  $p=0.018$ ) and had a lower rate of event free survival (freedom from death, restenosis and systemic embolism) (52.2% vs 68.8%,  $p=0.047$ ).

In the group of patients in AF, predictive factors for combined adverse events including death, restenosis, and systemic embolism and mitral valve replacement are: post BMV area < 2cm<sup>2</sup> (OR: 2.5, 95% CI [1.2; 5.18],  $p=0.014$ ), procedural complications including severe mitral regurgitation and tamponade (OR: 3.95, 95% CI [1.4; 11.13],  $p=0.009$ ) and NYHA ≥ II during follow up (OR: 3.46, 95% CI [2.09; 5.73],  $p < 0.001$ ).

#### Conclusion:

Our data support the fact that patients with AF have worse immediate and long term outcomes after BMV. Post BMV area < 2cm<sup>2</sup>, procedural complications and dyspnea predict adverse events during follow up.

Submission ID: 1015

### ANOMALOUS ORIGIN OF LEFT CORONARY ARTERY FROM THE RIGHT PULMONARY ARTERY: AUTOPSY CASE AND LITERATURE REVIEW

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#### Introduction:

Anomalous Left Coronary Artery from Pulmonary Artery (ALCAPA)

is a rare congenital heart disease (0.46% of all congenital anomalies) responsible for the development of heart failure, most often at an early age. Few cases of survival to adulthood with no surgical correction have been published in the literature, with a diagnosis made at autopsy in 41% of cases. We report a case of incidental discovery of ALCAPA during a sudden death autopsy in a young adult, with the aim to discuss novel insights into the pathophysiology of this heart defect.

#### Case report:

The case involves a 23-year-old male subject, with a family history of sudden death, who quickly died after the onset of acute chest pain. The autopsy revealed a heart weighing 345g, with an anomalous origin of the left coronary trunk arising from the pulmonary trunk, which then divides into two branches, the left anterior descending coronary artery, and the circumflex artery. The right coronary artery arises from the left Valsalva sinus and runs along the anterior part of the atrioventricular sulcus. The coronary network was free from any atherosclerotic plaque. The heart walls were thickened, and white myocardial areas were found at the anterior and lateral wall of the left ventricle, corresponding to old myocardial fibrosis (supported by the histological study). The cause of death was concluded as an ischemic heart failure related to an anomalous coronary artery origin. The manner of death was retained as natural (after a negative toxicological study).

#### Conclusion:

The diagnosis of ALCAPA was made postmortem in our case. This form is known in the literature as a moderate form of ALCAPA, where the collateral network between the coronaries is sufficient, at least until the anomaly is revealed in the event of sudden death.

Submission ID: 1021

### CLINICAL CHARACTERISTICS OF HIGH BLEEDING RISK PATIENTS ADMITTED FOR NON-ST SEGMENT ELEVATION MYOCARDIAL INFARCTION

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#### Background:

Patients presenting with Non-ST segment elevation myocardial infarction (NSTEMI) represent an heterogeneous population, with often significant overlap of both ischemic and major bleeding risk factors.

#### Aim:

We sought to evaluate the prevalence of HBR patients among those admitted for NSTEMI and their prognosis

#### Methods:

From January 2017 to December 2020, patients, admitted for NSTEMI and treated with PCI, were enrolled, Bleeding risk factors were evaluated by calculating the ARC HBR score with the online application.

#### Results:

Two hundred and fifty patient were enrolled. Sixty nine patients (27.5%) were at high bleeding risk, among them, 33 had only one major criteria (47.8%), 29 patients had two minor criteria (42%) and 7 patients (10%) had more than one major criteria. High bleeding risk patients were older (79.4% vs. 19%,  $p < 0.001$ ), more commonly female (50% vs 21.4%,  $p < 0.001$ ), had more cardiovascular risk factors such as diabetes mellitus (54.4% vs 35.7%,  $p=0.007$ ) arterial hypertension (63.2% vs 40.7%,  $p=0.002$ ) and dyslipidemia (33.8% vs 17%,  $p=0.004$ ). Furthermore, these patients had more comorbidities such as oral anticoagulation (19.1% vs 0%,  $p < 0.001$ ), previous ischemic stroke (16.2% vs 1.1%,  $p < 0.001$ ), chronic kidney disease (42.6% vs 6.6%,  $p < 0.001$ ), mild and severe

anemia (100 % vs 0%,  $p < 0.001$ ), thrombocytopenia  $< 100\ 000$  (100% vs 0%,  $p < 0.001$ ), active malignancy (100 % vs 0%,  $p < 0.001$ ) and had more frequently a high PRECISE DAPT SCORE ( $> 25$ ) (67.7 % vs 4.9 %,  $p < 0.001$ ).

#### Conclusion:

Our study demonstrated that high bleeding risk patients are patients with high ischemic risk. This makes the decision of double anti-platelet aggregation duration more challenging in our everyday practice.

Submission ID: 1038

### ASSOCIATION BETWEEN GRACE RISK SCORE AND CORONARY DISEASE COMPLEXITY IN PATIENTS WITH ACUTE CORONARY SYNDROME

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#### Introduction:

The GRACE score is a useful tool for risk stratification in patients with acute coronary syndrome (ACS). The purpose of this study was to evaluate the accuracy of the GRACE score in predicting the extent of coronary artery disease.

#### Method:

A total of 90 patients hospitalized in the cardiology department of the main military, presenting with ACS and undergoing coronary angiography were included in this analysis.

Patients were classified into two categories: those with coronary status with monotruncular involvement and those with bi-truncular or tri-truncular status.

#### Results:

The mean age of our patients was 64.8 years with a male predominance (sex ratio = 1.9).

According to the Grace score 23.3% of the patients had a low risk, 18.9% had a medium risk, and 16.7% had a high risk of mortality.

Spearman correlation and receiver characteristic analysis were performed to investigate the role of the GRACE score as a predictor of the severity of coronary status.

There was a significant positive correlation between coronary status and GRACE ( $r = 0.31$ ,  $p < 0.023$ ). The GRACE score predicted severe CAD (bi-truncular and tri-truncular status) moderately well.

Therefore, our study reports a significantly positive correlation between the GRACE score and coronary status in patients with ACS.

#### Conclusion:

A multidisciplinary approach by a cardiac team could potentially change the therapeutic approach and management of patients with ACS and a high calculated GRACE score.

Submission ID: 1064

### A DECREASED LA RESERVOIR FUNCTION IS ASSOCIATED WITH HIGH TRANS MITRAL GRADIENT IN MITRAL STENOSIS (MS) PATIENTS

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#### Background:

Measurement of mean trans-mitral gradient (MTMG) to assess the

severity of rheumatic MS is widely accepted. However, gradient is highly dependent on flow conditions and heart rate. The role of LA in generating trans-mitral gradient has been poorly investigated.

#### Objective:

To assess the correlation between LA reservoir function (LASr) determined by 2D Speckle Tracking Echocardiography (STE) derived from global LA strain and MTMG.

#### Methods:

We prospectively performed trans-thoracic echocardiography (TTE) in a cohort of patients with rheumatic MS. Basic 2D and doppler EKG gated echocardiographic parameters were recorded such as mitral valve area (MVA) with planimetry and pressure half time (PHT), MTMG, maximal Tricuspid Regurgitation Velocity (TRVmax). Studied parameters represent the mean of 3 consecutive cardiac cycles.

LA global strain curve and peak reservoir strain data were obtained on a dedicated 4C view with STE technique.

#### Results:

195 patients with rheumatic MS were enrolled between February 2018 and October 2021. The mean age was  $50.7 \pm 12$  yrs.

We divided our cohort into two groups: group 1 with  $MTMG \leq 10$  mmHg and group 2 with  $MTMG > 10$  mmHg.

There was not a significant difference between the two groups in age ( $52 \pm 11$  vs  $49.12$  yrs,  $p = 0.09$ ), severity of symptoms (43.2 vs 45.8%,  $p = 0.7$  had NYHA class III or IV symptoms) nor in the incidence of atrial fibrillation (62.5 vs 59.5%,  $p = 0.6$ ).

MVA was significantly lower in group 2 ( $1.07 \pm 0.3$  vs  $1.54 \pm 0.4$  cm<sup>2</sup>,  $p < 0.001$ ).

Group 2 patients had significantly higher Wilkins score ( $11.2 \pm 2$  vs  $12.7 \pm 2$ ,  $p < 0.001$ ), LA indexed volume ( $88.7 \pm 47$  vs  $75.9 \pm 36$  ml/m<sup>2</sup>,  $p = 0.03$ ) and TRVmax ( $3.5 \pm 0.7$  vs  $2.8 \pm 0.4$  m/s,  $p < 0.001$ ).

LASr was significantly higher among patients in group 1 ( $12.3 \pm 8$  vs  $8.2 \pm 5$ %,  $p < 0.001$ ).

#### Conclusion:

LA reservoir function is strongly associated with the level of mean trans-mitral gradient in patients with rheumatic mitral stenosis.

Submission ID: 1066

### ASSOCIATION OF LEFT ATRIAL RESERVOIR FUNCTION WITH PULMONARY HYPERTENSION (PH) IN PATIENTS WITH RHEUMATIC MITRAL STENOSIS

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#### Background:

The pathophysiology triggering dyspnea in rheumatic MS patients remains not fully understood. Studies attributing the severity of symptoms to the degree of PH were deceptive as a non-negligible group of patients relatively tolerated MS despite disproportionate levels of PH.

Recently introduced echocardiographic techniques allowed the study of left atrial reservoir function (LASr) notably in patients with PH.

#### Objective:

To assess the correlation between LASr determined by 2D Speckle Tracking Echocardiography (STE) derived from global LA strain and PH.

#### Methods:

We performed prospective 2D TTE in patients with rheumatic MS. 2D and doppler TTE parameters, including indexed LA volume, maximal trans tricuspid velocity (TRVmax), mean trans-mitral gradient (MTMG), valve area (MVA) using pressure half time (PHT),

2D and 3D planimetry and left ventricular index stroke volume, were recorded. Doppler parameters are determined as the mean of three measurements.

Global LA strain curve and peak reservoir strain value were studied on a dedicated 4C view.

Maximal TRVmax was used as an indicator of the degree of PH to ignore assumptions on the right atrial pressure. A TRVmax cut-off value  $\geq 2.9$  m/s was retained to determine an intermediate to high probability of PH.

NYHA functional status was determined moments before performing the scan.

#### Results:

We enrolled 195 patients with rheumatic MS, with a mean age of  $50.55 \pm 12.07$  yrs (between February 2018 and October 2021).

Patients were divided into two groups: group 1 had TRVmax  $\geq 2.9$  m/s and group 2 had TRVmax  $< 2.9$  m/s.

There was no difference in age ( $52 \pm 12$  vs  $49 \pm 11$ ,  $p=0.16$ ) and in sex (respectively 69.8% and 76.1% were female,  $p=0.3$ ).

AF was comparable between the two groups (69.8% vs 65.7%,  $p=0.5$ ). There was no difference in the incidence of severe dyspnea (48.8% vs 43.1%,  $p=0.5$  had NYHA class III or I symptoms)

The incidence of diabetes mellitus was significantly higher among patients with PH (24.4% vs 10.6%,  $p=0.02$ ).

Patients in the PH group had significantly higher MTMG ( $13 \pm 6$  vs  $8 \pm 3$  mmHg,  $p<0.001$ ) and significantly lower MVA ( $1.1 \pm 0.5$  vs  $1.5 \pm 0.5$  cm<sup>2</sup>,  $p<0.001$ ).

LASr was significantly higher in patients without PH ( $11.1 \pm 7$  vs  $8.9 \pm 5$ %,  $p=0.05$ ).

#### Conclusion:

LASr was associated with a lower incidence of pulmonary hypertension in patients with MS

Submission ID: 1081

#### ACUTE CORONARY SYNDROME IN THE ELDERLY: EPIDEMIOLOGICAL, CLINICAL, THERAPEUTIC AND PROGNOSTIC PARTICULARITIES

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#### Introduction:

Acute coronary syndrome (ACS) is a frequent and serious condition, especially in elderly patients. Very few studies have focused on these patients in a specific way.

The aim of our study was to identify the clinical, paraclinical, therapeutic and prognostic particularities of non ST-segment elevation ACS (NSTEMI) in elderly patients.

#### Method:

A retrospective, analytical, cross-sectional and comparative study, conducted on two consecutive groups of patients (group A: 50 patients aged 70 years or older and group B: 50 patients aged 60 years or younger) with NSTEMI hospitalized in the cardiology department of Military Hospital of Tunis, between January 2017 and December 2019.

#### Results:

The mean age of the patients was  $76.08 \pm 3.67$  years in group A versus  $54.32 \pm 4.89$  years in group B). The elder patients were mostly women (sex ratio=0.47) and non-smokers, and had more hypertension. These patients had more frequently a history of atrial fibrillation and chronic renal failure.

Atypical chest pain, as well as dyspnea, palpitations and lipothymia were more frequent in the elderly patients. They had lower mean hemoglobin levels and higher creatinine and NT-proBNP levels, and significantly higher mean GRACE, CRUSADE and PRECISE-DAPT scores than younger subjects.

Coronary angiography, performed in 98% of patients and in the majority of cases by the radial access, showed calcified lesions more frequently in elderly patients. Angioplasty with active stents was indicated in 69% of patients, with non-significant difference between the two groups. There were no serious complications and no deaths during hospitalization or during the 12-month follow-up.

#### Conclusion:

The risk of coronary artery disease is significant in the elderly, especially in those with comorbidities. Taking into account the high risk of bleeding in these patients, their management, especially the invasive strategy, should not differ from that of younger patients.

Submission ID: 1097

#### ATTITUDES AND PERCEPTIONS OF ADULT SMOKERS ABOUT SMOKING CESSATION

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#### Background:

Tobacco is the major cause of preventable diseases and premature deaths in Tunisia. It is responsible for several health disorders including cardiovascular diseases such as myocardial infarction and angina pectoris. Smoking cessation in adult population is essential to accelerate the reduction in smoking-related morbidity and mortality. Our study aimed to determine attitudes of adult smokers about smoking cessation.

#### Methods:

We conducted a cross-sectional study during March 2018 among adults smokers aged between 31 and 45 years in different social and work environments (coffee shops, airport,...). An anonymous questionnaire was used to collect data including two validated scores :1) the Fagerstrom score to assess tobacco dependence and 2) the Prochaska model scale to determine the stage of maturation to change.

#### Results:

In total, 49 adults participated in the study. The majority of respondents were male (61.22%). Most of them were aged less than 40 years (73.4%). Almost half of the respondents (44.9%) were highly dependent on nicotine (Fagerstrom score ranged from 7 to 10) and only 12.2% were not dependent on nicotine (Fagerstrom score ranged from 0 to 2).

Regarding maturation in smoking behavior, only 20.4% were in the action stage. The majority (79.5%) reported that they were aware that smoking could cause diseases such as cardiovascular diseases. Heart disease was considered attributable to smoking by 40.8% of respondents. The majority of respondents (73.4%) intended to quit.

Data suggests that "concern for personal health" (68%) and "high price of cigarettes" (29.7%) were the two motivational factors for smoking cessation.

Regarding smoking cessation methods, half of respondents (51%) had ever heard of smoking cessation counseling and 59.1% agreed that smoking cessation counseling could be a helpful solution.

#### Conclusion:

Many respondents expressed a desire to free themselves from tobacco addiction. Most public health interventions, such as mass media campaigns, anti-tobacco advertisements and availability of smoking cessation methods may be helpful for motivating cessation in order to prevent tobacco related diseases, especially cardiovascular ones.

Submission ID: 1098

### ANALYSIS OF THE PERFORMANCE OF EUROSCORE II ACCORDING TO THE DISCRIMINATION APPROACH IN A TUNISIAN POPULATION

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#### Background:

Surgical risk assessment in cardiovascular surgery is essential for appropriate patient management. Numerous scores have been developed in cardiac surgery, such as the EuroSCORE II, which is the most widely used model in Europe. We aimed to evaluate the performance of the EuroSCORE II according to the discrimination approach in a Tunisian population.

#### Methods:

We conducted a retrospective cross-sectional study at the Cardiovascular and Thoracic Surgery Department of the University Hospital of Sahloul of Sousse (Tunisia) from January 2015 to December 2016 including 418 adults undergoing cardiac surgery under extracorporeal circulation. Data were collected from the archived patient records. The EuroSCORE II was calculated for each patient using the validated application on the [www.euroscore.org](http://www.euroscore.org) website. Data analysis was performed using the Statistical Package for Social Sciences (SPSS) version 20.0. The EuroSCORE II performance was assessed by the discrimination analysis using the receiver operating characteristic (ROC) curve.

#### Results:

In total, 418 patients participated in the study. The majority of respondents were male (58.6%). The mean age was  $55.84 \pm 13.84$  years. Patients underwent different types of cardiac surgery mainly represented by valve surgery (48.8%). The EuroSCORE II discriminative power analysis showed that the area under the ROC curve (AUC) was  $0.864 \pm 0.032$  (CI 95% 0.801 - 0.927) for our population,  $0.822 \pm 0.061$  (CI 95% 0.703-0.941) for the coronary subgroup,  $0.864 \pm 0.052$  (CI 95% 0.762-0.967) for the valvular subgroup, and  $0.900 \pm 0.041$  (CI 95% 0.819-0.981) for the urgency subgroup.

#### Conclusions:

Our study showed an adequate discrimination of The EuroSCORE II in the total population and in all subgroups reflecting its acceptable performance. It is therefore important to validate such models of risk stratification among patients in developing countries in order to improve their prognosis.

Submission ID: 1104

### ACUTE CORONARY SYNDROME CAUSED BY CORONARY EMBOLISM: ABOUT 6 CASES

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#### Introduction:

Coronary embolism is a rare aetiology of acute coronary syndrome. Establishing the diagnosis represents a challenge for the interventional cardiologist. Various causes have been reported such as infectious endocarditis, mitral stenosis with left atrial appendage thrombus and atrial fibrillation.

Aim: Identify the causes of acute coronary syndrome due to coronary embolism

#### Methods:

We report 6 cases of acute coronary syndrome caused by coronary embolism.

#### Results:

About the 6 patients, 5 men and one woman with an average age of 57 years [40;73]. Cardiovascular risk factors were smoking in one case and arterial hypertension in another one, no other risk factors were found. One patient presented an anterior ST-Segment Elevation myocardial infarction and 5 cases presented non ST segment elevation acute coronary syndrome with positive cardiac markers. Atrial fibrillation was detected in 5 cases, associated to severe mitral stenosis in 2 cases. Transthoracic and transesophageal echocardiography showed a spontaneous echographic contrast in the left atrium in 3 cases: associated to a left atrial appendage thrombus in 2 cases, and a thrombus regarding the posterior mitral leaflet in 2 cases. Coronary angiography was normal in 5 cases and showed a non-occlusive left anterior descending artery thrombosis which faded away after GP IIb/IIIa receptor antagonist therapy. All patients were put on oral anticoagulation treatment with favorable long term follow up.

#### Conclusion:

Coronary artery thrombo-embolism as a non-atherosclerotic cause of acute coronary syndrome is rare and should be evoked among other etiologies, mostly in presence of atrial fibrillation and mitral stenosis. Early and efficient anticoagulation treatment is essential for thromboembolic risk prevention.

Submission ID: 1112

### CARDIOVASCULAR RISK FACTORS AND STENT THROMBOSIS

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#### Background:

Stent thrombosis is a serious complication with an increased mortality rate of 40% and major sequelae of myocardial infarction in approximately 80% of survivors who remain at risk for frequent recurrence. Several factors have been associated with TS, 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 stent thrombosis and to identify the cardiovascular risk factors favoring its occurrence 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 recruited 50 patients who were victims of stent thrombosis 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 an endocoronary prosthesis. Our work includes a comparative section of case-control.

#### Results:

We noted a slightly older population in the cases group compared to the controls with an average of  $60 \pm 10$  years versus  $59 \pm 10$  years without a statistically significant difference ( $p=0.85$ ).

We found that more smoking patients in the cases group than in the controls (76% vs 62%) without this being statistically significant with the univariate study ( $p=0.13$ ).

Paradoxically, the average pack-year was slightly higher in the control group than in the cases (52 vs 48).

The proportion of diabetics was lower in patients with stent thrombosis. There were more insulin-dependent patients in the cases (48% vs. 40%), although this was not statistically significant. The average duration of diabetes was greater in the cases ( $9 \pm 8$  years vs.  $6 \pm 7$  years) without statistical significance in terms of the occurrence of stent thrombosis.

Predominance of arterial hypertension in the control group (54% vs. 50%) without the presence of a statistically significant difference ( $p=0,69$ ).

The proportion of chronic kidney disease was the same in both populations (8%).

#### Conclusion:

Cardiovascular risk factors were more present in the case group without reaching statistically significant thresholds.

Submission ID: 1113

### ACCESSORY AND SOLITARY MAIN PAPILLARY MUSCLE HYPERTROPHY RESULTING IN DYNAMIC MID - LEFT VENTRICULAR OBSTRUCTION: CONTRIBUTION OF MULTIMODALITY IMAGING IN HIGHLIGHTING OF DYNAMIC AND STRUCTURAL ABNORMALITIES

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#### Introduction:

Solitary main and/or accessory papillary muscle hypertrophy may be an uncommon type of hypertrophic cardiomyopathy that does not meet all the usual criteria. The dynamic intraventricular obstruction it may cause is deleterious with an important clinical impact on patients. The mechanisms of such obstruction attracted a lot of attention in order to propose an appropriate treatment.

#### Case presentation:

We report a case of a 36-years-old man presented with a chief complaint of progressively worsening exertional dyspnea. He had demonstrated labile systolic murmur for more than 3 years. Rest echocardiography revealed coexistence of a solitary main papillary muscle (PM) hypertrophy and additional accessory PM with no left ventricular outflow tract or mid ventricle obstructions. Patient underwent exercise stress echocardiography unmasking severe mid-ventricle obstruction (Peak systolic gradient at exercise of 100 mmHg). There was no obvious parietal hypertrophy elsewhere. Cardiac Magnetic Resonance Imaging was conclusive for the incrimination of main and accessory PM in the dynamic process of obstruction.

#### Conclusion:

Multimodality imaging has a determinant role in the screening of spatial configuration and structural abnormalities of papillary muscles in order to avoid the misinterpreting of some atypical presentations of Hypertrophic cardiomyopathy.

Submission ID: 1119

### ACCURACY OF 64-SLICE COMPUTED TOMOGRAPHY IN THE PREOPERATIVE ASSESSMENT OF CORONARY DISEASE AS COMPARED WITH CONVENTIONAL INVASIVE CORONARY ANGIOGRAPHY

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Tunisia

#### Introduction:

Conventional coronary angiography (CA) is currently the reference test for coronary artery disease assessment. Recent advances in multislice computed tomography (MSCT) are offering a noninvasive alternative to conventional angiography in the assessment of coronary artery diseases.

This study was designed to define the current role of 64-slice computed tomography (MSCT) for the diagnosis of coronary artery

disease (CAD) before surgery, compared with conventional coronary angiography.

#### Methods:

Our study is a prospective transversal study that enrolled 20 patients who were scheduled for surgery between June 2019 and December 2019. All patients underwent a 64 slice CT before conventional coronary angiography. We analyzed the results of CAD assessment by means of both MSCT and conventional CA.

#### Results:

The mean age was  $65\pm 10$  years. The majority of patients had less than two risk factors. All patients had atypical angina symptoms. 8 patients were scheduled for non-cardiac surgery and 12 patients for cardiac surgery ( valve replacement). Exercise tests were not possible most of the time because of a physical handicap. All patients underwent a CT scan followed by coronary angiography. The results of the coronary angiography were compared with those of the CT scan. The sensitivity, specificity, predictive positive value and predictive negative value for the detection of stenosis by means of the CT scan were respectively 94%, 96%, 90%, 99%.

#### Conclusion:

The 64 slice- CT has excellent diagnostic performance in the analysis of coronary artery disease before surgery. This technology can be used as a good alternative to coronary angiography.

Submission ID: 1134

### A SEVERE PULMONARY ARTERIAL HYPERTENSION COMPLICATED A SYSTEMIC-ONSET JUVENILE ARTHRITIS IN A CHILD

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#### Introduction:

Systemic-onset juvenile arthritis is an autoinflammatory pathology with rare pulmonary and cardiac involvement. We report a case of a patient who developed severe precapillary pulmonary arterial hypertension (PAH) during a systemic-onset juvenile arthritis with fatal outcome.

#### Case report:

A six-year-old girl was initially hospitalized in the Pediatric department of Sahloul teaching hospital for polyarthralgia, prolonged fever, hepatosplenomegaly, swelling of lymphnode and cutaneous rash. Laboratory tests revealed marked leucocytosis ( $WBC=25000$ ), elevated ESR (116mm), high levels of CRP (179mg/L) and ferritin (10500ng/L). All infectious disease testing were negative as well as antinuclear antibodies. Anatomic pathologic examination of axillary lymph nodes showed no evidence of lymphatic infiltration and bone marrow aspirate had isolated no anomalies. She was diagnosed as systemic-onset juvenile arthritis by characteristic clinical course and laboratory data. The patient has been treated by corticosteroid. However, Rapidly, she began to complain of dry cough and dyspnea. A cardiac ultrasound performed during hospitalization showed severe PAH at 45 and PAPS at 90 mmHg with dilation of right cavities. Angio CT scan reveal no pulmonary embolism and right heart catheterization confirmed the pulmonary precapillary hypertension. The patient has been treated by Sildenafil. However, the outcome was rapidly fatal.

#### Conclusion:

PAH is an underrecognized complications of Systemic-onset juvenile arthritis. It may be the result of severe uncontrolled disease and the prognosis of children having this association remain poor and frequently fatal.

Submission ID: 1135

### ACUTE COMPLICATIONS DURING CHRONIC TOTAL OCCLUSIONS REVASCLARIZATIONS

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#### Introduction:

Chronic total occlusion (CTO) represents a real challenge to percutaneous coronary intervention (PCI) because of the technical difficulties, the risk of failure, complications and high rate of restenosis. Thus, the PCI in this case is discussed based on the result of the benefit and risk of the procedure.

#### Aim of the study:

To determine the in hospital complications of PCI for CTO within 72 hours after angioplasty.

#### Patients and Methods:

This is a descriptive retrospective single-center study including 62 patients who received 65 PCI for CTO from December 2010 to March 2017 at Military Hospital of Tunis. CTO was defined by a complete occlusion of coronary vessel with TIMI 0 flow greater than a three month. The PCI CTO procedural complications can be classified as follows: vascular access related and procedure related.

#### Results:

Our patients mean age was 55.1 years with a sex ratio of 2.64. Diabetes and smoking were the more prevalent cardiovascular risk factors. 94% of patients were symptomatic before angioplasty and acute myocardial infarction was the most common presenting feature. Mean left ventricular ejection function was 49%, with extremes ranging from 20 to 70%.

The revascularization-success-rate was 76.8%.

The complications were: One case of vascular access related complication: a hematoma of four centimeter of diameter at the puncture site., 7 cases of procedure-related complications, a case of aortic dissection sealed by direct stenting of the right coronary artery ostium, three cases of a small coronary dissection repaired by ad hoc stenting, two cases of dissection complicated by an immediate and transient re-occlusion treated with additional stenting without clinical consequences, one acute thrombosis of the left main artery which required thrombo-aspiration and Gp IIb/IIIa inhibitors

In our study, we reported neither death, nor cardiogenic shock, tamponade or myocardial infarction within 72 hours after angioplasty, nor the skin lesions associated with patient X-ray irradiation

#### Conclusion:

In the hands of experienced operators, CTO angioplasty is an interesting therapeutic option with a suitable rate of success and a low complication rate.

Submission ID: 1152

### CLINICAL AND PROGNOSTIC FEATURES OF INFECTIVE ENDOCARDITIS IN WOMEN

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#### Background:

The influence of sex on the prevalence of certain valve diseases is already known. But we have little information about gender differences in patients with infective endocarditis (IE).

#### Aim:

To study the clinical characteristics and prognostic features of IE in women compared to those in men.

#### Methods and patients:

This is a retrospective mono-center study including 245 patients collected in the cardiology B department of Fattouma Bourguiba University hospital between January 2000 and December 2019, hospitalized for IE. The diagnosis of IE was made according to Duke's criteria.

#### Results:

In our study, 106 patients were female (43.3%). The mean age was similar in both sexes ( $36 \pm 18.6$  years in women vs.  $38.45 \pm 17.2$  years in men;  $p = 0.2$ ). For IE of the left heart, mitral valve disease was significantly higher in women (35.8% vs. 25.9%;  $p = 0.042$ ). Infective endocarditis of the right heart was similar in both sexes (9.5% in women vs. 7.2% in men;  $p = 0.13$ ). The occurrence of IE on prosthesis was significantly lower in women (19.4% vs. 29.5%;  $p = 0.047$ ). Analysis of two groups did not show a significant difference in the incidence of peripheral embolism (23.6% in women vs. 16.5% in men;  $p = 0.11$ ) and in-hospital death (19% in women vs. 18.7% in men;  $p = 0.53$ ). Indication for valvular surgery was similar in both groups (33% in women vs. 29.5% in men;  $p = 0.23$ ).

#### Conclusion:

This descriptive study concluded that there is a difference in the location of IE according to sex without consequences in any particular clinical or prognostic outcomes.

Submission ID: 1155

### ATRIAL SEPTAL DEFECT MANAGEMENT IN THE ERA OF PERCUTANEOUS CLOSURE DEVICES

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Tunisia

#### Background:

Atrial septal defects (ASD) are among the most common congenital heart disease encountered at all ages. Nowadays, transcatheter closure of septum secundum atrial defects is the mainstay of treatment for patients with suitable defects. Nevertheless, there are defects that are nonamenable to this strategy in which surgery should be the appropriate option for closure

#### Aim:

Study the results of surgical and percutaneous techniques of closure of atrial septal defect

#### Material and method:

We reviewed the clinical course of 190 patients who underwent closure of atrial septal defect at Cardiology department of Sahloul Hospital between 2000 and 2020. The patients were assigned to either the device or surgical group depending on what treatment they received.

#### Results:

In our population, 71.1% were females. The mean age was 20.7 years with a minimum being 2 years old and a maximum being 69 years old. 14.2% had a history of repeated pulmonary infection. The most frequent symptom was exertional dyspnea which was present in 47.4% of all the patients. In the group who received percutaneous closure, the average size of the atrial septal defect was 21.1 mm with a minimum being 5 mm and a maximum being 39 mm. 66.4% had moderate right ventricle dilatation while 29.4% had severe right heart dilatation. The average of systolic pulmonary pressure was 36.9 mmHg before closure. The mostly used device was Amplatzer septal occluder in 70.4% of the patients in this group. 10.7% had a first temptation of percutaneous closure device but they had surgery at a second time. After a successful implantation, the average of peak systolic pulmonary pressure significantly decreased from 36.8 to 27.8 ( $P < 0.001$ ). Major complications occurred in 7.2% and embolization of the prosthesis was the most frequent complication

which occurred in 8 patients. For the group who underwent surgery, the average size of the defect was 32,5 mm which is much higher than the first group ( $P < 0.001$ ). Complications occurred in 8.5%. After surgery, the average of peak systolic pulmonary pressure significantly decreased from 38.6 mmHg to 28.1 mmHg ( $P < 0.001$ ). Residual shunt was non-significant in both groups.

#### Conclusion:

Both treatment modalities are safe and effective, with excellent outcomes. However, the percutaneous treatment has lower morbidity. These results support the fact that percutaneous treatment of atrial septal defects should be considered as the method of choice for treatment of ASD.

Submission ID: 1159

#### CARDIOVASCULAR RISK IN HEART FAILURE WITH MID-RANGE EJECTION FRACTION

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#### Introduction

Heart failure with mid-range ejection fraction (HFmrEF) is considered a new clinical entity that's still not well understood. HFmrEF patients represent a group with different clinical characteristics and heterogeneous outcomes.

The purpose of the study was to establish the clinical, therapeutic and prognostic profile of patients presenting HFmrEF and identify the predictive factors of mortality and rehospitalization.

#### Methods

This was a prospective, longitudinal and analytical study including 100 patients presenting new onset of HFmrEF, hospitalized in the adult cardiology department of La Rabta hospital from June 2018 to June 2019 with a 6 months follow-up.

#### Results

The mean age was  $65 \pm 12$  years with a sex ratio of 1.3. Hypertension (56%) was the most common cardiovascular risk factor. Dyspnea was present in (96%) of patients and chest pain in (45%) of patients. Atrial fibrillation was found in (39%) of patients. The etiologies of HF were: ischemic (48%), hypertensive (15%), valvular (14%), dilated cardiomyopathy (14%) and rhythmic (9%). Angiotensin converting enzyme inhibitors (ACEi) were prescribed for (86%) of patients, beta blockers (BB) for (82%). Myocardial revascularization and valve surgery were performed on (48%) and (10%) of patients respectively.

In-hospital and 6-months mortality were respectively 5% and 15%. The 6-months rehospitalization rate was 11% with an average rehospitalization time of  $50 \pm 40$  days. The 6-months MACE rate was 26%. During follow-up, surviving patients ( $n=85$ ) have presented a dynamic evolution of the LVEF marked by stability ( $n=60$ ), improvement ( $n=10$ ) or impairment ( $n=15$ ).

In multivariate analysis: age  $> 70$  years, arterial hypertension, ischemic etiology and anemia were independent predictors of mortality. NYHA stage III-IV dyspnea, history of chronic obstructive pulmonary disease and echocardiographic parameters of right ventricular impairment were associated with an increased risk of readmission.

#### Conclusion

HFmrEF is considered a distinct entity with specific characteristics, a dynamic evolution with possible transition from one type of HF to another and an unpredictable prognosis which needs a well characterized and individualized therapy.

Submission ID: 1169

#### CLINICAL CHARACTERISTICS OF PATIENTS WITH INFECTIVE ENDOCARDITIS

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#### Background

Infective endocarditis (IE) is a condition where the fields of cardiology and infectious diseases overlap making the initial presentation a mix of signs of infection, signs of cardiac involvement, and in a considerable number of cases signs of embolic events. Few recent papers studied the clinical characteristics of patients with confirmed IE.

#### Aim

The aim of our study is to determine clinical characteristics of patients with IE in sahloul department of cardiology during a period of 10 years.

#### Methods

Between January 2010 and December 2020, 74 patients were admitted to the sahloul cardiology department for IE using the modified duke criteria. Data was collected retrospectively from patient medical records. Follow-up evaluations were done with clinical and lab tests assessment at a yearly rate.

#### Results

Of the 74 studied patients 95.94% had low grade fever during 2 days prior to first medical contact; 29.72% of patients had grade III to IV dyspnea. Neurological loss of function was present in 13.51% secondary to embolic ischemic stroke while 16.21% of patients had chest pain.

Patients with anorexia and weight loss made up of nearly 30% of the total studied pool.

Physical exam data showed cardiac murmur in 78.37% of patients, signs of heart failure on the other hand were reported in 19% of cases for left heart failure, 19% for right heart failure and 14.86% for global heart failure.

On the electrocardiogram 13.5% of patients had atrial fibrillation one patient had complete heart block, 5.4% had left bundle branch block and 2.7% had right bundle branch block

#### Conclusion

The initial clinical presentation of patients with IE varies in the studied population with fever being the most frequent sign. Overall no real changes compared to prior studies have been found in the general clinical profile of patients with IE.

Submission ID: 1221

#### A CORONARY PERFORATION : ALWAYS A NIGHTMARE

ben ouanes sami, MEKKI NOUHA, BEN SAAD SAEB, AYOUN MEDDEB, KADDOUR HELA, GRIBAA RYM, SLIM MEHDI, HRAYECH AYMEN, BEN FARHAT SAMEH, NEFFATI ELYES

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#### Background

Coronary perforation is an uncommon but potentially life-threatening complication of percutaneous coronary intervention. In this case, we share our latest experience in the management of coronary perforation. A 70-year-old man, smoker, presenting with a NSTEMI. The EKG showed inverted T waves in the anterior leads. TTE showed a reduced ejection fraction estimated at 40%. The coronary angiogram revealed a significant calcified thrombotic lesions of the left main artery and the LAD with a slow flow and a critical lesion of the marginal. After anticoagulation with 5,000 Units of intravenous

heparin and a 30 ml intravenous injection of Tirofiban, the LM was wired with an ASAHI Soft guidewire through a 6 Fr XBC 4 guiding catheter. We proceed for a stenting from the ostium of the LM to the middle of the LAD. We also proceeded with a PTCA of the marginal. The patient tolerated well the procedure, the final angiographic control showed excellent results. Two hours after the procedure, the patient developed profound persistent hypotension. An immediate echocardiogram was performed at the bedside, showing a large concentric pericardial effusion with diastolic right ventricular collapse. The patient was taken emergently back to the cardiac catheterization laboratory where immediate pericardiocentesis revealed 400 cc of bloody fluid. He was also put on Norepinephrine at the dose of 4 mg/h and received blood and platelets transfusion. Repeat angiography revealed extravasation of dye from a the distality of the LAD indicating a type II/III coronary rupture. Through a left femoral access; catheterisation of the left main, guide wire in the distality of the LAD. We first proceeded by the inflation of respectively a 1.5 x 8, a 2.0 x 8, a 2.5 x 8 mm balloon for respectively 15, 25 and 40 minutes. The angiogram showed the persistence of the distal coronary perforation at every attempt. We then proceeded by advancing a part of a decoated stent through a coronary guidewire over a small balloon. The control angiogram revealed the persistence of the coronary perforation. We finally persuaded by advancing through a coronary guidewire the distal tip of a diagnostic catheter over an inflated balloon at the distal part of the LAD. The control angiogram showed a significant decrease in the extravasation of the dye. The patient underwent close monitoring after the PTCA, he is stabilised with continuous decreasing in the doses of vasopressors, He was discharged shortly after.

Submission ID: 1239

#### APPLICATION OF MEDICAL IMAGING IN DIAGNOSIS AND ASSESSMENT OF CARDIAC TUMORS (ABOUT 26 PATIENTS)

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Cardiovascular and thoracic surgery department of Sahloul, Tunisia

##### Introduction:

Cardiac tumors are a rare entity. About 80% of these tumors are benign and 70% of them are myxomas.

Transthoracic echocardiography is an excellent initial diagnostic technique to evaluate and diagnose cardiac masses. Computed tomography (CT) and Magnetic resonance imaging (MRI) are additional tools used for cardiac imaging and may provide useful information in addition to that obtained by echocardiography.

##### Material and Methods:

This is a retrospective, descriptive, mono-centric study including 26 patients admitted to the cardio-vascular and thoracic surgery department of CHU Sahloul Sousse between January 2012 and December 2020 for cardiac masses. We included: All patients diagnosed with cardiac tumors.

Only patients with tissue masses are included. Patients with cystic masses were excluded.

Different imaging modalities for pre-operative investigation and presumptive diagnosis were compared across different years.

##### Results:

We included 26 patients.

There were 21 benign primary lesions and five malignant lesions. Transthoracic echocardiography (TTE) was used in 100% of the cases, 92% as the

first imaging tool. Computed tomography and cardiac magnetic resonance were rarely the initial modalities applied (only two cases). Eighteen patients were submitted to cardiac surgery for tumor excision without further imaging modalities beyond echocardiography.

In seven cases two or three imaging modalities were used in conjunction for both diagnosis and assessment (TTE or TEE and

CT or CMR) mainly in order to differentiate between thrombus and myxoma or the determinate extension of the lesion.

##### Conclusion:

In contrast to primary cardiac tumors, which are less frequent and mostly benign in nature, the majority of intracardiac tumors are metastatic lesions

Analysis of characteristics by Transthoracic or transesophageal echography allowed classification of intracardiac masses. Tissue characteristics of intracardiac masses were also analyzed using CT or MRI in some cases.

Submission ID: 1241

#### CARDIOPULMONARY ARREST IN PRE-HOSPITAL IN THE ERA OF COVID)

Mahdi Zorgati, kais Mansouri, Sarra Soua, Dorra Loghmani, Roua Chouih, Hela Amara, Moussa Boudriga, Naoufel Chebili

SAMU 03 Sahloul, Tunisia

##### Introduction:

Survival in a cardiopulmonary arrest depends on several essential interventions whose sequence has been describing as a "Chain of Survival"

The urgent medical aid service (UMS) has acquired real expertise with prospective registers of Cardiopulmonary arrest (ACR).

The objective of this work was to study the epidemiological and socio-demographic profile of victims 'cardiac arrest and to specify the different treatment times in the COVID era by comparing it to the pre-COVID era.

##### Materials and methods:

This is a prospective study carried out over a period of 3 months including 65 patients; cardiac arrest victim's requiring the intervention of our resuscitation teams. Compared to an ACR registry conducted in 2016. The clinical and socio-demographic data, the circumstances of occurrence, the delays in pre-hospital care were analyzing by SPSS 20.

##### Results:

A male was noting in both studies with 60.8% in 2016 and 69.2% in 2021; the same average age was founding in the two studies (65 years) with extremes ranging from 27 to 91 years.

Active covid-19 pneumonia was founding in 6.8% of cases.

The alert was madding in 69.2% of cases by an individual. The reason for the appeal was in 53.1% of the calls are relating to unconsciousness state; in 26.6%, there is recognition of cardio-respiratory arrest.

The occurrence of an ACR in front of a witness in 77.4% of cases, only 23.7% of these witnesses are trained to provide CPR of satisfactory quality, and it is only started in 20% of cases.

The decision not to resuscitate is taking in 58.1% of the situation in connection with a prolonged no-flow in 85% of cases. In 2016, CPR was started in 72.5% of cases.

For resuscitation times: MCE / ACR start times: 3 minutes in 2016 against 9 minutes in 2021. Recovery from stoppage is in 3% of cases, with a 24-hour survival of 3% and 100% death at one month against 4.5% recovery in 2016 and 2.6% survival on arrival at the hospital. A 6-month survival is being assessed for the 2021 study.

##### Conclusion:

In Tunisia, despite the campaigns of sensitization and training only 23.7% of these witnesses are trained to provide quality CPR satisfactory, and it is only started in 20% of cases. The presence of a defibrillator is founding in 3.2% of situations without ever being use. During the covid-19 pandemic there is an increase in the causes of hypoxic arrest to 40.7%



Submission ID: 1247

### ACUTE CORONARY SYNDROME WITH ELEVATION OF ST SEGMENT IN THE COVID-19 ERA

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SAMU 03 Sahloul, Tunisia

#### Introduction:

chest pain is a common motif for consultation. It is known that mortality due to myocardial infarction correlates directly to the time of treatment initiation.

The regulation room of our emergency medical service has an essential role in diagnosing myocardial infarction, identifying its potential risk of complication and indicating right therapies with rapid referral to the closet technical platform when indicated.

The reperfusion strategy is chosen according to chest pain delay and to catheterization room availability.

#### The aim:

To investigate the impact of the third wave of COVID-19 on delays between symptoms' onset and the first medical contact (FMC) in patients with myocardial infarction with ST segment elevation (STEMI)

#### Materials and Methods:

All regulation calls for STEMI during the third wave of COVID-19 were compared to a control group of patients from the same period in 2018 before the pandemic.

First, we investigated the difference in SCA incidence between the two periods.

Secondly, we compared delays between symptom onset and FMC between the COVID-19 period group and the control group and the same for reperfusion treatment delays.

#### Results:

An increase in the overall incidence of ACS was noted during the third wave of the COVID-19 pandemic compared to the control period. Delays between symptom onset and FMC were longer during the COVID-19 period compared to the control period (112 min vs 60 min,  $p = 0.049$ )

Concerning reperfusion strategies, the prevalence of thrombolysed STEMI was higher during COVID-19 period compared to the control period (40% vs 30%,  $p?$ )

The prevalence of patients receiving primary angioplasty was higher in the COVID-19 period group (46%) compared to the control group (28.9%).

#### Conclusion:

The mean time between symptom onset and FMC was significantly longer during the COVID-19 period compared to the control period. Further investigations are needed for developing policies aiming the improvement of delays in care delivered to patients with STEMI.

Submission ID: 1249

### INFECTIVE ENDOCARDITIS SECONDARY TO A RESTRICTIVE VENTRICULAR SEPTAL DEFECT

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#### Introduction:

Infective endocarditis (IE) secondary to a restrictive ventricular septal defect (VSD) is rarely observed.

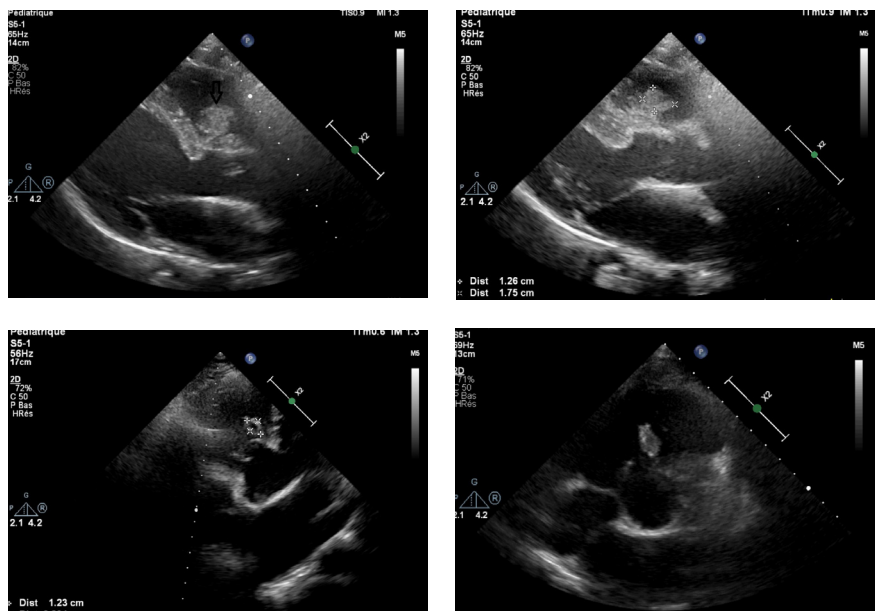
We report the case of a 15 year-old patient with an underlying congenital restrictive VSD who presented with fever chills and fatigue for 15 days prior to hospitalization. Examination showed a temperature of 38 , a blood pressure of 120/60mmHg, a heart rate of 100bpm, a VSD holosystolic murmur, a respiratory rate of 20 breaths per minute, and an oxygen saturation of 100% in room air. Transthoracic echocardiography (TTE) revealed a large vegetation of 15\*12 mm on the right ventricle side with a 5 mm perimembraneous VSD with a left to right shunt. The mitral, aortic, tricuspid, and pulmonary valves were morphologically and functionally normal. The LVEF was normal.

The computed tomography confirmed the presence of the vegetation and did not show any secondary locations.

Enterococcus spp grew in the blood culture. The patient was put on a triple prolonged intravenous antibiotic therapy.

In our center, we treat no less than two to three patients per year for IE with an underlying restrictive VSD. Although the actual last guidelines do not recommend the closure of restrictive VSD, these hemodynamically insignificant defects can predispose to IE.

Hence, interventions should be discussed case by case, to prevent such complications, especially in developing countries with poor socio-economic conditions.



Submission ID: 973

### COMPARISON OF SURVIVAL FOLLOWING DIFFERENT TREATMENT MODALITIES OF IN-STENT RESTENOSIS

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#### Introduction

In-stent restenosis (ISR) is the narrowing of a stented coronary artery lesion. Various revascularization modalities exist. In our study we aimed to describe outcomes following each ISR treatment modality.

#### Methods

All patients admitted to our department and treated for ISR, from January 2017 to December 2018 were included. The choice of ISR revascularization strategy was left to the operator. Patients were followed up for a median period of 24 months. Major cardiac events (MACEs) were defined as the occurrence of cardiovascular death, myocardial infarction, target vessel revascularization or target lesion revascularisation

#### Results

A total of 116 patients were included. 41,1% were treated with drug-eluting stent (DES), 31,9% with drug-eluting balloon (DEB), 13,8% underwent surgery (CABG) and 12,7% received medical treatment (MT) only. Figure 1 shows survival curves according to the strategy of ISR treatment. A log-rank type test (Mantel-Cox) showed a significant difference of survival following different ISR treatment modality with  $p=0.002$ . We reported similar MACEs rates following the use of DES and DEB: 33.3% and 40.5% respectively,  $p=0.468$ . We reported MACEs in two patients only among 16 who had undergone CABG which is significantly less compared with patients treated with DES or DEB (12.5% vs 36.5%,  $p=0.044$ ). MACEs rates were higher in the group of patients who received medical treatment alone compared with patients treated with PCI or CABG (73.3% vs 29.7%,  $p<0.001$ ).

#### Conclusion

Our results showed that CABG was the safest strategy of ISR treatment. Patients who received MT only were not eligible for any mean of revascularization, which explains the lower survival rate noted in our study.

Submission ID: 1017

### FALSE AORTIC ANEURYSM POST TEVAR : EXCEPTIONAL FATAL COMPLICATION

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#### Background:

Endovascular treatment of the thoracic aorta (TEVAR) has become the gold standard for the management of aneurysms of the descending thoracic aorta in recent years.

Nevertheless, regular follow-up is required in this type of procedure in order to detect complications, which are essentially endoleaks, retrograde dissections, prosthesis migration, aneurysmal dilatations, etc.

False aneurysms post TEVAR are an exceptional complication rarely described.

#### Methods:

We report the case of a 47-year-old woman with chronic hemodialysis who underwent aortic stent-grafting for a saccular aneurysm of the descending thoracic aorta with good angiographic

result and successful deployment. The patient was followed up regularly for possible complications at one year postoperatively.

She presented three years later in an emergency room with an altered general condition in a febrile context. A thoracic angioscan was performed because of persistent hypotension and tachycardia. It revealed a false saccular aneurysm of the aortic arch measuring 8.6 X 10 mm extended over 10 cm to the descending thoracic aorta, which is the site of the stent graft. CT signs of pre-rupture were associated with it.

#### Results:

The patient was immediately admitted to the intensive care unit for preoperative conditioning. She died at H1 of intensive care.

#### Conclusion:

TEVAR is currently the treatment of choice for aneurysms of the descending thoracic aorta.

However, it requires strict and regular monitoring by imaging in order to detect possible complications, sometimes fatal, such as false aneurysms which are exceptionally described.

The pathophysiology of this complication is similar to that of retrograde dissections originating from the anchor hooks due to the fragility of the connective tissue often found in thoracic aortic pathologies. Because of the rarity of this complication, the therapeutic course of action is not yet clearly codified.

Submission ID: 1024

### HEART AND CANCER: PREDICTORS OF CARDIOTOXICITY BY CHEMOTHERAPY

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#### Background:

Cancer treatment today uses a combination of conventional chemotherapy, targeted therapy, radiotherapy, and immunotherapy to prolong life and achieve recovery. The cardiotoxicity of these anticancer agents can lead to significant complications such as heart failure, myocardial ischemia/infarction, hypertension, thromboembolism and arrhythmias.

In our study, we review the predictive factors of developing cardiotoxicity caused by chemotherapeutic agents.

#### Method:

187 patients (followed for neoplasia), consulted in the cardiology department of the main army, and benefiting from a cardiac consultation and echocardiography before chemotherapy were included in this analysis.

#### Results:

The mean age of our patients was 51.2 years with a female predominance (sex ratio =0.45). We found : 4.1% of our patients were smokers, 18% were hypertensive, 12.4% were diabetics and 4.1% were dyslipidemic.

A significant positive correlation was found between the number of risk factors and the occurrence of an alteration in LV function ( $p=0.02$ ), and similarly, the more risk factors the patient has, the higher the level of risk of developing heart failure ( $p=0.008$ ).

Moreover, no correlation was found between the association of radiotherapy with chemotherapy and the occurrence of an alteration of the LV function.

#### Conclusion:

Cardiotoxicity related to cancer treatments is important to recognize because it can have a significant impact on the overall prognosis and survival of cancer patients. It is likely to remain an important challenge for cardiologists and oncologists in the future.

Submission ID: 1026

### CLINICAL CHARACTERISTICS OF PATIENTS UNDERGOING TAVR

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Tunisia

#### Background:

Percutaneous or transcatheter aortic valve replacement (TAVR) represents a real revolution in the treatment of symptomatic patients with severe and high-risk calcified aortic stenosis (ACR) or having a surgical contraindication.

#### Methods:

This is a retrospective single-center study whose objective was to study the clinical characteristics of 51 patients implanted with percutaneous aortic bio prosthesis in the Military Hospital of Tunis, conducted between November 2013 and February 2020.

#### Results:

Our population was made up of 29 men or 55% and 23 women or 45% with a sex ratio of 1.21 for the entire workforce and an average age of  $78.88 \pm 8$  years. Most of the patients were overweight with an average body mass index of  $27.18 \text{ kg} / \text{m}^2$ .

Regarding cardiovascular risk factors, thirteen patients were smoking, 40 hypertensive (83%), 23 diabetics (48%) and 21 dyslipidemia (44%).

For other comorbidities, 43% of patients were anemic and 18 patients had pulmonary pathologies (COPD or asthma) with two cases at long lasting oxygen. One patient had renal failure on dialysis and 4 patients had a history of neoplasia in remission. Coronary artery disease was observed in 22 cases, or 43% of the population.

Concerning the operative risk scores, twelve (24%) patients had a greater EUROSCORE than 20%, and 28 (55%) patients with an STS score greater than 10%.

#### Conclusion:

TAVR can treat effectively symptomatic aortic stenosis in patients at very high surgical risk or with surgical contraindication. The evaluation of the clinical characteristics of the patients proposed for TAVR makes it possible to better target patients likely to fully benefit from this therapy.

Submission ID: 1117

### COMPARISON OF SHORT- AND LONG-TERM MORTALITY OF ACUTE ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION AND NON-ST-SEGMENT ELEVATION ACUTE CORONARY SYNDROME IN PATIENTS

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#### Introduction:

Available data comparing long-term prognosis according to the type of coronary syndrome (ACS) are rare, old and sometimes contradictory.

#### Purpose:

Our objective is to compare in-hospital, short-term and long-term mortality in patients with STEMI vs NSTEMI ACS.

#### Methods:

All patients admitted for ACS in our cardiology department, consenting, between January 2018 and July 2019 with 12 months follow-up.

#### Results:

A total of 397 patients with ACS of whom 257 (64.6%) STEMI and

140 (35.4%) NSTEMI were included in the study.

In-hospital mortality rates were 8.9% for patients admitted for STEMI and 1.4% for NSTEMI ( $p=0.006$ ).

At 30-day follow-up, mortality rates were 1.4% and 0.8% ( $p = 0.09$ ) for STEMI and NSTEMI patients, respectively.

At 12-month follow-up, mortality rates were 3.5% and 4.5% ( $p = 0.001$ ) for STEMI and non-STEMI patients, respectively.

#### Conclusion:

STEMI patients have a worse in-hospital prognosis than non-STEMI patients, due to the prevalence of cardiogenic shock in this group of patients and the very long delays in management ( Mean Pain-PPCI delay= 545 minutes) . Within 30 days of ACS, patients in both groups had a similar prognosis. However, at 12 months, NSTEMI patients have a poor prognosis compared to STEMI patients, due to their advanced age and more prevalent comorbidities/risk factors compared to STEMI patients.

Submission ID: 986

### HYPERTROPHIC CARDIOMYOPATHY IN CHILDREN: ETIOLOGY AND CLINICAL CHARACTERISTICS

Ben Othman Rihab, Hakim Kaouther, Msaad Hela, Ghardallou Houda, Oueghlani Khalil, El Bardi Mouad, Karmous Rahma, Ftini Syrine, Ouarda Fatma

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#### Background:

Hypertrophic cardiomyopathy (HCM) represents the second most common cardiomyopathy in the pediatric population. The etiologies and phenotypes of HCM are more varied in children, but few data are available in literature. The aim of our study was to identify the clinical characteristics and the different etiologies of HCM in children in pediatric cardiology department of the Rabta hospital over two decades.

#### Methods:

This retrospective study performed in the pediatric cardiology department of the Rabta hospital enrolled all patients aged under 18 years old, hospitalized for hypertrophic cardiomyopathy during January 1999 to July 2020. We studied etiological and clinical features of these disease.

#### Results:

Fifty-seven children were included during the last twenty years. The median age at diagnosis was 1,4 years, 46% of patients were aged under one year old. The sex ratio was 1,27. The male predominance was marked in children over 10 years of age. The diagnosis of idiopathic HCM was made in 60% of patients, divided into familial HCM in 28% and sporadic HCM in 32% of patients. Inborn error of metabolism (IEM) was found in 25% of patients: Glycogen storage disease type III and Pompe disease were the most common disorders. The diagnosis of RASopathy was made in 14% of patients: seven patients was diagnosed with Noonan Syndrome and a patient was diagnosed with Costello syndrome. 2% of patients had neuromuscular disease (Friedreich's ataxia). Twenty-five patients (48%) had a first or second-degree.

Relative with HCM based on family history; of these, 64% had an idiopathic HCM. Heart failure signs were present in 9% of patients, they were more common in patients presenting in infancy. Non sustained ventricular tachycardia was found in 9% of patients. Concentric hypertrophy was present in 58% of patient, especially in patients with IEM. 92% of patients with IEM had non obstructive HCM.

#### Conclusions:

These results suggest that HCM in children is a heterogenous disease in terms of its age of presentation, aetiology and clinical presentation. An improved understanding of the relationship between different aetiologies and clinical presentation will facilitate the treatment and follow-up of these patients.

Submission ID: 990

### CONGENITAL STRUCTURAL HEART DISEASES ASSOCIATED WITH CORONARY ABNORMALITIES

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#### BACKGROUND:

The anomalies of the coronary arteries are very varied and rare; they can concern the birth, the course or the termination of the coronary arteries. These coronary abnormalities can be isolated or associated with structural congenital heart diseases (CHD).

#### AIM:

The aim of this work was to describe patients with CHD and coronary abnormalities, their clinical and evolutionary particularities.

#### MATERIAL AND METHOD:

Between 1998 and 2017, 10 patients with a coronary anomaly of birth or path associated with CHD were collected. Were retrospectively analyzed: the circumstances of discovery, the ECG, the chest X-ray, data from the TTE, the coronary angiography, as well as the long-term follow-up.

#### RESULTS:

10 patients with a coronary anomaly of birth or path associated with CHD were collected. The mean age of discovery of coronary anomalies was 14 months (ranging from 1 day to 4 years). We noted a male predominance (8 boys). All the circumstances in which coronary anomalies were discovered were fortuitous during an angiogram performed for diagnostic or therapeutic purposes of the associated underlying heart disease. Conotruncal heart diseases was the most common. Tetralogy of Fallot was the most common CHD (4 children), followed by VSD (in 3 children), complex heart disease in 2 children and simple TGV in one child. All the children had an aortic coronary connection defect of which 4 had an abnormal birth from the opposite sinus, 3 had a left coronary artery from the posterior non-coronary sinus, 2 children had an LAD which originated from the right coronary, and multiple ostium cases. 3 patients had an anomaly of the proximal coronary path of which 2 had an inter-aortico-pulmonary path and one child had a retro-aortic path. At TTE, LVEF was conserved in 9 cases. The diagnosis of birth defects and coronary artery disease were confirmed by angiography in all cases. A CCT has only been performed in one child. The mean duration of follow-up was 6 years. All CHD were treated. Coronary anomalies were respected, and we decided to monitor patients. Long-term follow-up showed that only one child had NYHA stage II dyspnea (the one who had a complex heart disease: single ventricle with malposed vessels and pulmonary stenosis). The other children were asymptomatic.

#### CONCLUSION:

Coronary birth anomalies are varied. In our work, the birth defect of the opposite sinus was the most observed. Conotruncal heart disease was the most associated with coronary anomalies.

Submission ID: 999

### CLINICAL, ELECTRICAL AND ANGIOGRAPHIC CHARACTERISTICS OF YOUNG PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

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UHC Charles Nicolle, Tunisia. UHC Farhat Hached, Tunisia

#### Background:

Myocardial infarction's prevalence among the young adults is increasing day by day. The aim of our study was to assess the clinical, electrical and angiographic characteristics of young patients

with acute myocardial infarction and to describe the prevalence of in-hospital complications.

#### Methods:

From January 2014 to May 2017, we retrospectively studied data of patients with acute myocardial infarction younger than 45 years old in the department of cardiology of Charles Nicolle hospital of Tunis.

#### Results:

We enrolled 108 patients in the study. The prevalence of myocardial infarction in young patients was 8.5%. The mean age was 39.5 ± 5.5 years with a sex-ratio of 1.1. The most frequent cardiovascular risk factors were smoking (88%) and dyslipidaemia (51.9%). We reported 75 cases of ST segment elevation myocardial infarction. Primary angioplasty was performed in 41.3% of cases while lytic therapy was administered for the rest of the patients. It was successful in 75% of cases. Among 33 patients who presented with non-ST segment elevation myocardial infarction, percutaneous coronary angioplasty was performed in 60.6% of patients while 15.2% have undergone coronary artery bypass surgery and 24.2% received medical treatment only. In-hospital complications occurred in 39.8% of cases. In-hospital mortality was 1.9 %.

#### Conclusion:

Acute myocardial infarction in the young represents a serious health problem. Primary preventive measures aimed at preventing our youth from adopting tobacco use and developing dyslipidemia should be implemented to delay and even to avoid the onset of coronary artery disease.

Submission ID: 1004

### ENDOCORONARY STENT THROMBOSIS: IN-HOSPITAL MORTALITY AND ITS PREDICTORS

Fadwa Omri, Mejdi Ben Messaoud, Skander Bouchnag, Ammar Dhoubi, Mahdi Boussaada, Nidhal Bouchahda, Marouen Mahjoub, Majed Hassine, Fethi Betbout, Habib Gamra

#### Introduction:

Stent thrombosis (ST) is a relatively infrequent event after percutaneous coronary intervention, though it remains one of the most feared complications given the associated morbidity and mortality.

#### Materials and methods:

It's a monocentric, retrospective, descriptive and analytic study including 40 patients hospitalized for angiographically definite ST in the Cardiology « A » Department of Fattouma Bourguiba University Hospital, during the period between January 1st 2013 and November 30th 2019.

#### Objectives:

The objective of our study was to specify the incidence and the predictors of in-hospital mortality related to ST.

#### Results:

In-hospital mortality occurred in 25% of cases.

The incidence of in-hospital mortality was higher in the case of early ST (28.6%) compared to late and very late ST (21.0%), with no significant difference ( $p = 0.707$ ).

During the years of study, in-hospital mortality was fluctuated. This variation is statistically significant ( $p = 0.001$ ).

The independent predictors of this mortality were: cardiopulmonary arrest at admission ( $p = 0.015$ ), femoral approach ( $p = 0.007$ ), diseased coronary distality ( $p = 0.015$ ), pre- ( $p = 0.014$ ) and post-procedural ( $p < 0.001$ ) TIMI 0 flow, use of adrenalin ( $p < 0.001$ ) and intubation ( $p < 0.001$ ).

#### Conclusion:

ST is a rare complication of PCI in our current practice, but is associated with a heavy in-hospital mortality. A better understanding and management of ST in our context are necessary to improve its prognosis.

Submission ID: 1016

### DETERMINANTS OF RETURN TO WORK AFTER ACUTE CORONARY SYNDROME

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#### Background:

Acute coronary syndrome (ACS) is a serious disorder causing strong anxiety in patients of working age. It is increasingly occurring in younger people. So greater emphasis needs to be placed on this working-age population because of its economic and social implications. Return to work (RTW) has been relatively underestimated over the past decade in favor of more subtle measures of quality of life.

#### Methods:

50 participants were recruited after hospitalization for a first episode of ACS from June 2018 to December 2019. The study population was divided into RTW group (Patients who returned to work within 6 months) and non-RTW group (Patients who did not return to work within 6 months) for comparison of socio-demographic, clinical, occupational and psychosocial characteristics.

#### Results:

The mean age was  $51.92 \pm 6.4$ . The study population was made mainly by men (90%) with no statistical difference between the RTW group and the non-RTW group ( $p=0.79$ ). 48% were employees and 52% were self-employed. The majority (87.5%) of patients in the non-RTW group were self-employed and 54% of patients in the RTW group were employees. The two groups differed significantly regarding employment status ( $p=0.05$ ). Manual workers were more frequent than non-manual workers (84 vs. 16%;  $p=0.079$ ). The mean regular working hours per week was  $52.41 \pm 18.48$  in the RTW group and  $64.38 \pm 18.26$  in the non-RTW group ( $p=0.102$ ). The totality of patients was married and 72% of them had 1 to 3 children in charge. Smoking (76%), Diabetes (43.1%), dyslipidemia (35.3%), and hypertension (37.3%) were the major cardiovascular risk factors in our population. No significant difference was found between the non-RTW group (NSTEMI = 12.5%, STEMI = 87.5%) and the RTW group (Unstable angina = 7.1% NSTEMI = 23.8%, STEMI = 69%) according to the admission diagnosis ( $p=0.527$ ). Non-RTW group had a significantly higher rate of in-hospital complications than the RTW group (37.5% vs. 7.1%;  $p=0.044$ ). There was no significant difference between the two groups regarding treatment modalities ( $p=1$ ). At one, three, and six months, 48%, 68%, and 84% of patients, respectively, returned to work. NSTEMI and STEMI patients had a later RTW compared to UA patients ( $p=0.229$ ). 64.3% of patients had a full RTW, whereas, 15 patients (35.7%) were the subject of workstation organization. The work organization concerned work time (reduced working hours) (6.7%), work station (33.3%) or both (60%).

Submission ID: 1023

### DOES A MYOCARDIAL CLEFT SUPPORT THE DIAGNOSIS OF EARLY HYPERTROPHIC CARDIOMYOPATHY IN CASE OF SYNCOPE WITH MINIMAL POSTERIOR HYPERTROPHY?

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#### Introduction:

Myocardial clefts are congenital abnormalities of myocardial fibers described as fascicular disorders in healthy subjects, hypertensives, and in cases of early hypertrophic cardiomyopathy.

It is an under diagnosed entity with unknown clinical consequences.

#### Case report:

We report the case of a 23-year-old man with no medical history who consulted for syncope causing an occipital head injury.

The examination showed an occipital bruise, no orthostatic hypotension, no pause and no drop in blood pressure on carotid sinus massage with an appropriate oculo-cardiac reflex. Cardiopulmonary auscultation was normal. The rest of the exam was without any particularity.

EKG was normal.

Cerebral CT was normal.

TTE shows preserved LVEF at 60%, hypertrophy of the posterior wall at 13 mm and of the posteromedial pillar with slightly dysplastic mitral valves without stenosis or regurgitation.

A stress test and a rhythmic holter were performed without abnormalities.

Tilt-test showed a mixed response with a predominantly cardio-inhibitory component.

An MRI was requested, questioning the left ventricular hypertrophy and describing an inferior mid-ventricular myocardial cleft variant facing the VD-VG junction.

#### Conclusion:

The authors intend from this observation to study the clinical, radiological and evolutionary aspects of myocardial clefts and to emphasize the interest of follow-up in this setting.

Submission ID: 1025

### INFECTIVE ENDOCARDITIS ON DUCTUS ARTERIOSUS: A MYTH OR A REALITY?

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#### Introduction:

The occurrence of infective endocarditis on a patent ductus arteriosus is a rare complication nowadays, but it remains a serious complication to be feared.

#### Case Presentation:

We report the case of a 10 year old female child with no medical history who consulted for weight loss. On examination, the patient was hypothermic and pale. Cardiac auscultation revealed a continuous left subclavicular murmur without signs of heart failure. Biological workup showed a Hemoglobin of 6.6 g/dl, White Blood Count of 12060 with a predominance of neutrophils and C-Reactive Protein level was 339 mg/l. An echocardiography (TTE) revealed a large patent ductus arteriosus with exclusive left-right shunt and a flow rate of 4.8 m/s along with vegetations on the trunk of the pulmonary artery in front of the ductus arteriosus and on the isthmus. The patient was put on antibiotic therapy for 40 days with favourable course. The follow-up TTE showed the disappearance of the vegetations.

#### Conclusion:

Infective endocarditis on ductus arteriosus is a rare complication, and may be averted by percutaneous closure of the ductus arteriosus.

Submission ID: 1060

**FACTORS ASSOCIATED WITH LOW-FLOW IN RHEUMATIC MITRAL STENOSIS (MS) PATIENTS**

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**Background:**

Stroke volume (SV) raised enthusiasm in the early investigations of rheumatic MS pathophysiology and was considered as a key component triggering dyspnea. Given the discrepancies uncovered in later studies, its importance was later downgraded.

Yet low-flow is present in a non-negligible number of MS patients and new entities were introduced such as low-flow low-gradient MS.

Novel echocardiographic techniques allowing subclinical study of left atrial (LA) and ventricular contractility represent a promising tool in the study of the determinants of SV.

**Objective:**

To assess correlations between LA reservoir function (LASr) and global left ventricular longitudinal strain (LVS) determined by 2D Speckle Tracking Echocardiography (STE) and stroke volume index (SVI).

**Methods:**

We performed trans-thoracic echocardiography (TTE) in a cohort of patients with rheumatic MS. Basic 2D and doppler parameters were recorded such as mean trans-mitral gradient (MTMG), mitral valve area (MVA) with 2D planimetry and pressure half time (PHT), maximal Tricuspid Regurgitation Velocity (TRVmax). Studied parameters represent the mean of three consecutive cardiac cycles.

LASr data was obtained on a dedicated 4C view with STE technique. LVS was generated based on the 3 basic apical views. A low-flow state was defined as an SVI  $\leq$  35 ml/m<sup>2</sup>.

**Results:**

195 patients were included between February 2018 and October 2021.

We divided our cohort into two groups: group I with SVI  $\leq$  35 ml/m<sup>2</sup> and group II with SVI  $>$  35 ml/m<sup>2</sup>.

There was not a significant difference in terms of age (49.8  $\pm$  12 vs 51.6  $\pm$  10 yrs,  $p=0.3$ ), sex (70.7 vs 72.2% were female,  $p=0.8$ ) and history of atrial fibrillation (67.4 vs 55.7%,  $p=0.09$ ).

2D MVA was significantly lower in group I (1.22  $\pm$  0.4 vs 1.43  $\pm$  0.5 cm<sup>2</sup>,  $p=0.003$ ). Surprisingly, MVA determined with PHT did not significantly differ (1.43  $\pm$  0.6 vs 1.39  $\pm$  0.4 cm<sup>2</sup>,  $p=0.5$ ).

The incidence of severe dyspnea was (44.3 vs 44.4%  $p=0.9$ ).

TRVmax levels (3.23  $\pm$  0.6 vs 3.07  $\pm$  0.6 m/s,  $p=0.14$ ) were comparable.

Group I had significantly higher MTMG (12.1  $\pm$  7 vs 9.8  $\pm$  4 mmHg,  $p=0.01$ ).

LVS and LVEF were significantly lower in low-flow patients: (-15  $\pm$  4 vs -18  $\pm$  2%,  $p<0.001$ ) and (61.1  $\pm$  8 vs 64.2  $\pm$  5%,  $p=0.04$ ) respectively.

LASr was higher in normal flow patients but did not reach statistical significance. (9.5  $\pm$  7 vs 11.5  $\pm$  6%,  $p=0.062$ ).

**Conclusions:**

MVA, LVS, and LVEF were significant associates of low-flow state in MS patients.

LA reservoir function was not significantly correlated to SVI.

Submission ID: 1065

**IMPACT OF ACUTE HYPERGLYCEMIA AFTER ANGIOPLASTY FOR ACUTE MYOCARDIAL INFARCTION**

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**Introduction:**

Hyperglycemia (HG) has been shown to be a powerful predictor of worse outcome after ST segment-elevation myocardial infarction (STEMI).

**Aim:**

Investigate the relationship between acute HG and patient outcome after primary or rescue angioplasty for STEMI.

**Methods:**

We retrospectively included 399 patients who underwent revascularization for STEMI. We compared intrahospital outcomes of the groups of patients with HG (HG+) with those without HG (HG-) and outcomes of diabetic with non-diabetic in the HG+ group. Plasma glucose was measured at hospital admission. HG was defined as plasma glucose  $>$  11 mmol/L (198 mg/dL).

**Results:**

Among the overall population, 37.6% patients had HG. They were more frequently women with a more frequent history of diabetes and dyslipidemia. Procedural success was significantly lower in the HG group (86% vs 92%,  $p=0.05$ ) with lower rates of ST segment resolution at 24 hours (47.3% vs 61.4%,  $p=0.006$ ). Intrahospital outcomes were worse in the HG group as attested by a higher mortality (20% vs 10.4%,  $p=0.008$ ), higher late heart failure (32% vs 18.1%,  $p=0.001$ ), more frequent ventricular arrhythmias (16% vs 6.8%,  $p=0.01$ ) and atrial fibrillation (9.3% vs 4.4%,  $p=0.05$ ). Those outcomes were similar in the HG group regardless of the diabetic status. In non-diabetic patients ( $n=260$ ), HG was associated with larger infarct size ( $p=0.001$ ), more adverse outcome ( $p=0.009$ ) and the HbA<sub>1c</sub> was associated with one year mortality ( $p=0.02$ ).

Predictive factors for intrahospital mortality in the overall cohort were: procedural failure (OR : 4.76 ; 95% CI [1.65 - 13.7] ;  $p=0.004$ ), heart failure at presentation (OR : 9.75 ; 95% CI [4.14 - 22.87] ;  $p<0.001$ ), non ST regression at 24 hours (OR : 2.19 ; 95% CI [1.08 - 4.445] ;  $p=0.029$ ), anemia (OR : 4.22 ; 95% CI [2.06 - 8.63] ;  $p<0.001$ ), high creatinine levels (OR : 1.09 ; 95% CI [1.03 - 1.14] ;  $p=0.001$ ), high glycemia (OR : 2.66 ; 95% CI [1.2, 5.9] ;  $p=0.016$ ). Diabetes did not predict intrahospital mortality ( $p=0.64$ ).

**Conclusion:**

In patients with STEMI, HG is an important predictor of worse outcomes with an increasing mortality risk even beyond 11 mmol/L. In non-diabetic patients, both elevated admission glucose and HbA<sub>1c</sub> levels were associated with adverse outcomes. These results suggest the usefulness of glycemia assessment in the setting of STEMI even in non-diabetic and the beneficial effect of strict glycemetic control.

Submission ID: 1073

**CONTRIBUTION OF BIOMARKERS (TROPONIN AND NT-PRO BNP) IN THE EARLY DETECTION OF CARDIOTOXICITY INDUCED BY CHEMOTHERAPY**

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**Background:**

The seriousness of the cancerous disease has led to the acceptance of side effects that would be considered prohibitive for other pathologies. Cardiotoxicity remains the most disabling complication.

**Aim:**

Early detection of myocardial involvement, before left ventricular ejection fraction deterioration, based on iterative measurement of biomarkers.

**Materials and Methods:**

This is a descriptive study carried out at the cardiology department of Farhat Hached university hospital in Sousse, and this during the period between January and August 2019. One hundred patients treated by cardiotoxic CT for any type of cancer combined dosage of troponin and NT pro BNP before and three weeks after the first course of chemotherapy was performed.

**Results and Discussion:**

The mean age of the study population was  $45.9 \pm 7.9$  years. The level of troponin was zero in all our patients before their first treatment of CT. We set the BNP positivity threshold at 100 pg / ml. We noted a significant elevation of troponins in 9 patients distributed as follows: Two patients presented with ECG changes associated with chest pain. Coronary angiography was postponed due to severe anemia. One patient developed moderate abundance of pericardial effusion. diagnosis of pulmonary embolism was confirmed in another one. Three patients were diagnosed with acute renal failure or sepsis. We noted an increase in BNP in 6 patients: Two patients (33.3%), one related to a degradation of LVEF to 38% and the second with a decrease in LVEF but less than 10%. One patient (16.6%) who presented with palpitations with several supraventricular extrasystoles on the ECG. In 3 patients (50%) work-up was requested which included a determination of renal function, an infectious work-up and a review of the extensive of the underlying neoplasia.

**Conclusion:**

Dosage of troponin and BNP cannot replace LVEF measurements, but it is a diagnostic and prognostic element that takes its place in the overall follow-up of cancer patients.

Submission ID: 1091

**IMPACT OF CENTRAL VENOUS PRESSURE ON MORTALITY IN PATIENTS ADMITTED FOR SHOCK**

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**Background:**

Central venous pressure (CVP) between 8 and 12 mmHg was one of the objectives in the management of patients in septic shock. The impact of high CVP on mortality in cardiogenic shock could be pejorative due to visceral congestion. Furthermore, the threshold value of PVC remains controversial. We aimed to determine the impact of CVS  $>10.5$  mmHg on the mortality of patients admitted for shock (EDC).

**Methods:**

This is a retrospective study conducted in the intensive care unit of the university hospital Tahar Sfar of Mahdia (Tunisia) between February 2017 and October 2018 including all patients admitted for shock with a CVS measurement on admission. Two groups were individualized: Group (G1): High CVP  $> 10.5$  and Group (G2): Low CVP  $\leq 10.5$ . The CVP threshold was chosen based on the literature data. The collected parameters were: demographic characteristics, co-morbidities, SAPSII gravity score, shock mechanism, PVC on admission, use of mechanical ventilation (MV), length of stay, and mortality.

**Results:**

During the study period, 62 patients (mean age  $63 \pm 15$  years, and

mean SAPSII of  $54 \pm 16$ ) were included. Cardiogenic shock was the most common mechanism of shock (55%). MV was initiated on admission in 89% of patients. The mean CVP at admission was  $10 + 5$  mmHg. Overall mortality was 47%. Thirty-four patients had CVP  $\leq 10.5$  on admission. A CVP  $\leq 10.5$  was observed more frequently in patients admitted for septic shock while a CVP  $>10.5$  was more frequent in patients admitted for cardiogenic shock. There was no significant difference between the two groups of patients with or without CVS  $<10.5$  in severity scores, duration of VM and length of stay. Mortality was 53% in group G1 versus 39% in group G2 with  $p=0.28$ . Cardiac output was similar between the two groups.

In multivariate analysis, no factor was associated with mortality.

**Conclusion:**

Excess mortality was observed in patients in shock with CVP  $> 10.5$ . This result can be explained by the predominance of cardiogenic shock.

Submission ID: 1105

**FATAL ACUTE AORTIC SYNDROM**

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**Introduction:**

Sudden death secondary to cardiovascular cause is common. Acute aortic syndrome (AAS) represents one of the most dramatic cardiovascular emergencies, often fatal in the absence of adequate and prompt management. It is often secondary to inherited connective tissue disorders, trauma or high blood pressure.

The aim of our work was to report epidemiological peculiarities of fatal AAS and its medico-legal characteristics in order to deduce the necessary preventive healthcare measures.

**Methods:**

A descriptive and retrospective study including forensic autopsies that were performed for corpses after fatal AAS, in Department of forensic medicine of Monastir, during a period of 28 years (between 1993 and 2021). We included all fatal AAS cases grouping pathologies of thoracic and / or abdominal aorta that lead to death. These latter included: traumatic and non-traumatic aortic dissections (AD) as well as dissecting aortic aneurysms.

**Results:**

We collected 41 cases of fatal AAS including 32 cases of AD (6 of which were post traumatic) and 9 cases of dissecting aortic aneurysm. We found a male predominance with a sex ratio of 19.5 (39 men and 2 women). The mean victims' age was 54.93 years (16 - 76 years). A family-history of sudden cardiovascular death was found in only two cases (4.9%). Twelve victims (29.3%) had a personal history of high blood pressure, 11 were active smokers, 8 were chronic alcohol drinkers, and 4 were diabetic. We did not report genetic or inflammatory diseases. Death was preceded by prodromal signs in 56.1% of cases. These signs were mainly chest pain (12 cases) and discomfort (11 cases). Eight deaths were observed during physical activity (4 occurred during daily exertion, 2 occurred during labor and 2 were linked to sports activity).

At autopsy, we noted type AAD, the presence of a hemopericardium and hemothorax in respectively 68.3, 61, and 22% of cases. Complete aortic rupture was noticed in 47.5% of cases.

**Conclusion:**

Fatal AAS is an uncommon pathology, especially in young adults. His spontaneous prognosis is appalling. Optimizing its management with risk factors control is necessary to prevent the risk of sudden cardiovascular death.

Submission ID: 1116

### CLINICAL PARTICULARITIES, THERAPEUTIC STRATEGIES, AND MEDIUM-TERM OUTCOMES OF OSTIAL LEFT ANTERIOR DESCENDING CORONARY ARTERY STENTING

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#### Background:

The aim of our study was to define the epidemiological characteristics of this population, to highlight the technical difficulties of angioplasty, and to analyze their results in short and medium term.

#### Methods:

We had undertaken a retrospective, monocentric study of 76 patients treated and followed in the Cardiology Department of the Military Hospital of Tunis, between January 2014 and March 2017. Percutaneous coronary revascularizations of de novo ostial lesions of the left anterior descending artery were included.

#### Results:

The mean age was 59.8 years with a male predominance (80%). Our population was at high cardiovascular risk in 86% and Forty patients (53%) were diabetic. Acute coronary syndrome was the cause of revascularization in 70%. A multi-vessel coronary disease was found in 64%. The treated coronary lesions were complex: 31% of the lesions were calcified. The stents deployed on the ostial left anterior descending artery were new generation drug eluted in 93%. Two dilation strategies were adopted: 39% (n=30) of patients had a "provisional-T-stenting" of the left main coronary artery versus 61% (n=46) of patients who had a floating stent technic. Immediate procedural success was obtained in 99%. The majority of lesions were treated with a single stent (91%). The main immediate complication encountered was acute occlusion of the circumflex artery ostium (13%). We deplored three deaths, two of which were cardiac. After 12 months, the thrombosis rate was 5,2% and restenosis 6,5%. iterative revascularizations and major cardiac events were 10% and 14%, respectively. Predictors of major cardiovascular events were: Insulin-requiring mellitus diabetes (p=0.05), chronic renal failure (p=0.02), absence of post-dilatation (p=0.01), or the presence of signs of left ventricular failure (p=10-3) or apical hypokinesia after myocardial infarction (p<10-3). The predictive factors for stent thrombosis were the alteration of the left ventricular ejection fraction (p<0.01) and the eccentricity of the lesion (p<10-3). Finally, the predictive factors of restenosis were acute per procedural occlusion of the ostial circumflex artery (p=0.01).

#### Conclusion:

Ostial lesions of the interventricular artery can be re-vascularized by percutaneous angioplasty with acceptable rates of major cardiovascular events. However, the risk of iterative revascularization following restenosis and stent thrombosis remains significant.

Submission ID: 1118

### DRUG-ELUTING VS. BARE-METAL STENTS: IS IT A MATTER OF VESSEL SIZE?

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#### Background:

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  $\geq 3.5$  mm. Methods: This is a retrospective case-control 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, successfully DES implantation were compared to 73 consecutive patients (84 lesions) who were treated with BMS in large coronary vessels  $\geq 3.5$  mm.

#### Results:

The average age in our population was  $59.7 \pm 11.3$  years with a male majority without any significant difference between the two groups. The DES group contained significantly more patients with diabetes (67.5% vs. 38.1%;  $p < 0.0001$ ) and a history of coronary heart disease (40% vs. 16.7%;  $p = 0.001$ ). The BMS group had significantly more procedures in the aftermath of MI (18.8% vs. 40.5%;  $p = 0.002$ ) including more primary angioplasty (6.7% vs. 47.1%;  $p = 0.006$ ). About two-thirds of the study patients had multi-vessel disease with equal distribution in both groups. The average duration of dual antiplatelet therapy was significantly prolonged in the DES group:  $13.01 \pm 8.31$  months vs.  $7.59 \pm 8.19$  months;  $p < 0.0001$ . A mean follow-up of  $27.87 \pm 14.82$  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 type of stent does not appear as a factor influencing 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 without having any effect on in-stent restenosis and thrombosis.

Submission ID: 1122

### IMPACT OF PERCUTANEOUS TRANSVENOUS MITRAL COMMISSUROTOMY (PTMC) ON LEFT HEART HEMODYNAMICS AND MITRAL STENOSIS' (MS) TOLERANCE: A PROGNOSTIC CASE SERIES STUDY

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#### Background:

PTMC using an Inoue balloon is of established efficacy and safety in rheumatic MS patients.

Changes brought the LV hemodynamics after PTMC are poorly investigated.

#### Objectives:

To compare MS tolerance objectified by the 6-minutes walking distance (6MWD) and its correlation with the LV global longitudinal strain(LVS).

#### Methods:

We performed an interventional study on consecutive severe rheumatic MS patients candidates to PTMC and admitted to our department from April to September 2021. 3 patients were excluded due to the presence of left appendage thrombus.

2D TTE was done before and 4 weeks after PTMC. Parameters such as 2D, 3D and doppler TTE parameters including stroke



volume index (SVI), indexed LA volume, maximal trans-tricuspid velocity (TRVmax), mean trans-mitral gradient (MTMG) and valve area (MVA) using pressure half time (PHT), 2D and 3D planimetry were recorded.

Global longitudinal LA strain value was studied on a dedicated 4C view and peak reservoir strain (LASr) was calculated.

LVS was generated based on the 3 basic apical views.

A 6-minutes walking test was also performed before and 4 weeks after PTMC.

The variation of negative strain was calculated as the difference between the value before and after PTMC.

The variation of other 2D, 3D, doppler and positive strain values were calculated as the difference between the value after and before PTMC.

#### Results:

12 consecutive candidates to PTMC were enrolled. The mean age was 41±5yrs. 25% (n=3) had permanent AF. 76%(n=8) had mild dyspnea (NYHA I or II).

There was a significant improvement in MVA calculated using 2D (0.9±0.2vs1.5±0.3 cm<sup>2</sup>, p<0.001), 3D (p=0.03) and PHT (p<0.001) and in MTMG (p=0.019).

The increase of mitral flow (MF) was significant (59.8±8±20vs97.7±28, p=0.007).

The SVI did not significantly change (p=0.9)

The amelioration of LASr (p=0.1) and LVS (p=0.6) did not reach statistical significance.

Besides, there was a significant increase in 6MWD (p=0.038).

Interestingly, ΔMVA was correlated with ΔLVS (r=0.8, p=0.05) and ΔMF (p=0.005)

ΔLVS (p=0.05) and ΔMF were also correlated (p=0.03)

ΔLASr was correlated with ΔMTMG (p=0.01). The correlation between ΔLASr and ΔMVA was not significant (p=0.1).

Δ6mwd was not correlated to any TTE, Doppler or strain parameter.

#### Conclusions:

The improvement of MS tolerance was not attributable to any TTE parameter.

The increase of MF allowed by the increase of MVA is highly associated with the improvement of LVS.

Submission ID: 1126

#### FINDINGS IN THE MAIN CAUSES OF HEART FAILURE(HF) IN YOUNG PATIENTS

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#### Introduction:

HF affects patients differently depending on their age, young patients with HF face lower risk of death but poorer quality of life than the elderly.

#### Aim:

Is to assess specific findings in main causes of HF in younger adults.

#### Methods:

Our study is prospective and descriptive. We have tracked 40 patients who were hospitalized in 'Adults' cardiology Department in Rabta hospital for management of acute HF from september 2019 to september 2020.

#### Results:

The mean age was 33 +/- 6. 65% men and (35%) women. Patients were active smokers in (35%), (22,5%) had hypertension, (20%) diabetes mellitus, (12,5%) Chronic kidney disease. Obesity and history of coronary artery disease CAD were both found in (5%) of cases. The mean left ventricular ejection fraction LVEF was 34.6+/-

9. The principal cause of HF was valvular herat disease VHD in 25% followed by CAD 17.5%. Other etiologies were alcoholism (2.5%), peripartum cardiomyopathy (12.5%), arrhythmia (2.5%), hypertension (5%), hemochromatosis (2.5%), chemotherapy induced (2.5%), hypertrophic cardiomyopathy(7.5%) and idiopathic (22.5%). The tracking at one year showed 8 deaths, 4 lost of sight, 11 (27.5%) deterioration of the LVEF and 9 (22.7%) improvement.

In VHD patients with atrial fibrillation p=0.042, severe mitral regurgitation p=0.006 and severe tricuspid regurgitation p=0.042 are more likely to devolep dilated cardiomyopathy. Whereas in CAD, active smokers,p=0.024, hypertension p= 0.047, history of anterior STEMI p=0.028, Akinesia in more than 7 segments in TTE p=0.027, and critical stenosis of left anterior descending artery P=0.01 are associated to higher rate of ulterior dilated cardiomyopathy.

#### Conclusion:

Dilated cardiomyopathy is a progressive disease which has various etiologies. Despite the progress of medicin nowadays, the idiopathic cause remains significant.

Submission ID: 1129

#### EVOLUTION OF RIGHT VENTRICULAR (RV) STRAIN AFTER PERCUTANEOUS TRANSVENOUS MITRAL COMMISSUROTOMY (PTMC): A PROSPECTIVE CASE SERIES STUDY

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#### Background:

RV function is strongly associated with the prognosis of Rheumatic mitral stenosis (MS) patients. Thus, the evaluation of RV response to PTMC is crucial for patients' outcome.

A quantitative echocardiographic evaluation of RV global and regional functions remains difficult due to its complex anatomy.

Two-dimensional Speckle Tracking Echocardiography (STE) has recently been validated for the study of RV contractility allowing a new insight into the subclinical response of the RV to PTMC.

#### Objective:

To compare longitudinal RV free-wall and 4-chamber strain assessed by 2D STE before and after transvenous mitral commissurotomy (PTMC).

#### Methods:

This interventional case-control study was performed on consecutive patients admitted to Cardiology A department for PTMC from April to September 2021.

3 patients were excluded afterwards due to the presence of left appendage thrombus. We prospectively performed comprehensive 2D trans-thoracic echocardiography (TTE) before proceeding to PTMC. A second TTE was done after one to four months. Standard 2D and doppler TTE parameters including stroke volume index (SVI) were recorded.

RV free wall longitudinal strain (RVFWSL) and RV four-chamber strain (RV4CSL) were measured using a dedicated RV-focused four-chamber view.

The variation of RV strains (ΔRVFWSL and ΔRV4CSL) was calculated as the difference between its value before and after PTMC.

The variation of SVI (ΔSVI) was calculated as the difference between its values after and before PTMC.

A 6-minutes walking test was performed right before every TTE examination. The variation of the 6-minutes walking distance (6MWD) was calculated as the difference between its values after and before PTMC.

#### Results:

We enrolled 12 patients with severe rheumatic MS and candidates to PTMC. The mean age was 41±5yrs.

9 (75%) patients were on sinus rhythm. 25% (n=4) had severe dyspnea (NYHA III).

There was a significant improvement of RV4CSL after PTMC (-20±4vs-23.9±4, p=0.036).

The decrease of RVFWSL did not reach the statistical significance (-24±5vs-26.4±7, p=0.1).

Interestingly,  $\Delta$ RVFWSL was significantly correlated to  $\Delta$ SVI (p=0.03).

$\Delta$ RVFWSL and  $\Delta$ RV4CSL did not correlate with  $\Delta$ 6MWD (p=0.6 and p=0.7 respectively).

#### Conclusions:

RV4CSL strain significantly improves after PTMC.

This variation RVFWSL significantly correlates with the variation of SVI.

Submission ID: 1138

### INCIDENCE AND CLINICAL CHARACTERISTICS OF PATIENTS PRESENTING WITH MYOCARDIAL INFARCTION WITH NON-OBSTRUCTIVE CORONARY ARTERIES (MINOCA)

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#### Background:

Myocardial infarction (MI) with non-obstructive coronary arteries (MINOCA) is a heterogeneous entity often overlooked in contemporary medicine.

#### Aim:

To assess incidence and characteristics of MINOCA in a large cohort of patients admitted for myocardial infarction.

#### Methods:

A total of 1734 consecutive patients were retrospectively enrolled in the STEMI registry of the cardiology B department of Fattouma Bourguiba university hospital between January 1997 and December 2017. MINOCA was defined as a non-obstructive coronary artery disease and a lack of previous coronary revascularization. Clinical profile and prognosis of all patients were assessed.

#### Results:

The proportion of MINOCA patients among all myocardial infarction was 2.7%. The MINOCA patients were younger (age 47 ± 14.9 vs. 60.7 ± 12.4 years), more often males (87.2% vs. 78.7%) with significantly lower rates of diabetes mellitus (19.1% vs 36.4%, p=0.015), hypertension (10.6% vs 30.6%, p=0.003), kidney disease (2.1% vs 7.8%, p=0.032), peripheral artery disease (2.8% vs 8.3%, p=0.015) and previous MI (2.1% vs 11.1%, p=0.028) comparing to patients with obstructive coronary artery disease (CAD). History of smoking was more common in the MINOCA group. Typical chest pain at presentation was higher in MINOCA patients (98.6% vs 93.4%, p=0.046). MINOCA patients presented more frequently anterior ST-segment elevation. All-cause in-hospital and 5 years follow-up mortality rate was lower in the MINOCA patients (1.5% vs 9.6%, p<0.001; 7.6 vs 13.8%, p=0.036 respectively).

#### Conclusion:

MINOCA represents a challenging group of heterogeneous patients whose clinical characteristics contrast with classical cardiovascular risk factors. A search for etiology and eventual treatment provides a rich avenue for improving prognosis in patients with MINOCA.

Submission ID: 1140

### CLINICAL PRESENTATION, RISK FACTORS AND OUTCOMES IN WOMEN WITH ACUTE ST-ELEVATION MYOCARDIAL INFARCTION (STEMI)

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#### Background:

Coronary artery disease is the leading cause of death in women. Women with ST-segment elevation myocardial infarctions continue to have worse outcomes compared with men despite advancements in therapies.

#### Aim:

To examine the clinical presentation, patient management, risk factors and in-hospital outcomes of women with acute STEMI compared with men using data from a large STEMI registry from Fattouma Bourguiba University hospital.

#### Methods:

This retrospective study analyzed the data of 1734 patients admitted in Cardiology department of Fattouma Bourguiba University hospital between January 1997 and December 2017 diagnosed with ST-elevation myocardial infarction (STEMI). We recorded the baseline characteristics, comorbidities, treatment, complications, and mortality for all patients, and compared these data between female and male patients.

#### Results:

Of 1734 patients, there were 365 women (21%). The mean age in women was 64.8±11.8 years, which was significantly older than in men, 59.1±12.6 (p<.001). Women had more frequently diabetes mellitus, hypertension and anemia but were less current smokers compared with men (all p<0.001). Fewer women had histories of previous coronary artery disease (p=0.012). Women had anterior STEMI in 55.3%. When primary percutaneous coronary intervention (PPCI) was performed, women had longer symptom-to-balloon time (6.4 ±9.2 vs.5.1 ±4.2 hours, p=0.045). When thrombolytic therapy was administered, women had longer thrombolysis delay (4.7 ±3.2 vs. 3.9 ±3.3 hours, p=0.031). The mean duration of hospital stay was comparable between male and female (4.68 ± 3.47 vs. 4.65 ± 3.40 days, p=NS). The crude in-hospital mortality rate was significantly higher in women (13.4% vs. 8.3%, p=0.003).

#### Conclusion:

Mortality is higher in women with STEMI and can be explained by their older age, unfavourable risk profile and longer symptom-to-balloon time. Correction of gaps in quality of care should be attempted to reduce the high morbidity and mortality of STEMI in our women.

Submission ID: 1145

### EPIDEMIOLOGICAL PROFILE AND BIOLOGICAL FACTORS PREDICTING IN-HOSPITAL MORTALITY IN INFECTIVE ENDOCARDITIS

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#### Introduction:

Infective endocarditis (IE) is associated with high mortality. Evaluating the mortality rate and predictors of fatal events is important to identify modifiable factors and improve prognosis.

#### Objective:

Define the epidemiological profile and identify the biological factors predicting in-hospital mortality in patients with IE.

**Patients and Methods:**

This is a retrospective study including patients with IE admitted between January 2000 and December 2019 in the Cardiology B department of the Fattouma Bourguiba Monastir hospital. The diagnosis of IE was retained according to Duke's criteria.

**Results:**

A total of 245 patients were included. Fifty-six point seven percent were male. The mean age was  $37.4 \pm 17.8$  years. Half of them had a history of valvular heart disease. Prosthetic IE was noted in 25.7% of cases. Blood cultures were positive in 52.9% of cases. Staphylococcus aureus was the most frequently isolated germ. Indication for surgery was given in 49.8% of patients. In-hospital mortality rate was 18.8%. In univariate analysis, anemia (hemoglobin level  $<10.5$  d / dl), inflammatory syndrome (leukocytes  $> 10,000$  /  $\text{mm}^3$  and CRP  $> 100\text{mg} / \text{l}$ ), positive blood cultures and renal failure were significant factors associated with a high rate of in hospital mortality ( $p = 0.01$ ,  $p = 0.039$ ,  $p = 0.028$ ,  $p = 0.015$  respectively).

**Conclusion:**

The independent laboratory risk factors for in-hospital mortality were renal failure and anemia. Better management of these factors could improve the prognosis of patients with AE.

Submission ID: 1146

**EVOLUTION OF LEFT VENTRICULAR EJECTION FRACTION IN YOUNG ADULTS HEART FAILURE (HF)**

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**Introduction:**

HF in young adults is an uncommon yet potentially fatal disease which has increasing incidence and an unpredictable outcome therefore it requires regular assesment in order to control symptoms and improve quality of life.

**Aim:**

Is to assess the predictive factors of modification of the LVEF.

**Methods:**

Our study is prospective and descriptive. We have tracked 40 patients who were hospitalized in 'Adults' cardiology Department in Rabta hospital for management of acute HF from september 2019 to september 2020 and we followed them up over 1 year by trans thoracic echocardiography TTE, we defined improvement or worsening with a modification of 10% compared to the base value of LVEF.

**Results:**

The mean age was  $33 \pm 6$ . 65% men and (35%) women. Patients were active smokers in (35%), (22,5%) had hypertension, (20%) diabetes mellitus, (12,5%) Chronic kidney disease . Obesity ( $\text{BMI} \geq 30$ ) and history of coronary artery disease CAD were both found in (5%) of cases. The mean left ventricular ejection fraction LVEF was  $34.6 \pm 9$ . The principal cause of HF was valvular herat disease VHD in 25% followed by CAD 17.5%. The tracking at one year showed 11 (27.5%) deterioration of the LVEF and 9(22.7%) improvement.

The predictive factors of worsening HF were when patients present typical chest pain ( $p = 0.041$ ), signs of left HF congestion ( $p = 0.045$ ) and electrocardiogram findings such as Left bundle branch block LBBB ( $p = 0.022$ ) and ventricular extrasystole VE ( $p = 0.032$ ). Nevertheless, the absence of severe mitral regurgitation was associated with better prognosis ( $p = 0.045$ ).

**Conclusion:**

Given the poor progosis of HF a regular assesment is the best to consider in order to avoid deterioration of LVEF especillay in patients with symptoms of congestive HF , typical angina,VE and LBBB.

Submission ID: 1211

**INFECTIVE ENDOCARDITIS PROFILE, PROGNOSTIC FACTORS AND IN-HOSPITAL MORTALITY: 20-YEARS TRENDS FROM A TERTIARY UNIVERSITY CENTER IN TUNISA**

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**Background**

Infective endocarditis (IE) remains an expressive health problem with high morbimortality rates. the profil of these disease has evolved continuously

**Aim**

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

**Methods**

An observational, retrospective study of 150 patients, who fulfilled modified Duke's criteria during, from January 2000 to December 2019. The primary outcome was defined as in-hospital mortality Multivariate analysis identified mortality predictors.

**Results**

The median age was  $39 \pm 4$  years and 66% were male. Rheumatic heart disease was the predominant underlying heart condition (92%). Echocardiogram demonstrated vegetations in 90.4%. The infective agent was identified in 40.9% of cases, and the most frequent causative agents were streptococci (46.6%), followed by staphylococci (42.2%). Overall in-hospital mortality was 28% On multivariate analysis, diabetes mellitus (odds ratio [OR], 2.5), previous structural heart disease (OR, 3.1), and mitral valve infection (OR, 2.1, staphylococci infection, heart failure, neurological complications and abscesses.

**Conclusion**

This study presents IE profile and all-cause mortality in a large patient's cohort, young and male patients predominated, while streptococcus was the main microbiological agent its prognosis is still dark with high rate of mortality.

Submission ID: 1233

**DIAGNOSTIC OF ACCURACY OF POINT -OF-CARE LUNG ULTRASONOGRAPHY USING TWO METHODS OF CALCULATING THE PULMONARY CONGESTION SCORE IN ADULTS WITH SYMPTOMS SUGGESTIVE OF ACUTE DECOMPENSATED HEART FAILURE**

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**Background:**

Point - of - care lung ultrasonography (LUS), as a bedside approach, has emerged as a practical diagnostic tool for the most common causes of dyspnea. The present study assessed the performance of a simplified scoring system for evaluating pulmonary congestion.

**Objective:**

To compare the accuracy of LUS using two methods of calculating the pulmonary congestion score, the first assessing B-lines in 4 lung fields to more detailed assessments with 8 fields, in the diagnosis of cardiogenic pulmonary edema in adult patients presenting with dyspnea.

**Materials & Methods:**

Patients admitted to the Emergency Department for dyspnea

were enrolled. B- Lines were evaluated at admission and the pulmonary congestion score was calculated using two methods: one score out of 30 analyzing B-lines in 8 fields and the second score out of 15 assessing them in 4 fields. The gold standard for the diagnosis of acute heart failure was based mainly on pro-BNP level.

#### Results:

560 chest sonographies were performed on patients who initially presented to the emergency department with dyspnea. The mean age was 68 ±13 years. Sex ratio was 1.23. The diagnosis of acute heart failure was retained in 56 % of the population study. In 247 patients, an Pulmonary Congestion score (SCP-1) was obtained by summing the number of B-lines of 4 zones of chest scans. In 313 patients a (SCP-2) was obtained by summing the number of B-lines of 8 zones. The area under the curve of SCP-1 is 0.820 and the area under the curve of SCP-2 is 0.838

#### Conclusion:

This novel simplified lung ultrasonography scoring method counting only B-lines in 4 fields provides not only easy-to-acquire data in an emergency setting but also as refined as counting them in 8 fields in order to assess pulmonary congestion in patients with heart failure.

Submission ID: 1248

#### CORONARY PERFORATION: ALWAYS UNEXPECTED

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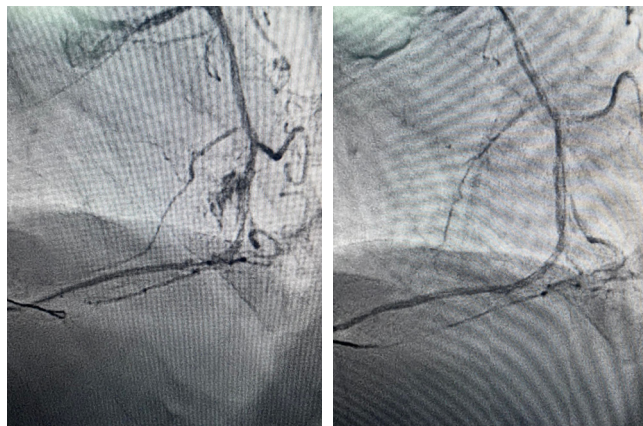
Tunisia

#### Introduction

Coronary artery perforation (CAP) is a rare but potentially life-threatening complication of percutaneous coronary intervention (PCI). The occurrence of perforation increased with the evolving of interventional devices and techniques. Cardiac tamponade constitutes the most severe clinical consequence.

#### Case Report

Our patient was 78 years old, with a history of hypertension, diabetes and chronic obstructive pulmonary disease. He was admitted in our hospital for acute chest pain. He Had been having angina for 2 months, untreated. His physical examination showed uncontrolled hypertension at 16/8 and pulse at 70/min. His electrocardiogram showed diffuse ST segment depression and ST segment elevation in lead avR. His laboratory tests were normal, with a normal level of troponin. Cardiac echography showed a fraction of ejection at 60% with no wall motion abnormalities,



diastolic dysfunction and mild mitral regurgitation.

Given the symptoms, we proceeded with coronarography that revealed significant, long and calcified stenosis in the middle and distal left anterior descending artery (LAD), significant stenosis in the distal circumflex artery and significant stenosis in the middle right coronary artery. After cannulating the right coronary ostium, guide catheter and crossing the lesion, the lesion was pre-dilated using 2mm × 15 mm balloon at 12 atms pressure. The control angiography (CAG) showed a type III coronary perforation of the Ellis classification. Prolonged balloon inflation with the same balloon 2,5mm\*15mm was applied to the ruptured area and the CAG showed no extravasation. We proceeded with the direct stenting of the lesion with 2,5\*30mm DES with a good angiographic result. The patient remained hemodynamically stable during the procedure and showed no ECG changes. There was no pericardial effusion on transthoracic echocardiography after the procedure.

Our patient was discharged 2 days after. He was readmitted 3 months later. A middle LAD angioplasty with Rotablator was performed with the stenting of the left marginal artery by 2,75\*18mm DES. He was discharged the day after with optimal medical treatment.

#### Conclusion:

CAP is a rare but feared complication in the catheterization laboratory that can be fatal. It requires rapid diagnosis and management. Choosing appropriate therapy may be lifesaving.

Submission ID: 1257

#### EVALUATION OF THE MANAGEMENT OF PEDIATRIC CARDIAC ARREST BY IN SITU SIMULATION

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#### Introduction:

Pediatric cardiopulmonary arrest (CA) is a rare event with a poor prognosis.

As part of a process of evaluation and improvement of our practices, we have chosen to evaluate the impact of an international certified training course: European Pediatric Life Support (EPALS) on the management of pediatric CA.

#### Materials and methods:

This is a prospective observational study on a population of 72 health professionals (38 emergency physicians, 30 pediatricians, 2 pediatric technicians, and 2 emergency technicians). Subjects were distributed over 3 EPALS sessions, each session was attended by 24 participants. We evaluated the performance of pediatric CA resuscitation at the beginning and at the end of the training.

#### Results:

The quality of resuscitation was significantly improved between the two evaluations (pre-and post-training), especially for specialized resuscitation. Airway clearance improved (98% post-course versus 43% initially). The quality of ventilation also improved (75% post-course vs. 57% initially). Immediate initiation of external cardiac massage after the 5 insufflations also improved (92% vs. 43%). There was a significant improvement in checking cardiac rhythm every 2 minutes (92% vs. 43%). The search for reversible causes (4 H, 4 T), initially insufficient, was significantly high at the end (14% vs 96%).

#### Conclusion:

This work highlights the interest of simulation training on the management of pediatric resuscitation. It allows a precise evaluation of teams' strengths and weaknesses when confronted to emergencies and allows setting up improvements.

Submission ID: 1030

### PREVALENCE OF ARRHYTHMIAS AND CONDUCTION DISTURBANCES POST-TAVR

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#### Introduction:

Percutaneous or transcatheter aortic valve replacement (TAVR) represents a real revolution in the treatment of symptomatic patients with severe calcified aortic stenosis (ACR) at high risk or having a contraindication for surgery. However, cardiac conduction disturbances and arrhythmias remain a frequent complication of TAVR.

#### Methods and objective:

This is a retrospective single-center study describing the prevalence of arrhythmias and conduction complications for the 51 patients who underwent TAVR with a balloon-expandable valve and self-expanding valve conducted in the military hospital of Tunis between November 2013 and February 2020.

#### Results:

The average age was  $78.88 \pm 8$  years with a sex ratio of 1.21 for the entire workforce. In our population, 27 patients presented arrhythmias and conduction disturbances after TAVR implantation. For arrhythmias, four percent of the population developed atrial fibrillation and two percent developed ventricular tachycardia. In terms of conductive disorders, we noted the occurrence of right bundle branch block in four patients, left bundle branch block in five patients and left anterior hemi block in two patients. Four patients developed a high degree conductive disorder and only one patient required pacemaker implantation.

#### Conclusion:

The appearance or increase of conductive disorders is a common complication after TAVR. However, the development of pre, per and post procedural planning strategies and the availability of new devices have made it possible to prevent them and quickly manage these complications.

Submission ID: 1036

### PREDICTORS OF SMOKING CESSATION AFTER ACUTE CORONARY SYNDROME

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#### Background:

Smoking is a major risk factor for coronary heart disease. Indeed, smoking cessation is recommended after an ACS. After a first infarction, the life expectancy of smokers is significantly reduced compared to that of non-smokers. The aim of this study was to identify the main predictive factors for smoking cessation after ACS.

#### Methods:

This study was retrospective and included 244 patients who had been hospitalized for ACS in the cardiology department of the main military training hospital in Tunis.

#### Results:

This study included 244 patients. The mean age was 62 years with a male predominance (sex ratio 1.65). 44.9% of the patients were considered a big smoker. We were able to achieve smoking cessation in 83%.

According to the results of the sub-analysis, smoking cessation six months after an acute coronary syndrome had a statistically significant effect on the duration of hospitalization in the cardiology

department ( $p=0.01$ ), on the occurrence of major cardiovascular events ( $p=0.02$ ) and on one-year mortality ( $p=0.05$ ).

#### Conclusion:

Behavioral risk factor accompanied by a strong dependence, which often makes its management difficult. Better control of this factor would allow, in primary prevention, to avoid the earliest and most unfair cardiovascular events, and in secondary prevention, to reduce major cardiovascular events.

Submission ID: 1069

### MORTALITY AFTER 6 MONTHS OF FOLLOW UP OF AN ALGERIAN POPULATION PRESENTING WITH ACUTE HEART FAILURE

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Mustapha Bacha A2 cardiology, Algeria

#### Background

Prevalence of heart failure patients (HF) is increasing worldwide due to the aging of the population and improvement in managing coronary artery disease and hypertension, which remain the main etiologies. The prognosis of this pathology remains bad especially in acute heart failure with represents its worse feature.

#### Objectives and method

A monocentric prospective study enrolling consenting patients over 18 years old admitted presenting with acute heart failure from January 2018 to September 2019 is performed in order to determine their prognosis and epidemiologic profile with a follow up of 6 months. The primary endpoint is all causes death.

#### Results

221 patients are enrolled. Mean age is 63 years old. Sex ratio is 1.63. Hypertension (59%) is the main cardiovascular risk factor, 45% are diabetics and 16% unveiled active smokers. Ischemic etiology (34%) is the most common followed by hypertensive heart disease (19.5%), cardiomyopathies (13%), and valvular heart disease (12%). Acute coronary syndromes (18.6%) and infections (18.1) are the main precipitating factors. "De novo" type is more common (68%) than chronic decompensated HF (33%) and the global forms are predominant (53.4%). The 6 months mortality is 41 % using the Kaplan Meier method. Prognostic factors were a high level of NTProBNP and liver transaminases and dilation of inferior vena cava.

#### Conclusion

Despite all the efforts made to improve the outcome of HF syndroms, AHF remains a challenge. New therapeutics in this field have shown a lowering in the incidence of death and rehospitalizations . A better knowledge of HF should bring other answers to many issues met in our daily practice.

Submission ID: 1108

### PATIENTS ADMITTED FOR NSTEMI: SHORT AND LONG-TERM PROGNOSIS: INTRAHOSPITAL AND 12MONTH RESULTS

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#### Purpose:

To assess prognosis by determining the rate of major adverse cardiovascular events (mortality, cardiogenic shock, heart failure, recurrence of ACS, stroke, major bleeding, stent thrombosis, severe

rhythm disorders - ventricular fibrillation/ ventricular tachycardia-) and prognostic factors associated with the occurrence of these complications, in-hospital and at 12 months.

#### Methods:

Prospective study including all patients admitted in our department for NSTEMI consenting, from January 1st, 2018 to July 31st, 2019 with a 12-month follow-up: clinical history ;risk factors, clinical, electrical, biological, echocardiographic and angiographic characteristics are collected. In-hospital and 12-month MACE and associated prognostic factors are assessed.

#### Results:

140 patients were included .The Sex ratio was 2,3; The mean age 65,6 years; 70% were hypertensive; 54% diabetic, smoking found in 43,5% and obesity found 12.2% . Cardiovascular history: history of ACS: 19,3%; history of PCI: 16,5% ; history of heart failure: 10%; Stroke: 2,1%; CABG: 2,9%; Renal failure: 10%. KILLIP class  $\geq 2$  at admission found in 8% ; the mean GRACE score was  $119 \pm 24$ . The mean LVEF was  $52.9\% \pm 9.6$ . Coronary angiography performed in 84.1% with stenting in 75%. Recommended therapies were prescribed in more than 96.9% for each therapeutic class.

In-hospital results: MACE rate was 12.9%.  $po = 0.129$ ; 95% CI:  $0.164 \pm 0.036$ . Mortality: 1.4%. heart failure 10%. Cardiogenic shock occurred in 2.2%.

Recurrence of ACS and stroke as well as major bleeding occurred in 0.7% of cases, respectively . No cases of stent thrombosis or VT/ VF were recorded.

At 12 months: MACE rate was 13,4% ;  $po = 0.134$  (95% CI:  $0.134 \pm 0.061$ ). Mortality rate was 4.2%. Heart failure 5%. Stroke 4.2% , ACS 3.3%. Stent thrombosis 1.7% . Cardiogenic shock noted in 0.8%. Finally, no case of bleeding or VT / VF recorded at 12 months.

Prognostic factors for the occurrence of MACE were: history of STEMI, history of heart failure, KILLIP classification  $\geq 2$  on admission, GRACE score  $> 140$  and pulmonary hypertension.

#### Conclusion:

NSTEMI remains a serious pathology despite advances in pharmacology and interventional cardiology. The reduction of its complications requires the improvement of the patient care pathway, management of comorbidities , without forgetting the cornerstone which is the reinforcement of preventive measures and the fight against risk factors in the general population from a young age.

Submission ID: 1148

#### PREDICTIVE RISK FACTORS OF EMBOLIC EVENT IN PATIENTS WITH INFECTIVE ENDOCARDITIS

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#### Introduction:

Embolic events are a major cause of morbidity and mortality in patients with infective endocarditis (IE).

#### Objective:

To identify factors associated with the occurrence of embolic event in patients hospitalized for IE.

#### Patients and Methods:

This is a single-center retrospective study including 245 patients admitted in cardiology B department of Fattouma Bourguiba university hospital between January 2000 and December 2019, for IE. The diagnosis of IE was made according to Duke's criteria.

#### Results:

There were 48 cases of IE complicated by an embolic event (19.6%).

Right heart IE was significantly associated with a higher incidence of embolic event ( $p = 0.01$ ). For left heart IE, embolic events were more frequent in mitral valve IE (45.8% vs. 31.7% for the aortic valve;  $p = 0.012$ ). The occurrence of an embolic event was significantly higher in case of IE on prosthesis compared to IE on native valve ( $p = 0.04$ ). Mobility and vegetation size  $> 10$ mm were associated with an increased incidence of embolic event ( $p = 0.013$  and  $0.02$  respectively). In multivariate analysis, only vegetation size  $> 10$ mm was independently associated with a high risk of embolic event (OR = 3.1; 95% CI: 1.58 - 5.42;  $p = 0.02$ ).

#### Conclusion:

The evaluation of the embolic risk in patients with AE remains difficult, which has a major prognostic impact.

Submission ID: 1156

#### LEFT VENTRICULAR NON-COMPACTION CARDIOMYOPATHY: CLINICAL AND IMAGING FINDINGS

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#### Introduction:

Left ventricular non-compaction (LVNC) is a rare congenital cardiomyopathy thought to be caused by the arrest of myocardial compaction during embryogenesis, leading to a non-compacted endocardial layer with marked trabeculations. Clinical manifestations exist on a wide spectrum, from asymptomatic to the classic triad of HF, arrhythmias, or thromboembolic events. The diagnosis is primarily based on transthoracic echocardiography (TTE) and cardiac magnetic resonance imaging (MRI).

#### Methods:

We present the symptoms, echocardiographic and MRI findings of 6 patients diagnosed with LVNC.

#### Results:

The mean age was  $39 \pm 9$  years old. Our youngest patient was a 22-year-old woman. There were 4 men and 2 women. Dyspnea was present in all 6 cases (NYHA class III-IV). Congestive heart failure signs were present in 5 of them. Only one patient had a cardiogenic shock complicating an inferior myocardial infarction and an ischemic stroke leading to a fatal end. Arrhythmias were the most frequent manifestation: 3 cases presented with sustained ventricular tachycardia and 1 case had a history of paroxysmal atrial flutter. TTE showed a dilated LV and systolic dysfunction in 5 patients with a mean LVEF of 34.5%. Hypertrophy was present in 4 patients and only 2 had marked trabeculations with a 'spongy' look and evidence of intertrabecular perfusion proved by Color Doppler mode. Neither intracardiac thrombus nor congenital cardiac defects were found on TTE.

Cardiac MRI confirmed LVNC in all 6 patients with a non-compacted to compacted myocardium ratio  $> 2.3$ . Trabeculations were mostly present in the lateral wall (3 patients) and the apex (2 patients). Thrombus presence within the trabeculations was found in 2 patients.

Three of our patients underwent coronary angiography which showed no significant coronary artery disease.

All patient were treated with betablockers and ACE-inhibitors. Two of them underwent ICD implantation and one patient had a CRT-D device implanted.

A family screening plan was set for every patient.

#### Conclusion:

LVNC is a rare disease of which the etiology and pathogenesis are still unsolved and with unpredictable outcomes. Sudden cardiac death is the most feared complication. Its therapeutic management is still challenging.

Submission ID: 983

**NEONATAL REVELATION OF EBSTEIN ANOMALY: WHEN THE TRICUSPID VALVE IS LETHAL**

GHARDALLOU Houda, HAKIM Kaouthar, KARMOUS Rahma, BEN OTHMENE Rihab, OUAGHLANI Khalil, EL BARDI Mouadh

La Rabta Hospital, Tunisia

**Background:**

Ebstein anomaly is a congenital malformation of the tricuspid valve and the right ventricle (RV), combining an abnormality of the insertion of the tricuspid valve and an atrialization of a more or less extensive part of the RV.

This disease is often discovered during childhood or adolescence for heart murmur.

Diagnosis during adulthood is not an exception, especially in minor or moderate forms of the disease.

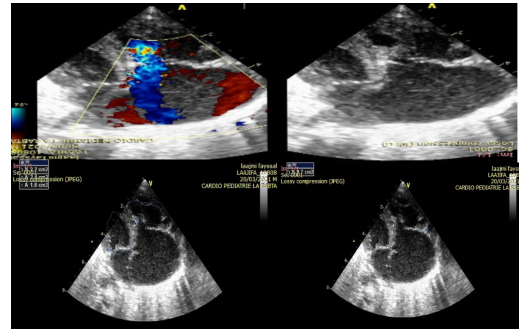
Conversely, neonatal revelation is very rare and is observed in severe forms of the disease with a particular pathophysiology relating to what is called "the circular shunt".

**Case presentation:**

We report the case of a newborn male referred to our department on day 3 of life for respiratory distress with heart failure associated with moderate cyanosis and a heart murmur. The transthoracic echocardiogram shown an Ebstein disease type C with a very small functional RV (Gose ratio= 1.2), a patent ductus arteriosus, significant pulmonary regurgitation (PR) with massive tricuspid regurgitation T(R) and an ectasic right atrium (RA). Low dose prostaglandin PGE1 was perfused in order to maintain adequate perfusion of pulmonary arteries. The course was unfortunately marked by the occurrence of death at day 7 of life because of cardiogenic shock with multiorgan dysfunction.

**Conclusion:**

Neonatal revelation of Ebstein's anomaly is observed in very severe forms of the disease. Physiologically elevated pulmonary vascular resistance at birth worsens the clinical state by aggravating tricuspid regurgitation. The duct shunt and the pulmonary and tricuspid regurgitations create a circular shunt Aorta> Pulmonary artery> RV> RA resulting in low right cardiac output (otherwise called functional pulmonary atresia) which can lead to death. Therapeutic management is very delicate and challenging, having to combine between good pulmonary perfusion on one hand and the avoidance of a severe pulmonary arterial hypertension on the other hand. The majority of these forms are beyond any therapeutic resources and progress to death is generally the rule.



Submission ID: 985

**MELODY PROSTHESIS: AN INFECTIVE ENDOCARDITIS ONCE AGAIN**

GHARDALLOU HOUDA, HAKIM KAOUTHAR, KARMOUS RAHMA, BEN OTHMENE RIHAB, OUAGHLANI KHALIL, EL BARDI MOUADH, BEN DOUDOU MAROUA, FTINI SIRINE, ASSOULFI F ZAHRA, MSAAD HELA, OUARDA FATMA

DEPARTMENT OF PEDIATRIC CARDIOLOGY LA RABTA HOSPITAL, TUNISIA

**Introduction:**

Percutaneous transcatheter pulmonary valve replacement with Melody® prosthesis changed the prognosis of congenital heart disease with right outflow tract obstructions by reducing the number of surgical interventions in this multi operated population.

However, percutaneous transcatheter pulmonary valve (Melody®) has long been recognized as having a higher risk of infective endocarditis compared to surgical valvular replacement.

**Case presentation:**

We report the case of a 20-year-old patient with pulmonary atresia and intact inter ventricular septum. He underwent reconstruction of the right outflow tract with an aortic homograft in pulmonary position at the age of 10, which degenerated after 6 years and became severely stenotic. After two failed balloon dilation attempts, he underwent a percutaneous transcatheter valve implantation with Melody® prosthesis in 2016.

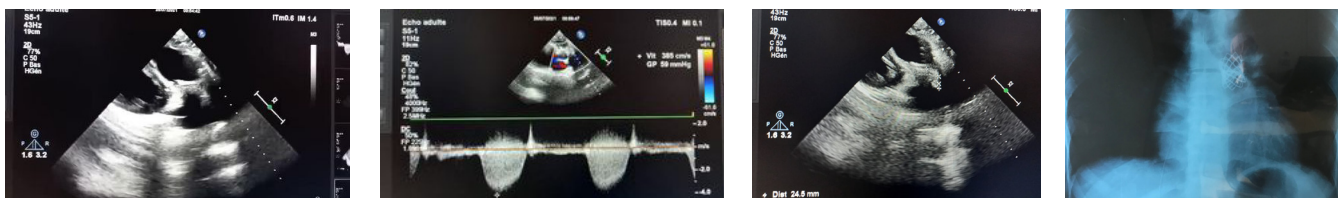
He was admitted in 2020 for prolonged fever with weight loss. Investigations concluded to IE of the Melody prosthesis with staphylococcus epidermidis. TTE assessment showed an obstructive vegetation on the pulmonary pathway with peak gradient at 70mmHg.

Clinical outcome was favorable under medical treatment with disappearance of the vegetation after 65 days of adequate antibiotic therapy and a decrease of the RV to PA peak gradient to 25 mmHg.

**Conclusion:**

The annual incidence of endocarditis on Melody® prosthesis reported in the literature ranges from 1.3 to 9.1% per patient and per year. The technical characteristics of the Melody® valve seem to be more favorable to bacterial aggregation compared to other bioprostheses: the bovine jugular origin of the valve seems to be a contributing factor in vitro, as was attributed by comparing the CONTEGRA® bioprosthesis with the homografts; the empty space between the valve and the stent wall could create rheological disturbances which can lead to micro thrombosis and thus to bacterial graft. Other risk factors for infective endocarditis following percutaneous valve replacement have also been described: male sex, abrupt withdrawal of aspirin, an invasive procedure without antibiotic prophylaxis, and a history of infective endocarditis.

Regular clinical follow-up and EI prophylaxis are mandatory in these patients to track in time such a serious complication.



Submission ID: 987

### OUTCOMES OF CHILDHOOD HYPERTROPHIC CARDIOMYOPATHY

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#### Background:

Outcomes of children with hypertrophic cardiomyopathy (HCM) have not been well defined. We examined late survival and symptomatic status for pediatric HCM.

#### Methods and results:

From January 1999 to July 2020, 57 patients were hospitalized in the pediatric cardiology department of the Rabta hospital at a median age of 1,4 years (range 0-18 years). Aetiology was: idiopathic HCM (n=34, 60%), inborn errors of metabolism (IEM) (n=14, 25%), RASopathy (n=8, 14%) or Friedreich's ataxia (n=1, 2%). Mean length of follow-up was 7,1 ± 6,1 years. Seven patients (12%) were classified as lost to follow-up. Four patients (8%) underwent Implantable cardioverter defibrillator (ICD) for primary (n=3) or secondary (n=1) prevention. At last clinical follow-up, 59% of survived patients were asymptomatic and 12% presented signs of heart failure. Three patients (6%) survived a major arrhythmic event (sustained ventricular arrhythmia in one patient and appropriate ICD discharge in two patients) during follow-up. Sixteen patients (32%) died at an age ranging from two days of life to 32 years old with a mean value of 10,7±10,4 years old. The causes of death were: sudden cardiac death (SCD) in nine patients, congestive cardiac failure in six patients and after cardiac surgery in a patient. Our study did not reveal a significant difference in mortality between the different etiologies. Congestive cardiac failure was more common in infants. Eighty-nine percent of patients who died suddenly were aged under 18 years at the time of death.

#### Conclusions:

This study is the largest study in our country including children diagnosed with HCM. The results show that pediatric HCM is a heterogeneous disease in terms of aetiology and outcomes. Sudden cardiac death is the most common cause of mortality. More studies are needed in order to better stratify this risk in pediatric HCM.

Submission ID: 1000

### PROGNOSTIC FACTORS OF MYOCARDIAL INFARCTION AMONG YOUNG ADULTS

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UHC Charles Nicolle, Tunisia. UHC Farhat Hached, Tunisia

#### Background:

Prognostic factors of myocardial infarction among the young adults are still not well identified. The aim of our study was to determine the predictive factors of in-hospital major adverse cardiac events following myocardial infarction in the young.

#### Methods:

From January 2014 to May 2017, we retrospectively studied data of patients with acute myocardial infarction younger than 45 years old in the department of cardiology of Charles Nicolle hospital of Tunis.

#### Results:

We enrolled 108 patients in the study. The prevalence of acute myocardial infarction in young patients was 8.5%. The mean age was 39.5 ± 5.5 years with a sex-ratio of 1.1. The most frequent cardiovascular risk factors were smoking (88%) and dyslipidaemia

(51.9%). In-hospital complications occurred in 47.2% of cases. Factors associated with in-hospital major adverse cardiac events were: age over 41 (p=0.02), a heart rate over 82 (p=0.007) and the association of at least three cardiovascular risk factors (p=0.031). The age over 41 was identified as an independent predictive factor of in-hospital major adverse cardiac events (odds ratio = 3.454, CI 95% [1.329 – 8.974], p= 0.011).

#### Conclusion:

Despite its favorable outcome, the acute myocardial infarction in the young is still a serious health problem. Primary preventive measures aimed at preventing our youth from adopting tobacco use and developing dyslipidemia should be implemented to delay and even avoid the onset of coronary artery disease.

Submission ID: 1001

### JUNCTIONAL TACHYCARDIA IN CHILDREN: IS IT A WPW SYNDROME?

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PEDIATRIC CARDIOLOGY DEPARTMENT LA RABTA HOSPITAL TUNIS, TUNISIA

#### Introduction:

Wolf Parkinson White Syndrome (WPW) is defined as the presence of an accessory pathway that shortcuts electrical conduction between the atria and the ventricles. The diagnosis is suspected on the ECG and confirmed by electrophysiological study (EPS). Finding a ventricular pre-excitation on ECG consistent with a WPW pattern is quite common in pediatric population.

However, clinical tachycardias are less often and the age of the patients remain the main limiting factor to EPS study in order to confirm the diagnosis and indicate radiofrequency ablation.

#### Aim of the study:

The aim of this study was to assess the incidence of accessory pathways in pediatric population and to describe its clinical and electrophysiological profile.

#### Methods:

We carried out a descriptive study reporting all cases of junctional tachycardia (TJ) collected at the pediatric cardiology department of La Rabta hospital between January 2019 and March 2021.

#### Results:

Fifteen patients were included in this study (mean age= 6.56years [4days-14years] Sex Ratio=1,14). A typical ECG pattern was identified in 11 patients (73% of the population).

The tachycardia was symptomatic in all of these patients. Hemodynamic compromise was observed in 5 patients.

EPS was performed in only 5 patients aged over 5 years. This showed that the accessory pathway was left and posterolateral in 2 patients, right lateral in 1 patient, left posterior in 1 patient and antero-septal in one patient. The mean shortest pre-excited RR interval (SPERRI) was 288 ms.

Successful ablation was achieved in all of these patients.

Recurrence of clinical tachycardia was observed in 2 patients with normal structural hearts and in one patient with Ebstein's disease.

#### Conclusion:

Accessory pathways account for more than 80% of junctional tachycardias in children. EPS remains limited by the young age of patients because the procedure is technically impractical before the age of 5-6 years and for a weight less than 15Kg. Vascular access is another limiting factor in such a young population. The prognosis is generally good and the invasive exploration should be carefully considered.



Submission ID: 1020

### OUTCOMES AND PROGNOSIS OF PATIENTS ADMITTED FOR NON-ST SEGMENT ELEVATION MYOCARDIAL INFARCTION

fares ammar, aymen ben abdesslem, Anis ghariani, semah Afli, Abdallah Mahdhaoui, Gouider jridi

UHC Farhat Hached, Tunisia

#### Background:

Evidence-based guidelines have been published for optimal management of acute coronary syndromes. We aimed to evaluate outcomes of patients admitted for non-ST segment elevation myocardial infarction (NSTEMI) in order to identify prognostic factors.

#### Methods:

From January 2017 to December 2020, patients, admitted in our center for NSTEMI, were enrolled. They were followed-up for one year. Major cardiac events (MACEs) were defined as the occurrence of cardiovascular death, myocardial infarction, target vessel revascularization or target lesion revascularization.

#### Results:

A total of 250 patients were included. One-year mortality was 8%. After multivariate logistic regression, independent predictors of one-year mortality were: history of myocardial infarction [Odds ratio (OR)= 3.7; confidence interval at 95% (95% CI) 1.23 - 11.75; p=0.02], high bleeding risk patients according to ARC HBR classification [OR= 3.61; 95% CI 1.16 - 11.15; p=0.026], Grace score higher than 142 [OR= 12.15; 95% CI 3.11 - 47.37; p=0.001], delayed angiography (>72hours) [OR= 3.99; 95% CI 1.25 - 12.47; p=0.019] and multi-vessel disease (OR= 4.41; 95% IC: 1.08 - 10.49; p=0.036).

One-year MACEs were observed in 23.6% of patients. Independent predictors of one-year MACEs identified with multivariate logistic regression were: anemia [OR= 2.9; 95% CI 3.23 - 12.6; p=0.002], dyslipidemia [OR= 2.34; 95% CI 1.09 - 5; p=0.028] and GRACE score higher than 142 [OR= 6.32; 95% CI 3.11 - 47.37; p=0.001].

#### Conclusion:

Our study suggested that NSTEMI patients still have poor long-term outcomes in our center. Further efforts should be provided to improve their prognosis.

Submission ID: 1028

### MYOCARDIAL CLEFTS, SHOULD WE BE WORRIED?

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Myocardial clefts or crypts are a rare congenital abnormalities and could be described as an invagination penetrating >50% of the thickness of adjoining compact myocardium in diastole. However, the cleft during systole presents a narrowing or a complete occlusion. Besides, it is commonly seen in the basal inferior wall of the left ventricle and the mid to apical segments of interventricular septum.

We describe a case of 29-year-old male with a personal history of cluster headache without any familial history of HCM, who is suffering from chest pain and palpitations since 5 years. Cardiac exam and the electrocardiogram were without particularities. The patient underwent a coronary CT angiogram to explore his symptomatology which confirmed the absence of any coronary artery disease but revealed the presence of an inferoseptal myocardial crypt. A transthoracic echocardiogram performed to further characterize this finding showed a normal wall motion. A discrete myocardial cleft was seen in the mid-inferoseptal wall.

On reviewing the literature, these structural abnormalities like

myocardial clefts or crypts represented early pathological alteration of the myocardium and might precede manifest hypertrophy in HCM mutation carriers. Indeed, the clefts were much more prevalent in the phenotypically negative HCM patients (without LV hypertrophy). This strong association between myocardial clefts and HCM confirm the importance of a long-term follow-up in order to investigate their clinical significance.

In addition to that, myocardial clefts must be recognized from LV diverticulum, pseudoaneurysm and true LV aneurysm which are prone to rupture and carry a high risk of mortality.

Submission ID: 1031

### PERCUTANEOUS CORONARY REVASCULARIZATION BEFORE TAVR: IS IT REALLY BENEFICIAL?

Amira Talhaoui, Sarra Chenik, Aymen Noomen, Taha Yassine Jabloun, Abdeddayem Haggui, Nadhem Hajlaoui, Wafa Fehri

Cardiology department, Military Hospital of Tunis, Tunisia

#### BACKGROUND:

Transcatheter aortic valve implantation (TAVI) has emerged as an alternative to manage patients with severe aortic stenosis who are not suitable for surgery that frequently present a coronary artery disease. When indicated, coronary revascularization may have an impact on clinical presentation and prognosis over the medium and long term.

#### METHODS:

This is a retrospective and descriptive study of patients undergoing TAVI who were hospitalized at the cardiology department between November 2013 and February 2020. This study sought to show the impact of the percutaneous coronary revascularization on clinical presentation and complication following TAVI.

#### RESULTS:

In our study, we included 50 patients, 13 of whom had coronary angioplasty prior to TAVI. Their most frequent reason for consultation was exercise dyspnoea (11 cases/13, p=0.08). On the other hand, they had less syncope (1case/13, p=0.05). Following TAVI, it was noted that anterior revascularization was less at risk of left anterior hemiblock (5cases/13, p=0.03), ventricular rhythm disorders (1case/13, p=0.07), acute coronary syndrome (1case/13, p=0.08), major vascular complications (6cases/13, p=0.08) and per procedural death (1cas/13, p=0.08). For long-term death no significant difference from the general population was found (p=0.54).

#### CONCLUSION:

The beneficial impact of coronary angioplasty on coronary artery disease and associated TAVI is still being discussed. Most registries show an identical 1-year prognosis for completely revascularized patients or not.

Submission ID: 1035

### INTERATRIAL BLOCK MIMICKING A PREEXCITATION SYNDROME IN PATIENT WITH ATYPICAL FLUTTER ADMITTED FOR WIDE QRS TACHYCARDIA

NOAMEN AYMEN, Tlili Ghassen, Chenik Sarra, Haggui abdeddayem, Hajlaoui Nadhem, Fehri Wafa

Military hospital of Tunis, Tunisia

#### Introduction:

Interatrial conduction defects are common in clinical practice. 1st degree of interatrial block (IAB) (mere prolongation of P waves  $\geq 120$  ms) often related to left atrium (LA) enlargement, are well known. Higher degrees of IAB may be underdiagnosed and sometimes confounded with other ECG patterns.

We present a case with a 3rd degree IAB in which a late left atrial activation resulted in a pseudo-preexcitation.

#### The case:

A 77-year-old man with a history of paroxysmal atrial fibrillation, presented in the emergency care unit with a poorly tolerated wide-complex tachycardia. The ECG showed a regular monomorphic wide QRS tachycardia at a rate of 160 bpm with a right bundle branch block pattern. The tachycardia was successfully terminated by a direct current cardioversion. During sinus rhythm, the ECG showed a 3rd degree IAB with two distinct P waves separated by a short isoelectric segment. The second P wave was started very late and there was a fusion with the beginning of the QRS producing a pseudo delta wave. Significant coronary artery disease was excluded by angiography. He was referred for an electrophysiological study (EPS) which confirmed the interatrial conduction delay and excluded an accessory pathway. The atrial pacing induced an atypical flutter with a tachycardia dependent right bundle branch block, reproducing the clinical tachycardia.

#### Conclusion:

3rd degree IAB is uncommon. It is associated with abnormal atrial excitability leading to atrial fibrillation and other supraventricular arrhythmias. May we speak in this case about an eye artifact pseudo preexcitation syndrome?

Submission ID: 1046

#### LUCKILY, WE ENHANCE THE STENT!

NOAMEN Aymen, Ben ayed houssem, Chenik sarra, Raddaoui Haythem, Hajlaoui Nadhem, FEHRI Wafa

Military Hospital of Tunis, Tunisia

#### Introduction:

Stent fracture is an underestimated entity emphasized by the frequent recourse to intravascular imaging tools, rising concerns about it as a potential cause of stent restenosis and thrombosis which can lead to adverse clinical outcomes and underlying the importance to have a clear diagnosis algorithm with a gold standard imaging patterns and consensual therapy

#### Case presentation:

a 78-year-old man was admitted with a history of class 3 Canadian cardiovascular society CCs grading of angina seven year after an angioplasty of mid left anterior descending artery with a 2,5x18mm sirolimus drug eluting stent (DES)(Cypher) for unstable angina.

Coronary angiography showed focal in-stent restenosis. Drug eluting balloon angioplasty was planned as initial approach motivated by the focal pattern of restenosis in a small diameter stent with thick struts.

During this procedure, we performed a digital image enhancement revealing a stent fracture with two fractured segments still maintained contact without definite displacement which was not evident on angiography.

So, we opted to deploy a 2.75\*20mm DE Zotarolimus DES in the fracture site with a satisfying final result after a postdilatation on angiography and digital image enhancement.

#### Conclusion:

We underline through this case the importance to adopt an imaging guided strategy to treat intrastent restenosis in order to choose the appropriate approach.

Submission ID: 1048

#### MYOCARDIAL BRIDGING AND SUDDEN CARDIAC DEATH, DATA FROM THE NORTHERN TUNISIAN SUDDEN CARDIAC-DEATH REGISTRY

BEN AHMED HABIB, Aymen FTINI, Mohamed Salmen AISSA, Mohamed BELLALI, Mehdi Ben KHELIL, Maha SHIMI, Azza BELHADJ, Emna ALLOUCHE, Rabii Razghallah, Leila BEZDAH, Mohamed ALLOUCHE, Moncef Hamdoun

Department of Legal Medicine, Charles Nicolle Hospital, Tunis, Tunisia

#### Background:

Myocardial bridging (MB) is a congenital anomaly defined as a segment of epicardial coronary arteries running through the myocardium. Various complications related to myocardial bridging have been reported including angina, myocardial infarction and coronary spasm, but sudden cardiac death (SCD) has rarely been described.

#### Aim:

To describe the relationship between myocardial bridging and sudden cardiac death.

#### Methods:

In the northern Tunisian sudden cardiac-death registry, we collected epidemiological and autopsy data of victims of sudden cardiac death occurring in the northern governorates of Tunisia between January 2013 and December 2019. The macroscopic examination of the heart included the origin and course of the coronary arteries, MB site, length, depth and the distance from vessel origin. We analysed prospectively the macroscopic features of 54 cases of myocardial bridging of the left anterior descending artery (LAD) out of a series of 2302 medico legal autopsy. The study population was divided into two groups. The first group included 13 victims with MB and no other pathology to explain death, the second one contained 41 victims of SCD with obvious macroscopic cause of death in addition to MB (ischemic heart disease, valvulopathy, Hypertrophic cardiomyopathy.)

#### Results:

The study population included 44 men and 10 women with a mean age of 56,  $7 \pm 11$ , 5 years. Cardiovascular risk factors, Circumstances and symptoms before death were similar in the two groups. SCD in group 2 occurred indoors more often than in group 1 (78% versus 64.1%,  $P: 0.028$ ).

Length and depth were significantly greater among victims with only MB as underlying cause of death (group 1) compared to group 2 with respectively ( $26,8 \pm 8,44$  mm, versus  $19,7 \pm 4,25$  mm,  $P:0.001$ ) and ( $3 \pm 0,9$ mm versus  $2,51 \pm 0,63$ ,  $P:0.036$ ). There were no differences regarding the predominant site of MB, the mid LAD was the most commonly involved coronary artery in the two groups (61.1%).

#### Conclusions:

Length and depth of the MB were significantly higher in victims of sudden cardiac death with negative autopsy compared to the one with underlying cardiac disease.

Although myocardial bridging is often overlooked as an etiology for sudden cardiac death, this study highlights the importance of expanding the differential diagnosis to myocardial bridging in the work-up for the cause of sudden cardiac death.

Submission ID: 1068

### KOUNIS SYNDROME: ALLERGIC ACUTE CORONARY SYNDROME

dardouri safa, gribaa rim, ouanes sami, Imen Ben Ali, slim mahdi, el hraiech ayman, ben farhat sameh, naffeti ilyes

Tunisia

#### Background:

Kounis syndrome (SK) is defined as an acute coronary syndrome occurring in a allergy context. It was first described by Kouniset Zavrassen in 1991. The ischemia in allergic reaction is secondary to the release of inflammatory mediators, including histamine, tryptase, chymase, platelet-activating factor, cytokines, and prostaglandins, and leukotriene synthesis, which leads to coronary vasospasm.

#### Aim:

to know how to suspect and question the patient well, so as not to miss this syndrome.

#### Case report:

We report the case of a 45-years-old man, smoker, who consults the emergency room for chest pain with generalized urticaria, all following a bee sting. The admission examination revealed a heart rate of 80 beats per minute and blood pressure of 80/40 with absence of peripheral signs of shock. His electrocardiogram showed the presence of an ST segment depression in apicolateral and inferior. The patient was putted on a low dose of 0.5mg / hour norepinephrine and received 200mg of hydrocortisone hemisuccinate.

The evolution was marked by a good clinical evolution and a regression in the hour of repolarization disorders. A complement by a computerized tomography (CT) coronary angiogram, looking for an underlying coronary stenosis, was done, returning without abnormalities.

#### Conclusion:

Type I kounis syndrome, as is the case with our patient, includes patients with healthy coronary arteries, without factors predisposing to coronary artery disease in whom allergic stimulation leads to coronary spasm with normal cardiac biomarkers or infarction with positive biomarkers. This variant represents a manifestation of endothelial dysfunction or microvascular angina. Diagnosis and treatment of KS can be difficult, requiring simultaneous attention to cardiac and anaphylactic pathophysiology.

Submission ID: 1080

### PREDICTIVE VALUE OF THE CHA2DS2-VASC SCORE FOR SEVERITY OF CORONARY ARTERY DISEASE IN PATIENTS WITH ACUTE CORONARY SYNDROME

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CARDIOLOGY DEPARTMENT OF LA RABTA, Tunisia

#### Background

Prevalence of heart failure patients (HF) is increasing worldwide due to the aging of the population and improvement in managing coronary artery disease and hypertension, which remain the main etiologies. The prognosis of this pathology remains bad especially in acute heart failure with represents its worse feature.

#### Objectives and method

A monocentric prospective study enrolling consenting patients over 18 years old admitted presenting with acute heart failure from January 2018 to September 2019 is performed in order to determine their prognosis and epidemiologic profile with a follow up of 6 moths. The primary endpoint is all causes death.

#### Results

221 patients are enrolled. Mean age is 63 years old. Sex ratio is 1.63. Hypertension (59%) is the main cardiovascular risk factor, 45% are diabetics and 16% unveiled active smokers. Ischemic etiology (34%) is the most common followed by hypertensive heart disease (19.5%), cardiomyopathies (13%), and valvular heart disease (12%). Acute coronary syndromes (18.6%) and infections (18.1) are the main precipitating factors. "De novo" type is more common (68%) than chronic decompensated HF (33%) and the global forms are predominant (53.4%). The 6 months mortality is 41 % using the Kaplan Meier method. Prognostic factors were a high level of NTProBNP and liver transaminases and dilation of inferior vena cava.

#### Conclusion

Despite all the efforts made to improve the outcome of HF syndroms, AHF remains a challenge. New therapeutics in this field have shown a lowering in the incidence of death and rehospitalitions . A better knowledge of HF should bring other answers to many issues met in our daily practice.

Submission ID: 1089

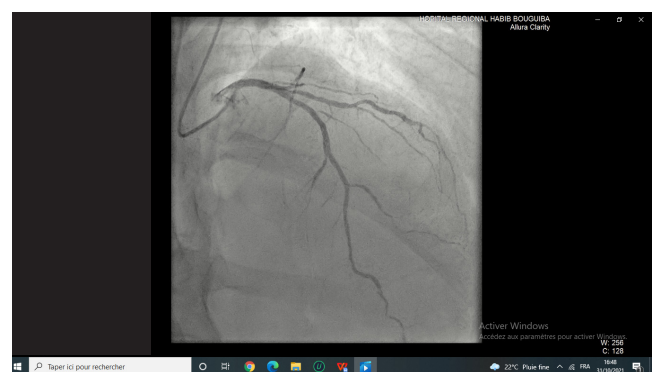
### RECURRENT ST-SEGMENT ELEVATION AFTER SUCCESSFUL PERCUTANEOUS CORONARY INTERVENTION

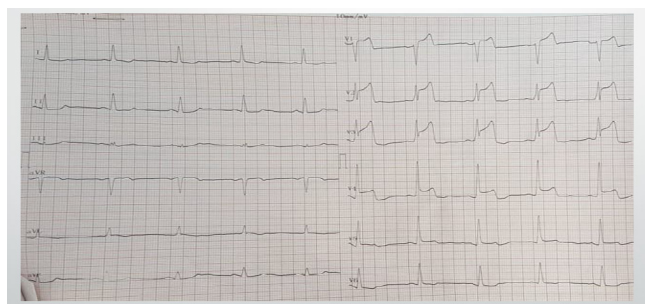
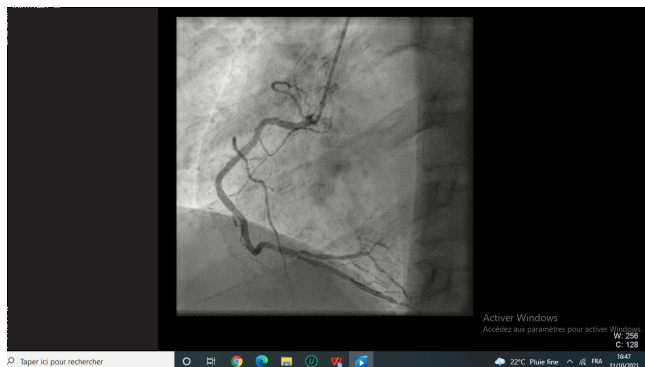
Aiman GHRAB, Zine Elabidine Ben Ali, Ali Khorcheni, Chaima Ghorbel, DALI ALA EDDINE, WAJJIH ABDALLAH, SAMI MILOUCHI

HABIB BOURGUIBA UNIVERSITY HOSPITAL OF MEDENINE, TUNISIA

We report a case of a 32-year-old male who experienced an ST-Segment elevation myocardial infarction in the inferior territory. Percutaneous coronary intervention was successful in restoring a TIMI 3 flow in the right coronary artery. The angiogram also showed a chronic total occlusion of the marginal artery. The patient had multiple cardiovascular risk factors: new onset diabetes, smoking and obesity. He received double antiplatelet therapy, ACE inhibitor, betablockers and statin with good in-hospital evolution.

Four months later, the patient presented to the emergency department with chest pain. The ECG showed ST-segment elevation in the anterior territory.





By the time the patient arrived at our Cath lab, he was pain free and the ECG showed no repolarisation abnormality. Coronary angiogram was normal and did not show any sign of stent thrombosis.

The analysis of the ECG monitoring during hospitalisation showed transient ST segment elevation often followed with malignant ventricular arrhythmias concomitant to chest pain episode especially in early morning.

The vasospastic origin was highly suspected.

We decided to optimize the treatment: stop betablockers, add calcium channel blockers and abolish smoking for good.

Three weeks later, the patient reconsulted the emergency department with chest pain. ECG showed no abnormalities, but troponin came back positive. The patient was hospitalized in our coronary care unit. During the first 24-hours, the patient had another episode of chest pain with ST segment elevation in the inferior territory. We decided to do an urgent coronary angiogram using the femoral artery to avoid using nitrates. It showed a TIMI 0 flow in the right coronary artery. The injection of intracoronary nitrates restored a TIMI 3 flow and normal coronary angiogram.

This case highlights the possible association of coronary vasospasm and atherosclerosis and the morbid interaction between the two entities.

**Keyword:** coronary vasospasm, myocardial infarction, young adult, case report.

Submission ID: 1094

### QUALITY OF LIFE AMONG PARENTS OF CHILDREN WITH CONGENITAL HEART DISEASES

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#### Introduction:

Congenital heart diseases (CHD) interfere with family life and can cause serious difficulties.

#### Aim:

The study examined parent health-related quality of life (HRQOL) among parents of 79 children with CHD and who were referred to the Pediatric department of SAHLOUL Teaching Hospital over 2 years (2019-2020).

#### Methods:

Parents' quality of life was evaluated with the «Medical Outcome Study Short Form 36» (MOS SF-36) in the Tunisian Arabic dialect version. We compared HRQOL among parents of children with severe CHD and parents of children with mild/moderate CHD (we used the ESC 2020 recommendations of classification of CHD complexity).

#### Results:

Out of 79 parents, 60 (75.9%) were women (sex ratio of 0.31) and 14 had children with severe CHD. Their average age was  $36.63 \pm 7.44$  years. The three areas of the MOS SF-36 that were most affected were: vitality ( $51.25 \pm 26.30$ ), general health ( $58.48 \pm 16.77$ ) and mental health ( $59.49 \pm 26.09$ ). The average physical score (PSC) and mental score (MSC) were  $77.83 \pm 16.26$  and  $64.96 \pm 24.69$  respectively. Parents of children with severe CHD had lower MSC as well as PSC than others but there was no statistically significant difference between the 2 groups in both MSC ( $p=0.128$ ) and PSC ( $p=0.585$ ).

#### Conclusion:

Our study showed that having a child with CHD may have a negative impact on the parents' HRQOL. However, there was no statistically significant difference between parents of severe CHD and those of mild/moderate CHD.

Submission ID: 1109

### PERSISTENT ST-SEGMENT ELEVATION DUE TO CARDIAC METASTASIS

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Interior Security Forces Hospital, Tunisia

#### Introduction:

Cardiac metastasis of oral carcinomas is rare; only few cases have been reported in the literature. Clinical findings in those with cardiac metastasis are non-specific. ECG features, if present, are also non-specific. and include ST elevation, atrial fibrillation, right bundle branch block and pathological Q-waves. Persistent ST segment elevation in the absence of Q waves seems to be a pathognomonic sign for tumor invasion of the heart

#### Case Presentation:

A 41-year-old woman had undergone surgery for left mandibular cancer followed by chemoradiotherapy. She presented to the emergency room for acute dyspnea. Physical examination found signs of right-sided heart failure. The blood pressure was 90/60 mmHg with a heart rate of 130 bpm. The electrocardiogram showed sinus tachycardia at 130 cpm associated to an incomplete right bundle branch block with diffuse ST-segment elevation. Troponin was elevated with a steady rate. Transthoracic echocardiography showed biventricular infiltration at the mid and apical segments with a large thrombus in the right ventricle partially enclosing the tricuspid valve. Coronary angiography demonstrated normal arteries. A computed tomography angiogram confirmed the biventricular tumor infiltration and demonstrated proximal pulmonary embolism. Lung, liver and bone metastases have also been noted. The patient received curative heparin therapy and was managed palliatively. She died approximately 1 month later.

#### Conclusion:

Cardiac metastasis of oral carcinomas is rare; only few cases have been reported in the literature. Clinical findings in those with cardiac metastasis are non-specific. ECG features, if present, are also non-specific.. Cardiac ultrasound is the key examination for screening and follow-up. Once diagnosed, treatment is palliative, with radiotherapy and/or chemotherapy.

Submission ID: 1120

### OSTIAL CORONARY ARTERY STENOSIS AFTER AORTIC VALVE REPLACEMENT

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Tunisia

#### Background

Aortic valve replacement (SAVR) accounts for a significant portion of cardiac surgeries in Tunisia. Despite advances in surgical techniques and postoperative care, complications after aortic valve replacement remain a leading cause of morbidity and mortality. The development of significant coronary ostial stenosis has been recognized as a rare but potentially serious complication of aortic valve replacement. Symptoms of proximal coronary artery lesions typically appear within the first 6 months after surgery and have rarely been identified beyond 1 year after SVAR. The purpose of this paper is to report our experience with this uncommon but potentially lethal condition.

#### Case report

We report the case of a 65-year-old man with a past medical history of hypertension, atrial fibrillation, severe aortic stenosis and important mitral regurgitation. He underwent surgical aortic and mitral valve replacement in June 2019. His preoperative evaluation was normal and his coronary angiogram did not reveal any evidence of significant stenosis. Aortic and mitral valve replacement were performed successfully. Postoperative transthoracic echocardiography (TTE) showed well-functioning mechanical prosthesis and no evidence of segmental wall motion abnormalities.

One year later, the patient was admitted to cardiology department for pressure-like exertional chest pain that appeared 6 months after the surgery. His physical examination was unremarkable. An 18-lead electrocardiogram did not show any sign of myocardial ischemia or infarction. Laboratory tests showed normal troponin levels. Echocardiography revealed a preserved left ventricular function with good hemodynamic profile of both aortic and mitral prosthesis. Coronary angiography was performed. It demonstrated a critical left ostial and main trunk stenosis. Our patient successfully underwent percutaneous coronary intervention (PCI) and stenting. The post-procedure clinical course has been uneventful.

#### Conclusion

The development of a significant coronary ostial stenosis has been recognized as a late complication of aortic valve replacement. It should be suspected in any patient with the onset of angina following aortic valve replacement especially those with normal preoperative coronary arteriograms. Therefore, we should continue to have a higher index of suspicion in these patients in order to interfere and treat this potentially lethal lesion.

Submission ID: 1121

### LONG-TERM RESULTS AFTER DRUG-ELUTING STENT IMPLANTATION IN DIABETIC COMPARED TO NON DIABETIC PATIENTS

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CARDIOLOGY A DEPARTEMENT, FATTOUMA BOURGUIBA UNIVERSITY HOSPITAL, MONASTIR, TUNISIA

#### Introduction:

In this retrospective, monocentric study we assessed the long-term results after drug-eluting stent implantation in diabetic patients compared to non-diabetic patients.

#### Methods:

A total of 421 consecutive patients (mean age 60.4 ± 10 years)

underwent percutaneous coronary intervention with drug-eluting stent implantation. They were classified into 2 groups according to their diabetic status: 1) diabetic patients (272); 2) non-diabetic patients (149). The primary endpoints were angiographically defined in-stent restenosis (ISR) rate, stent thrombosis, and major adverse cardiac event (MACE).

#### Results:

A mean clinical follow-up of 26,14 ± 17,7 months was obtained. The diabetic group had more hypertensive patients (51.1% vs. 32.2%, p<0.0001), less smoking patients (44.6% vs. 68.5%, p<0.0001), as well as a higher incidence of multivessel disease (39% vs. 24.8%, p<0.0001) and thrombotic lesions (4% vs. 1.3%, p<0.0001) compared to the non diabetic patients group. There was no significant difference between the two groups regarding the rate of dyslipidemia and the mean left ventricular ejection fraction. The in-hospital outcome was similar in both groups. During follow up, no significant differences in the incidence of death, in-stent restenosis or stent thrombosis were observed (7% vs. 2%, p=0.07, 18.2% vs. 11.6%, p=0.314, and 7.5% vs. 1.5%, p=0.109, respectively), but target lesion failure was more frequent in the diabetic group (12.4% vs. 4.7%, p=0.035). The rate of rehospitalization was lower in the non-diabetic group (27.9% vs. 14.8%, p<0.0001).

#### Conclusion:

The implantation of drug-eluting stents in diabetics is associated with excellent in-hospital and long-term results. However, the long-term effectiveness in diabetic patients is lower, because of the higher risk of new revascularization.

Submission ID: 1123

### LESION LENGTH IMPACTS LONG TERM OUTCOMES OF DRUG-ELUTING STENTS

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CARDIOLOGY A DEPARTEMENT, FATTOUMA BOURGUIBA UNIVERSITY HOSPITAL, MONASTIR, TUNISIA

#### Background:

Long lesions have been associated with adverse outcomes in percutaneous coronary interventions with bare-metal stents (BMS). However, the exact impact of lesion length on the short- and long-term outcomes of drug-eluting stent (DES) implantations is not well clear.

#### Methods and Results:

This study compared the impact of lesion length on angiographic and clinical outcomes of DES in a single-center retrospective registry. The population was divided into two groups based on lesion length: long lesions were defined as lesions ≥ 20 mm versus lesions less than 20 mm. The primary endpoints were angiographically defined in-stent restenosis (ISR) rate and major adverse cardiac event (MACE). 421 de novo lesions in 363 consecutive patients received DES. The mean follow-up duration was 26,14 ± 17,7 months. There was no significant difference between the two groups regarding the conventional cardiovascular risk factors (sex, diabetes, hypertension, smoking, dyslipidemia, or with regards to the reasons for hospitalization. Lesion length showed no correlation with ISR rates (20% vs 14.6%; p = 0.231), stent thrombosis (10.3% vs 3.8%; p = 0.071), TVR (4.6% vs 8.5%; p = 0.222) or TVF (7.6% vs 10.6%; p = 0.398). Furthermore, no significant difference was demonstrated for mortality (6% vs 4.9%; p = 0.447) and rehospitalization (24.1% vs 22.9%; p = 0.444).

#### Conclusions:

In our single-center retrospective registry, lesion length defined in two groups has no impact on the short-term (ISR) or long-term (MACE) outcomes of patients with DES implantation.

Submission ID: 1130

### **MORTALITY PREDICTIVE FACTORS IN YOUNG PATIENTS WITH HEART FAILURE (HF)**

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LA RABTA, TUNISIA

#### **Introduction:**

HF is an enormous clinical burden in adult medicine, it remains frequent even among young adults (<40 years old) causing deterioration of quality of life.

#### **Aim:**

Is to study predictive factors of mortality in HF among young population.

#### **Methods:**

Our study is prospective and descriptive. We have tracked 40 patients and followed them up over 1 year from september 2020 to september 2021, who were hospitalized in 'Adults' cardiology Department in Rabta hospital for management of acute HF. All echocardiographic exam were carried by transthoracic way (TTE). The majority 82.5% were explored by coronary angiography.

#### **Results:**

The mean age was 33 +/- 6. 65% men and 35% women. Patients were active smokers in 35%(14), 22,5% (9) had hypertension, 20% (8) diabetes mellitus, 12,5% (5) Chronic kidney disease . Obesity (BMI>= 30) and history of coronary artery disease CAD were both found in 5%(2) of cases. The mean left ventricular ejection fraction LVEF was 34.6+/-9. The principal cause of heart failure in our population was valvular herat disease in 25% followed by CAD 17.5%.

The tracking at one year showed 28 survivors, 4 people lost of sight and 8 deaths. The predictive factors of mortality found in our study were obesity p=0.038 and male gender p=0.037, the Clinical signs were right HF p=0.004 concording with right ventricular dysfunction p=0.044 in TTE and LVEF <30% p=0.038.

#### **Conclusion:**

While an uncommon diagnosis, young adults can present with HF secondary to a variety of etiologies. A high index of suspicion should be maintained when young patients present with active smokig, obesity , male gender and clinical or echocardiographic signs of right HF.

Submission ID: 1150

### **PERIPARTUM CARDIOMYOPATHY: A DISEASE WITH A MYSTERIOUS COURSE**

Mariem Drissa, Cyrine Aouji, Essia Chahnez Mousli, Habiba Drissa

Tunisia

#### **Introduction**

Peripartum cardiomyopathy (PPCM) is rare. The subsequent course of the disorder remains unclear. The purpose of this study was to identify the predictive factors of left ventricular (LV) recovery in patients with PPCM.

#### **Methods**

We retrospectively reviewed the records of 35 patients hospitalized for the diagnosis of PPCM in our department between 2009-2019. All patients were followed clinically and by means of echocardiography after 6 months and over one year later.

#### **Results**

the mean age was 33 ± 2years (22-44); 28 patients were multiparous, 17 women had multifetal pregnancies, 18 patients had presented severe preeclampsia. PPCM was diagnosed in the majority of cases in antepartum. Clinically, pulmonary oedema occurred in only 18

patients. Echocardiographic findings at admission revealed a dilatation of the left ventricle (LV) for all patients, with a mean ejection fraction (EF) of 26 % ±15. All patients received intravenous diuretics in case of acute heart failure. Converting enzyme inhibitors, beta blockers and mineralocorticoid were prescribed for respectively 18 and 15 patients. The minimum duration of treatment was about 6 months for 15 patients and over a year for the rest of the patients. Inotropic drug, and circulatory support: were necessary in 5 cases. Intrahospital mortality rate was 1 % and it was mainly due to cardiogenic shock. 12 patients (45%) had improved their LV ejection fraction (LVEF) within 6 months. After 24 months, 13 had totally recovered their LVEF and 5 patients had just a mild improvement of their LVEF. In multivariate analysis, we found that some factors were associated with a higher likelihood of recovery, specifically, the postpartum diagnosis of PCCM, an LVEF >30%, and a LV end diastolic diameter (LVEDD) <6 cm.

#### **Conclusion**

PCCM is an uncommon complication of pregnancy with an unknown etiology. Pre-eclampsia and multiparity seems to be strongly associated with PCCM. A part from diagnosing this disease, echocardiography can provide some valuable informations to predict the recovery prognosis while following the course of the disease which is still a mystery.

Submission ID: 1162

### **MEDICO-LEGAL ASPECTS OF SUDDEN CARDIAC DEATH AT WORK: A RETROSPECTIVE STUDY DURING 28 YEARS**

Dorra Oualha, Wissem Bedoui, Meriem Grayaa, Nidhal Haj Salem,

Tunisia

#### **Background**

Sudden death can occur in the workplace, favored by physical effort, stress, or other job factors (noise, heat, ...). To attribute these deaths to work conditions requires medico-legal investigations.

The aim of this study was to analyze the socio-professional characteristics of sudden cardiac death victims in the workplace and to discuss the medico-legal consequences.

#### **Methods**

It was a retrospective descriptive study including all cases of sudden deaths occurring in the workplace, conducted in the Department of Forensic Medicine at Fattouma Bourguiba University Hospital of Monastir over a period of 28 years.

#### **Results**

We identified 261 cases who died at work. Trauma was the main cause of death (71.9%) followed by electric shock (22.5%) and sudden death (17.2%, 46 cases).

At forensic autopsy, myocardial infarction secondary to coronary artery disease was the most frequent lesion (33%). Fifty percent of the remaining cases showed atheromatous coronary arteries without macroscopic lesions of the myocardium.

All victims were males aged over 40 years. Diabetes and hypertension were the most frequent pathologies in these victims.

Coronary artery disease was the main cause of death in guards (26.3%), with a peak in frequency on Mondays (6 cases). One case of severe aortic stenosis and one case of hemorrhagic stroke have been reported.

#### **Conclusion**

The majority of sudden death at work were due to cardiac causes. They were dominated by coronary disease and acute heart failure. Work-related stress is a risk factor for the development of cardiovascular complications. In these cases, medico-legal investigations including an autopsy with histological and toxicological samples to determine the cause of death are needed. Also, investigations of the accident circumstances and the professional factors (stress, effort, climate, noise...) are necessary to establish the causality.

Submission ID: 1165

### PREDICTIVE FACTORS OF CORONARY LESIONS IN POSITIVE EXERCISE TESTING

DRISSA MARIEM, OUMAIMA TAHAR, REFKA OUESLATI, ASMA BRAHIM, ASMA BOUSLIMI

LA RABTA HOSPITAL, TUNISIA

#### Introduction:

Coronary artery disease CAD is still frequent in our country, it has poor prognosis, altering the quality of life and has heavy socioeconomic repercussions. Early diagnosis is therefore crucial for ensuring the best quality of care using non invasive ischemia tests such as exercise ECG, an available and affordable exam.

#### Purpose:

Is to study the correlation between positive EE and significant lesions in coronary angiography CA.

#### Methods:

Our study is retrospective, descriptive including 51 patients hospitalised for chronic coronary syndrome in the « Adults » cardiology department of the Rabta hospital between Jnavier 2021 and octobre 2021. Our patients had EE and coronary angiography CA.

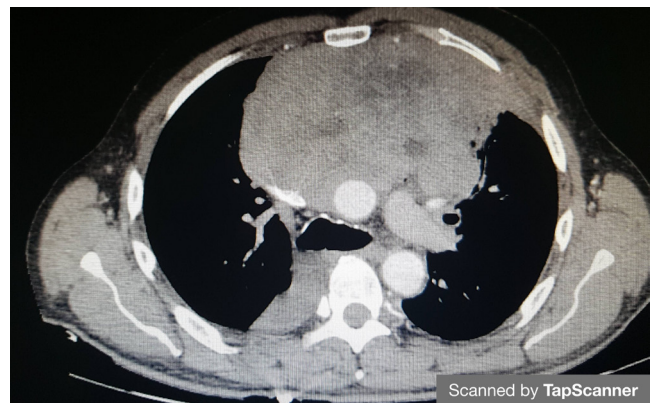
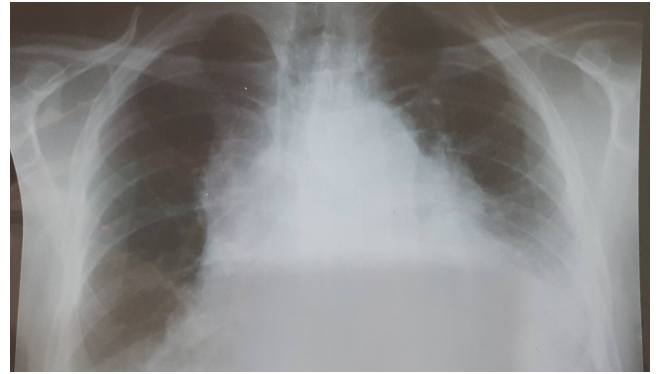
#### Results:

Mean age was 58+/-9 years old. 28(55%) men and 23(45%) women, 36(71%) patients had hypertension, 27 (53%) had diabetes mellitus, 8(15.7%) patients with history of CAD, 4(7.8%) patients with severe chronic kidney disease, 15 (29.5%) were active smokers. Left ventricular dysfunction was present in 8 patients (15.7%) and significant lesions in CA in 30 patients (58.1%).

Main correlation between positive EE and the presence of severe lesions in CA were found in active smokers patients  $p=0.003$ , male gender  $p=0.04$ , history of coronary artery disease  $p=0.014$ , men with CKD  $p=0.04$ . Nevertheless, young female patients (<45 years old) were more likely to have insignificant lesions in coronary angiography despite of positive EE.

#### Conclusion:

EE is useful to predict coronary lesions among patients suffering from CCS. In agreement with previous studies, active smokers, male gender with CKD and patients with history of CAD are more likely to have lesions in coronary angiography.



Submission ID: 1167

### NEURO ENDOCRINE CARCINOMA REVEALED BY A TAMPONADE: A CASE REPORT

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#### A case report

A 48-year-old man was admitted to our hospital, with complains of prolonged retrosternal tingling-type chest pain without irradiation aggravated on deep inspiration and relieved by the lean forward position associated with dyspnea, dysphagia to liquids then to solids, weight loss and asthenia since 2 months occurring gradually.



Physical examination showed a tachycardia at 106 bpm, polypnea, muffled heart sounds and turgor of jugular veins.

The patient's ECG showed diffuse microvoltage. Chest x-ray film showed cardiomegaly, para-hilar and para-cardiac opacities.

Laboratory data non were revealing C-reactive protein 7,23 mg/dl, WBC count are normal. An emergency echocardiogram showing a very abundant heterogeneous circumferential pericardial effusion. A puncture drainage was made urgently bringing back 250ml, The fluid was bloody and contained 45 g/l of protein. Cytopathological study of fluid showed tumor cytology.

A thoraco-abdomino-pelvic CT scan showing an anterior mediastinal mass primarily suggesting infiltrating thymoma with pericardial and pleural effusions of carcinomatous origin.

One week after the puncture, a control echocardiogram done showing recurrence of large circumferential effusion, variation in mitral flow 23%, dilated and compliant IVC, paradoxical septum. He was presented to the thoracic surgery staff but his file was not accepted since the mass is inoperable and even the pleuro-pericardial window was impossible. So a scanno-guided biopsy was made for the etiological confirmation and a radio-chemotherapy is planned afterwards.

#### Conclusion

Although infrequent, neuro endocrine carcinoma may present solely as tamponade. Thymomas often require emergency treatment due to their association with complications such as cardiac tamponade and cardiac failure. The late discovery makes the prognosis worse.

Submission ID: 1179

### PREDICTORS OF RESIDUAL SHUNT AFTER PERCUTANEOUS CLOSURE OF THE PATENT DUCTUS ARTERIOSUS IN LOWER WEIGHT INFANTS

dardouri safa, gribaa rim, ayoub meddeb, slim mehdi, ouanes sami, ben ali imen, el hraiech aymen, naffeti ilyes

Sahloul Hospital, Tunisia

#### Introduction:

Patent ductus arteriosus (PDA) is one of the most common congenital heart disease. Transcatheter closure of small to moderate sized PDAs is an established procedure. Several complications can arise during this procedure including the residual shunt.

#### Aim:

The objectif of this study was to determine the frequency, and the predictive factors of the occurrence of immediate angiographic, and distant echocardiographic residual shunt, during the percutaneous PDA closure procedure, in children of low weight less than 6 kg.

#### Materials and methods:

It was a mono-center retrospective study, which has included 33 patients in lower weight less than 6 kg, hospitalized in the cardiology department of Sahloul hospital for percutaneous closure of their PDA. This was during the period from September 2003 to June 2021.

#### Results:

The mean age of patients during cardiac catheterization was 10.6 ± 5.4 months. A clear female predominance was noted with a sex ratio of 2.6.

All patients were full-term newborn. Success rate of our procedure was 90.9% with 30 devices that were well deployed, and three cases of failure (9.1%). The ADO was the most deployed device with a percentage of 45.5% for ADOI and 21.2% for ADOI. At the angiographic check-up at the end of the procedure and after release of the device, a residual shunt was noted in 14 patients among the 30 patients who had successfully closed, ie in 46.7% of cases. It was in all cases insignificant.

On echocardiographic check-up done systematically before the patient was discharged from the hospital, the residual shunt was still present in 7 of the 14 patients, and was always minimal. The multivariate analysis of the factors likely to increase the risk of residual shunt at the end of the procedure identified 4 parameters significantly correlated with this risk.

An age of less than 6 months, a larger pulmonary diameter of the PDA, the presence of a pulmonary artery hypertension and a type C of PDA.

#### Conclusion:

Catheter-based PDA closure is the procedure of choice for ductal closure. Residual shunt should not be a deterrent to use of this method.

Submission ID: 1213

### MANAGEMENT OF ACUTE CORONARY SYNDROME WITHOUT ST-SEGMENT ELEVATION IN WOMEN

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LA RABTA HOSPITAL, TUNISIA

#### Introduction:

Despite the persistent perception that CAD is a man's disease, it is often the most common cause of death in women, responsible for 7 times more deaths than breast cancer.

#### Methods:

We led a retrospective, observational and monocentric study including 200 patients (130men and 70 women) admitted for NSTEMI-ACS to our the cardiology department the university hospital la Rabta between January 2016 and December 2020. All epidemiological, clinical, therapeutic and prognostic data were compared in a gender perspective.

#### Results:

It was observed that women were more often hypertensive, sedentary, obese and with less smoking rates than men. Presentation and symptoms of coronary artery disease in women are often atypical and misleading. Despite their higher ischemic risk (64% for women versus 37% for men with high risk criteria) ( $p=0,01$ ), women seem to benefit less of invasive strategy. Coronary angiography when performed often shows non-obstructive coronary disease (16% in women versus 6% in men) and a coronary revascularization is less frequently proposed in women (67% versus 85%) ( $p = 0,001$ ).

#### Conclusion:

In spite of its importance and major impact, CAD in women is under-diagnosed and often associated to higher risk criteria than men. Yet, women remain undertreated with less adequate therapeutic strategies.

Submission ID: 1222

### PROGNOSIS OF PATIENTS CONSULTING FOR ACUTE CORONARY SYNDROME: ST-ELEVATION MYOCARDIAL INFARCTION (STEMI) BY GENDER

AHMED BOUHLEL, ROUA CHOUHI, MEHDI SLIM, BALKISS KHALAF, RIM YOUSSEF, HAKER YAACOUBI, HOUDA BEN SALAH, LOTFI BOUKADIDA, ASMA ZORGATI, RIADH BOUKEF

Emergency department Sahloul Sousse, Tunisia

#### Introduction:

Cardiovascular disease is the leading cause of death in women. This excess mortality raises questions about possible specificities affecting the pathophysiology, diagnosis and prognosis

#### Objective:

To study the impact of on the prognosis of STEMI in the emergency room.

#### Materials and methods:

All emergency patients diagnosed with STEMI are included. We divided the patients into two groups according to sex: group I: group of men and group II: group of women. All demographic, clinical and biological characteristics of the patients are noted. Statistical analyzes are performed using SPSS18.

#### Results:

A predominance of men is observed in our population: 80.6% of the population are male and 19.6% are women. The outcome at one month is significantly different between the two groups in our study ( $p = 0.024$ ). Indeed, all of the men benefited from coronary angioplasty, and PAC (coronary aorto bypass). The reconsultation rate is observed more among women. The MACE effects and mortality are observed in the group of women with still significant differences (0.02, 0.01 respectively). Intra-hospital mortality is observed in women more than men. While no significant difference between groups in mortality one month after admission to the emergency department.

#### Conclusion:

Although female patients have a higher cardiovascular risk profile and a reconsultation rate higher, no gender-based prognostic difference was seen in the emergency.



Submission ID: 1231

### MANAGEMENT OF CHEST PAIN IN COVID-19 PATIENTS IN THE EMERGENCY DEPARTMENT

SALMA BEN SAID, OUSSEMA ACHECHE, MEHDI SLIM, RIM YOUSSEF, HAJER YAACOUBI, HOUDA BEN SALAH, LOTFI BOUKADIDA, ASMA ZORGATI, RIADH BOUKEF

Emergency department Sahloul Sousse, Tunisia

#### Introduction:

The emergence of the SARS-CoV-2 virus responsible for the COVID-19 outbreak has given rise to a new disease whose outlines are still not perfectly known. While the first data suggested that the virus was primarily affecting the lungs, the most recent publications highlight a large pleomorphism of the disease, responsible for multiple organ failure, the first of which is cardiac involvement mainly manifested in chest pain.

The objective of this study is to assess the management of chest pain in patients with COVID 19 infection.

#### Materials & Methods:

This is a monocentric observational study carried out in the emergency department including patients consulting the COVID unit for chest pain and having a positive COVID PCR.

#### Results:

We included 439 patients with a mean age of  $49.86 \pm 12$ . Sex ratio (M / F) of 1.2. The most frequent cardiovascular risk factors in our population are hypertension in 16.3% then smoking in 16%, coronary heart disease in 12.5% and diabetes in 7.3%.

8.6% of patients consulting for chest pain were admitted. Of those patients, 9.8% presented with acute respiratory distress syndrome ARD and 0.3% had pulmonary embolism. The outcome was favorable in the majority of cases; 21% get worse and the course was fatal in 7.8% of patients. On Day 15, 12.3% of patients still had chest pain.

#### Conclusion:

Chest pain in COVID19 infection is a frequent symptom that requires a well-conducted diagnostic approach that can hide a life-threatening condition.

Submission ID: 1238

### PERFORMANCE OF TIMI SCORE TO PREDICT MAJOR ADVERSE CARDIAC IN PATIENTS WITH ACUTE CORONARY SYNDROME (ABOUT 500 CASES)

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Emergency department Sahloul Sousse, Tunisia

#### Introduction:

It is currently known that in cases with potential diagnosis of ischemic chest pain, screening high risk patients for adverse outcomes would be very helpful. The objective of this work is to determine the Performance of the TIMI score in the prediction of occurrence of major cardiovascular events (death, myocardial infarction, anginal recurrence, other embolic complication) in our emergency patient population for an ACS ST- in the short and medium term.

#### Methods:

Transverse descriptive study. N = 500 NSTEMI patients in the Emergency Department. General data, as well as clinical and biological data, were collected. The TIMI score was calculated on admission. Patients were supported according to the protocol of the service. Follow-up at 6 months and 1 year was performed.

#### Results:

Mean age = 62 years.sex ratio = 1.5. The low risk group (TIMI 0 - 2) included 79 patients (16%), intermediate risk (TIMI between 3-4) 247 patients or 49.4% and the high-risk group (TIMI> 4) 174 patients or 34.6%. For the low-risk group MACE occurred at 6 months in 12% of cases, and for the high-risk group 25.8% with a significant difference ( $p = 0.014$ ). At 12 months, the values were respectively 11.4% and 32.7% ( $p = 0.045$ ). It was noted that raising the TIMI score by 1 point increases the risk of occurrence of MACE by 10.4%.

#### Conclusion:

The results of this work suggest that the TIMI score plays an important role in predicting the occurrence of MACE in the short and medium term.

Submission ID: 977

### SHORT-TERM PROGNOSIS OF ACUTE CORONARY SYNDROME IN THE ELDERLY

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Tunisia

#### INTRODUCTION:

ACS in the elderly is a serious event responsible of high mortality. Therapeutic means remain underutilized and hospital care remains not well codified given the fragility of this population. The aim of our study is to analyze the factors associated with major cardiovascular events (MACE) and bleeding complications occurring after ACS in the elderly.

#### METHODS:

To meet our objective, we conducted a descriptive and retrospective study on 158 subjects over the age of 75 hospitalized in the cardiology department of the Hédi Chaker hospital in Sfax for an ACS between January 1, 2018 and July 31, 2019

#### RESULTS:

Our population comprises 158 patients, divided into 106 with NSTEMI-ACS and 52 with STEMI, with an average age of 79.78 years [75-97]. The average length of hospital stay was 6.39 days. Major cardiovascular events during hospitalization were observed in 3.16%, Acute or subacute stent thrombosis was observed in 3.8%, and Four patients (2.5%) died. Haemorrhagic complications are objectified in 7% of patients, mainly in the form of minimal and minor haemorrhages found respectively in 5.1% and 1.3% of patients. Only one patient (0.6%) with NSTEMI-ACS experienced major bleeding in the form of upper gastrointestinal bleeding which required transfusion. The factors associated with major intra-hospital cardiovascular events (MACE) were tachycardia on admission (OR = 3.9; p = 0.0048), initiation of catecholamines (OR = 4; p = 0.026), heart failure (OR = 17; p <0.01), major rhythm disturbances (VT / VF) (OR = 17; P <0.001), inferior electrical territory (OR = 5; p = 0.024), tri-cell status (OR = 4.4; p = 0.036), the right coronary artery as the culprit artery (OR = 9; p = 0.003), stents with a diameter of less than 3 mm (OR 5.7; p = 0.007); no reflow (OR 13.5; p <0.001). Regarding the factors associated with intra-hospital hemorrhagic complications, our study demonstrated the presence of neoplasia (p = 0.07), the exploration time which exceeded 6 h (p = 0.002), tachycardia (p = 0.053), catecholamines (p = 0.003), major rhythm disturbances (VT / VF) (p = 0.016), anemia (p <0.001), the femoral route on coronary angiography (p <0.001) and TIMI Initial 0 (0.025)

#### CONCLUSION:

Despite progress in the management of ACS, the mortality of elderly subjects remains very high, our study confirms the high risk of bleeding in the population of elderly coronary patients, which remains a factor limiting the various therapeutic strategies.

Submission ID: 982

### REVERSED RIGHT VENTRICULAR MODELING AFTER PERCUTANEOUS MITRAL VALVE CLIPPING IN PATIENTS WITH SEVERE FUNCTIONAL MITRAL REGURGITATION

Osama Rifaie, Reda Abulatta, Hesham Naeim, Osama Amoodi, Ibrahim Nosseir, Khaled Alkhashab, Tamer Ragab

Ainshams university, Egypt

#### Background:

Percutaneous mitral valve clipping (PMVC) is being used successfully in the management of severe functional mitral regurgitation (MR) in patients with high surgical risk. However, the impact of (PMVC) on right ventricular volumes and functions is not clear.

#### Aim:

The aim of the present study was to assess the impact of (PMVC) (in both short and long terms) on right ventricular (RV) volumes and functions using trans-thoracic echocardiography.

#### Methods:

The study population included 37 patients with severe (MR), and congestive heart failure who were at high surgical risk. The mean age was 61±14 years, 9 (24.3%) were males. (PMVC) was successfully done for all patients. All had clinical and echocardiographic follow up at 6 and 12-months post (PMVC).

#### Results:

MR showed significant improvement after (PMVC). MR was less than grade II in 29(78 %) of patients at 6 months and persisted at 12 months (P = 0.0001). Similarly, tricuspid regurgitation (TR) showed marked improvement.

Severe (TR) was seen in 29 patients (78%) before), but decreased to 7 patients (18.9%) after (PMVC) (P=0.004).

Left ventricular ejection fraction (LVEF) improved from 32.63±13.35% at base line to 36.31±13.28 % at 6 months(P=0.003).

This was maintained at 12 months (35.38±91%) Table 1 shows the changes in RV end diastolic volume (RVDV);

RV end systolic volume (RVSV) RV ejection fraction (RVEF), Tricuspid annulus plane systolic excursion (TAPSE),

RV longitudinal systolic function by tissue Doppler imaging (TDI) as well as peak systolic pulmonary artery pressure (PASP).

#### Conclusion:

(PMVC) induced a significant reverse remodeling of RV by decreasing both (RVDV) and (RVSV). Moreover, it improved longitudinal RV systolic function as well as (RVEF). This was maintained up to one year follow up.

Submission ID: 996

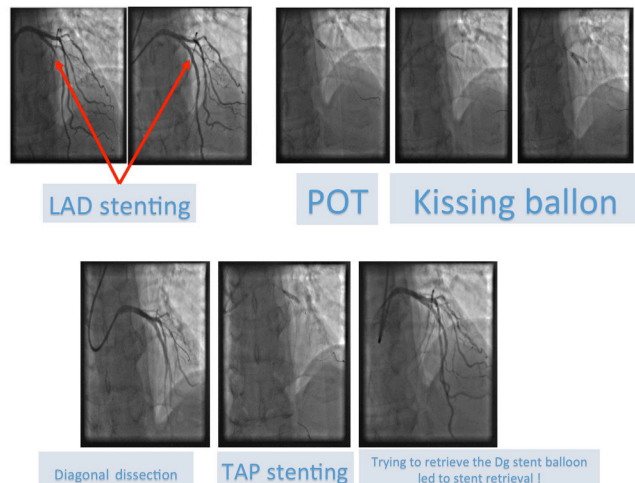
### UNINTENDED STENT EXTRACTION: WHEN A BIFURCATION BRINGS ANOTHER ONE ...

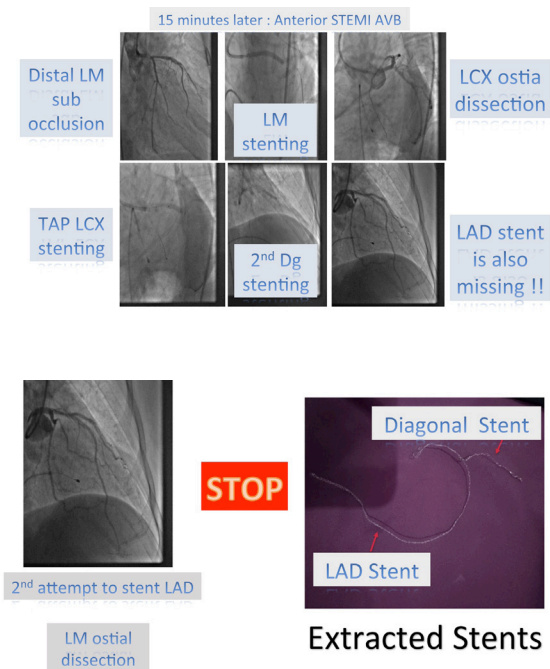
KARA MAAMAR, AIT MOKHTAR OMAR, AZZOUC ABDELMALEK, BAOUNI MOHAMED MEHDI, BENKHEDDA SALIM

CHU Mustapha bacha A2, Algeria

#### Introduction:

We report the case of a 60 years old who presented to the Cath lab for an elective angiography in the context of a chronic coronary syndrome. Angiography found a significant stenosis of the LAD Diagonal bifurcation Medina 0-1-1 with a significant ischemia and viability in scintigraphy. Elective angioplasty was decided and provisional stenting of the LAD was performed. Proximal optimization technique followed by kissing resulted in the diagonal dissection. TAP stenting was decided and performed. Retrieving the balloon was impossible and it finally led to the retrieval of the diagonal stent. While trying to stent the diagonal for the 2nd time, the patient presented a cardiogenic shock following an anterior STEMI and a complete atrioventricular bloc. Angiographically, this corresponded to a thrombotic sub occlusion of the distal LM. Stenting of the LM was performed successfully but this came with the cost of





circumflex ostia dissection; hopefully treated with stenting. To cap it all, we realized that the LAD stent was also missing. Having a careful second look to the material retrieved previously, we discovered the LAD stent attached to the diagonal's. A second attempt to stent the LAD led to a small dissection of the LM ostia. We decided to stop the procedure at this point as the patient was stabilized.

Submission ID: 1007

### STUDY OF RIGHT VENTRICULAR REMODELING AFTER PERCUTANEOUS MITRAL VALVE CLIPPING IN PATIENTS WITH SEVERE FUNCTIONAL MITRAL REGURGITATION

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Ainshams university, Egypt

#### Background:

Percutaneous mitral valve clipping (PMVC) is being used successfully in the management of severe functional mitral regurgitation (MR) in patients with high surgical risk. However, the impact of (PMVC) on right ventricular volumes and functions is not clear.

#### Aim:

The aim of the present study was to assess the impact of (PMVC) (in both short and long terms) on right ventricular (RV) volumes and functions using trans-thoracic echocardiography.

#### Methods:

The study population included 37 patients with severe (MR), and congestive heart failure who were at high surgical risk. The mean age was  $61 \pm 14$  years, 9 (24.3%) were males. (PMVC) was successfully done for all patients. All had clinical and echocardiographic follow up at 6 and 12-months post (PMVC).

#### Results:

MR showed significant improvement after (PMVC). MR was less than grade II in 29(78 %) of patients at 6 months and persisted at 12 months ( $P = 0.008$ ). Similarly, tricuspid regurgitation (TR) showed marked improvement. Severe (TR) was seen in 29 patients (78%) before, but was seen only in 7 patients (18.9%) after (PMVC) ( $P=0.004$ ). Left ventricular ejection fraction (LVEF) improved from  $32.63 \pm 13.35\%$  at base line to  $36.31 \pm 13.28\%$  and  $34\%$  at 6 months ( $P=0.003$ ) This

was maintained at 12 months ( $35.38 \pm 9.1\%$ ). RV end diastolic volume (RVDV) decreased from  $58 \pm 20.8$  ml to  $50.9 \pm 20.7$  ml and  $52.9 \pm 31.9$  ml at 6 months and one year after (PMVC) respectively ( $P=0.001$ ). RV end systolic volume (RVSV) decreased from  $39.9 \pm 16.9$  ml and  $32.4 \pm 20.4$  ml and  $32.4 \pm 20.4$  ml at 6 months and one year respectively ( $P=0.004$ ). RV ejection fraction (RVEF) increased from  $34.1 \pm 9.9\%$  to  $42.3 \pm 12.8\%$  at 6 months ( $P=0.001$ ) and  $45 \pm 18.3\%$  at one year respectively. Tricuspid annulus plane systolic excursion (TAPSE) increased from  $1.7 \pm 0.57$  cm to  $2.0 \pm 0.7$  cm and  $1.9 \pm 0.6$  cm at 6 months and one year respectively. ( $P=0.001$ ). RV longitudinal systolic function by tissue Doppler imaging (TDI) increased from  $10.5 \pm 2.3$  cm/s to  $13.9 \pm 3$  cm/s and  $12.2 \pm 2$  cm/s at 6 months and one year respectively. Peak systolic pulmonary artery pressure (PASP). Dropped from  $50.4 \pm 13.9$  mmHg to  $42.7 \pm 13.6$  mmHg and  $42.3 \pm 13.3$  mmHg at 6 months and one year respectively.

#### Conclusion:

(PMVC) induced a significant reverse remodeling of RV by decreasing both (RVDV) and (RVSV). Moreover, it improved (TDI) as well as (RVEF), probably due to decrease in MR and (PSAP). This was maintained up to one year.

Submission ID: 1082

### SEX DIFFERENCES IN CLINICAL AND ANGIOGRAPHIC CHARACTERISTICS IN ACUTE CORONARY SYNDROME PATIENTS IN DAKAR

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HOPITAL PRINCIPAL DAKAR, SENEGAL

#### Background

Coronary artery disease (CAD) is in relentless progression, along with the adoption of western lifestyle in sub-Saharan Africa. In Senegal, the prevalence of acute coronary syndrome (ACS) rose from 5% to 12% in Dakar during the last 20 years. That increase was observed in both women and men, and according to current data, the former pay the heaviest price in terms of mortality compared to men. In this study, we aim to retrospectively assess the clinical characteristics and angiographic profile of ACS in women compared to men in a tertiary care center in Dakar.

#### Methods

In this study were retrospectively analyzed and compared data between men and women among 133 patients who underwent coronary angiogram for ACS in 2 tertiary centers from February of 2019 to January 2020.

#### Results

A total of 133 patients were included in our study with 97 men (72.9%). The mean age was  $58 \pm 13.6$  years, women were older than men ( $61.4 \pm 14.3$  years vs  $56.6 \pm 13.5$  years ( $p=0.07$ )). Hypertension, sedentary lifestyle and obesity were significantly more frequent in women (69.4%, 52.7% and 19.4%) when compared to men (38.8%, 25.7% and 6.19%) respectively, ( $p=0.001$ ; 0.002 and 0.03). Smoking was in contrast less frequent in women (2.8%) versus 44.3% in men, ( $p<0.001$ ). The mean time from diagnosis to coronary angiography was not statistically different regardless of the presentation mode. On coronary angiogram, single vessel disease was most common (36.1% of men vs 33.3% of women) followed by triple vessel disease (24.7% vs 19.4% respectively). The left anterior descending artery was the most commonly affected vessel (84.4% of men vs. 61.1% of women) in both sexes followed by the left circumflex artery. The left main stem was diseased similarly in both genders (around 8%). The majority of patients had low SYNTAX score but more often women than men (97.2% vs 92.78%,  $p=0.04$ ). Among all the patients, 65 (48.9%) underwent PCI with no statistical difference between men and women.

#### Conclusion

In our study, women with ACS were older, had more cardiovascular risk factors but less angiographic extent of disease than men.

Submission ID: 1115

### STEMI AND DIABETES: MANAGEMENT AND IN HOSPITAL MORTALITY

SKANDER BOUCHNAG, MEJDI BEN MESSAOUD, YASSINE KALLELA, NIZAR IBN MECHRI, MEHDI BOUSSAADA, NIDHAL BOUCHAHDA, MAJED HASSINE, MARWEN MAHJOUB, FETHI BETBOUT, HABIB GAMRA

CARDIOLOGY A DEPARTEMENT, FATTOUMA BOURGUIBA UNIVERSITY HOSPITAL, MONASTIR, TUNISIA

#### Introduction:

Diabetes is a major cardiovascular risk factor of coronary artery disease including STEMI. A better understanding of the in-hospital mortality risk factors is necessary

#### Aim:

The objectives of our study were to detail the management of diabetic patients admitted for STEMI and to specify their intra-hospital prognosis

#### Materials and methods:

It was a retrospective study including diabetic patients admitted for STEMI. These patients were selected from the MIRAMI (Monastir Acute Myocardial Infarction) registry which included 2021 patients admitted for STEMI in the cardiology department of Fattouma Bourguiba university hospital during the period between January 1995 and December 2019.

#### Results:

Our study included 791 diabetic patients (39.1% of the MIRAMI registry population). The mean age was  $60.68 \pm 11.13$  years with a marked male predominance (75%). Urgent reperfusion therapy (59.8% vs. 51.9%;  $p < 0.001$ ), with PAMI (24.4% vs 23.8%;  $p = 0.403$ ) or thrombolysis (28.1% vs. 35.4%;  $p < 0.001$ ), was less indicated in diabetic patients ( $p < 0.001$ ). However, there was a significant tendency to increase the indication of PAMI and out-of-hospital thrombolysis in diabetic patients over the years of study ( $p = 0.02$  et  $0.001$  respectively). The success of thrombolysis (49.5 % vs 35.8 %;  $p < 0,001$ ) and PAMI (90.1 % vs. 90.4 %;  $p = 0.906$ ) was less frequent in diabetic patients. In the setting of diabetes, multivessel coronary artery disease was more frequent ( $p = 0,007$ ). Concerning in-hospital prognosis, hemodynamic complications (heart failure and cardiogenic shock) and mortality were significantly higher in the presence of diabetes ( $p < 0.001$ ,  $p = 0.015$  et  $p < 0.001$  respectively). Independent predictors of this mortality were: heart rate greater than 100 bpm on admission ( $p = 0.011$ ), PAMI failure ( $p < 0.001$ ), VT ( $p = 0.032$ ), VF ( $p = 0.006$ ) and cardiogenic shock ( $p = 0.002$ ).

#### Conclusion:

Our study showed that diabetic patients admitted for STEMI are less frequently reperfused and they have a worse in-hospital prognosis compared with non-diabetic patients.

Submission ID: 1137

### THROMBOLYSIS IN ACUTE MYOCARDIAL INFARCTION :MONASTIR EXPERIENCE

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CARDIOLOGY A DEPARTEMENT, FATTOUMA BOURGUIBA UNIVERSITY HOSPITAL, MONASTIR, TUNISIA

#### Introduction:

Thrombolysis has become a well-established alternative in the management of acute myocardial infarction (AMI). The timing of the initiation of thrombolytic agents is important in determining outcomes.

#### AIM:

We report our experience in establishing thrombolysis as a routine part of the management of patients with AMI through the MIRAMI (Monastir Acute Myocardial Infarction) registry; with particular reference to the effectiveness of the policy, safety and delays in administration.

#### Patients and Method:

The MIRAMI registry is a single centre registry, including 1686 patients admitted for AMI from January 1995 to December 2015.

#### Results:

Thrombolysis represented 34.3% (578 patients). The majority of these patients were male (85.3%), and the mean age was  $58.48 \pm 12.23$ . The most prevalent cardiovascular risk factors were smoking (71.8%), diabetes mellitus (32.2%), and systemic arterial hypertension (28.7%). The mean interval between onset of infarction symptoms and initiation of thrombolytic therapy was  $3,92 \pm 2,79$  h, however, more than half (55, 7%) were treated before 3 hours. Prehospital thrombolysis represented 37.2%, with a statistically significant ( $p < 0.001$ ) increase over the years. The most used fibrinolytic drug was streptokinase (87.7%). The failure of thrombolysis was observed in 73 cases (12.6%) requiring rescue angioplasty. The complications rate was 9.5%, essentially represented by hypotension (30 patients), and bleeding (23 patients). Two cases of allergic reactions have been reported. The mortality rate was 8% (46 patients). Age, the use of vasopressor drugs, and artificial ventilation were the independent predictors of mortality.

#### Conclusion:

Thrombolytic therapy very often is the only way in treating acute myocardial infarction. Data of our hospital experience do not dramatically differ from worldwide data. More efforts should be made to improve thrombolytic delivery times.

Submission ID: 1154

### RELATIONSHIP OF LIPOPROTEIN (A) AND LOW-DENSITY LIPOPROTEIN (LDL) CHOLESTEROL WITH GENSINI SCORE IN CORONARY ARTERY DISEASE

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#### Background:

Elevated levels of lipoprotein (a) (Lp(a)) and low-density lipoprotein (LDL) cholesterol cause alterations associated with increased risk of atherosclerotic cardiovascular disease (CVD). Lp(a) is an LDL-like particle covalently bound to the glycoprotein apolipoprotein (a) (apo(a)) and has atherothrombotic and proinflammatory properties. Various angiographic scoring classification systems exist to provide an objective quantification of CAD, including the Gensini Score. We investigated the relationship of Lp(a) and LDLc concentrations with the severity of coronary artery disease (CAD).

#### Material & Methods:

A total of 310 subjects were recruited for suspected or known coronary atherosclerosis at the department of cardiology in Fattouma Bourguiba Hospital. Based on the median of GS, CAD subjects were separately divided into two groups, low GS (<40), and high GS ( $\geq 40$ ). LDLc was estimated by the Friedewald equation and Lp(a) measurements were carried out by means of the turbidimetric method (Cobas Integra 600, Roche). We used Statistical Package for Social Sciences (SPSS, version 23.0), for data analysis.

#### Results:

Lp(a) levels ranged from 2.3 to 2258.0 mg/mL, median = 110.0 mg/mL and LDL levels ranged from 0.1 to 6.7 mg/mL, median = 2.6. High levels of Lp(a) and LDL were not significantly associated with high levels of Gensini score ( $>40$ ) ( $p = 0.282$ ;  $p = 0.575$ ). Moreover, high levels of Lp(a) and LDL were not significantly associated with stenosis degree and diseased vessels number.

#### Conclusion:

Although Lp(a) and LDLc are important risk factors for atherosclerosis, their atherogenesis didn't show significant association with the severity of CAD according to GS. Lp(a) and LDLc levels might not contribute to the assessment of patients at high cardiovascular risk probably because of their proinflammatory effects and lipid-lowering drugs use.

Submission ID: 1158

### RELATIONSHIP OF RS1800796 -G572C VARIANT WITH SERUM INTERLEUKIN-6 LEVELS, AND IN-STENT RESTENOSIS IN TUNISIAN PATIENTS AFTER PERCUTANEOUS CORONARY INTERVENTION

Bouzidi Nadia, Habib Gamra, Salima Ferchichi

Clinical and molecular biology unit (UR 17ES29) - University of Monastir - Faculty of Pharmacy - Tunisia

#### Background:

It has been shown that Interleukin-6 (IL-6) levels were involved in the development of coronary artery disease (CAD). In-stent restenosis (ISR) is a primary complication of percutaneous coronary intervention (PCI) including biological and mechanical factors such as local inflammatory response. This study aimed to investigate whether the single nucleotide polymorphism -G572C (rs1800796) of IL-6 gene was associated with the risk of ISR and circulating IL-6 levels in Tunisian population.

#### Methods:

This study recruited 67 patients who received stent implantation and 39 were diagnosed with ISR after PCI during the one-year follow-up period. Based on coronary angiography, the cases were divided into ISR and non-ISR groups. ISR was defined as a reduction in lumen diameter by over 50% after PCI. The IL-6 G572C (rs1800796) polymorphism was genotyped, and the IL-6 concentrations were measured.

#### Results:

Serum IL-6 levels were high in both patients groups (No ISR: 7.8 (2.1-139.6) pg/mL and ISR: 7.9(3.9-1957.0) pg/mL) and difference was not statistically significant,  $P > 0.05$ ). IL-6 G572C polymorphism frequencies of the MTHFR gene patients were not associated with ISR (No ISR: GG: 53.6, GC: 25.0, CC: 21.4% vs. ISR: GG: 17.9, GC: 23.0, CC: 9.0 %;  $p = 0.199$ ). The distribution of IL-6 levels according to G572C genotypes didn't show significant association  $p > 0.05$ . IL-6 (AUC 0.52  $p = 0.7$ ) failed to provide significant results in receiver-operating characteristic analysis.

#### Conclusions:

Circulating levels of IL-6 were not influenced by G572C polymorphism and highest levels were not associated with ISR one year after PCI. Despite its involvement in the pathogenesis of atherosclerotic disease, IL-6 levels and its G572C variant have no predictive value for identifying patients with recurrent restenosis.

Submission ID: 1164

### SERUM AMYLOIDE A AND HIGH SENSITIVITY C-REACTIVE PROTEIN IN ACUTE PHASE OF ACUTE CORONARY SYNDROME WITH ST-SEGMENT ELEVATION

Bouzidi Nadia, Gamra Habib, Ferchichi Salima

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#### Background:

Atherosclerosis is widely accepted as a chronic inflammatory disease initiated by different vascular and extravascular sources. An unstable, and subsequently ruptured, atherosclerotic coronary plaque with superimposed thrombosis constitutes the most common, general, and pathological background of the acute coronary syndrome (ACS). SAA and CRPus, markers of acute phase reactants appear as early markers of atherogenesis.

Our study aim to determine the interest of these markers in ACS with ST-segment elevation ACS(ST+).

#### Methods:

The present study consisted of 31 patients (19 women and 12 men, mean age  $63 \pm 12$  years), who were admitted to cardiology departement CHU Farhat Hached Sousse for ACS with ST-segment

elevation. The control group consisted of 55 healthy subjects (mean age  $40 \pm 10$  years). HsCRP concentrations were measured by Immunoturbidimetry using a COBAS INTEGRA 400 analyser (Roche). Serum amyloid A(SAA) level was determined by nephelometric method using a BN ProSpec (Dade Behring Diagnostic, Marburg, Germany). Database management and statistical analyses were carried out using SPSS (Statistical Package for the Sociological Sciences), version 17.0.

#### Results:

In the SCA, our results showed: a statistically significant increase hsCRP and SAA in patients with ACS(ST+) compared with the control group (hsCRP:  $9.79 \pm 6.85$  vs  $1.3 \pm 0.8$  mg/L ( $p=0.001$ ); (SAA:  $6.94 \pm 2.87$  vs  $3.06 \pm 2.16$  mg/L ( $p=0.001$ ). Both inflammatory markers exhibit a statistically significant correlation ( $p=0.01$ ) after thrombolysis.

#### Conclusion:

In post infarction, CRPus and SAA increase, reflecting and participating perhaps in the inflammation that accompanies tissue necrosis. SAA together with hs-CRP have been associated with a major number of complicated lesions in patients with ACS.

Submission ID: 1224

### RISK OF TOBACCO IN THE DEVELOPMENT OF ACUTE CORONARY SYNDROME

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Emergency department Sahloul Sousse, Tunisia

#### Introduction:

STEMI is most frequent with younger patients and smoking is the major cause of the disease occurrence

#### Purpose:

The aim of this study is to accuse tobacco as a major and independent risk factor of the occurrence of SCA ST + in a younger population.

#### Materials and methods:

Retrospective study is based on all the patients consulted for chest pain in the emergency room of sahloul and who are diagnosed with STEMI according to a pathological ECG which shows a persistent segment ST elevation. The patients are divided into two groups: smokers and non-smokers groups. All the demographic, clinical and biological characteristics of patients are noted. Statistical analyzes are carried out by using SPSS18.

#### Results:

638 patients included in a study of which 322 were smokers and 316 were non-smokers. Comparing the two groups according to age, the smokers are younger than the non-smokers with a significant difference ( $p < 0.001$ ). A significant difference among gender-based groups. The difference is also notable in the become STEMI patients admitted to the ER within a month: in fact all smoking patients resorted to use angioplasty after a pathological coronary angiography; Among them, 5.6% of smokers group manifested a MACE event in one month versus 2.1% of non-smokers with a significant difference ( $p = 0.004$ ). however, the re-consultation rate is in non-significant between the two groups.

#### Conclusion:

Smoking represents an essential prevention challenge for all players in public health, in particular emergency room physicians and cardiologists. Better control of this factor, in primary prevention, would avoid cardiovascular accidents at youngest possible age, and, in secondary prevention, would reduce the number of cardiovascular accidents by the half within patients who stop smoking.

Submission ID: 1005

### WILKINS SCORE FOR SEVERE MITRAL STENOSIS: WHAT IS BEYOND THE PROCEDURAL CONSIDERATIONS?

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France

#### Introduction:

Percutaneous transvenous mitral balloon valvotomy (PTMV) optimal results are usually achieved when echocardiographic Wilkins score (WS) is  $\leq 8$ . WS from 9 to 11 represent a gray zone in which only some patients have good results.

#### Materials and methods:

A retrospective review of clinical records of patients with rheumatic MS submitted to PTMV from January 1990 to December 2010. Follow-up was obtained by clinical records when available. Procedure was considered unsuccessful when post-procedure MVA area (MVA) was  $< 1.5 \text{ cm}^2$ .

#### Objectives:

The aim of this study was to determine the early and long term results of this procedure in patients with WS 8 or less and at the gray WS zone.

#### Results:

We analyzed data for 378 patients with a WS  $\leq 11$ , 80.5% were women. Mean age at the time of repair was 33 years [10 to 76 years] and the mean follow up time was 74 months. Before the procedure, 33.9% had a WS in the gray zone. They were older (36 years vs. 31 years,  $p < 0.001$ ) with a frequent history of mitral valvuloplasty (34.4% vs. 12%,  $p < 0.001$ ). Males presented more in the gray zone (25.8% vs 16.8%,  $p = 0.038$ ) while pregnant women had a WS  $\leq 8$  (20.4% vs. 11.7%,  $p = 0.035$ ). Patients in the gray zone presented more frequently with atrial fibrillation (39.1% vs. 21.2%,  $p < 0.001$ ). There was no differences regarding the functional status or the baseline echocardiographic MVA measurement by planimetry (1.07  $\text{cm}^2$  vs 1.05  $\text{cm}^2$ ,  $p = 0.26$ ). PTMV was safe in the two groups with same rates of success but a lower mitral surface gain in the gray zone group (0.88  $\text{cm}^2$  vs. 1.05  $\text{cm}^2$ ,  $p < 0.001$ ). During follow up, patients in the gray zone had significantly lower event free survival (freedom from death, systemic embolism and restenosis) (58.6% vs. 69.2%,  $p < 0.001$ ) and had a higher mortality (3.9% vs 0.8%, 0.023), higher rate of restenosis (33.6% vs. 17.8%,  $p < 0.001$ ) and required more frequently a mitral valve replacement (16.4% vs. 8.9%,  $p = 0.005$ ).

#### Conclusion:

PTMV was a safe procedure in both WS groups. Optimal results patients with a WS  $\leq 8$  zone. Patients with a WS 9-11 experienced worse outcomes during follow up.

Submission ID: 1008

### UNPREDICTABLE DECREASE IN ACUTE CORONARY SYNDROME PRESENTATIONS DURING THE COVID19 PANDEMIC: EXPERIENCE OF INTENSIVE CARE UNIT OF CARDIOLOGY

walid slimen

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#### Introduction:

The COVID 19 virus is a devastating pandemic that has impacted the worldwide healthcare system significantly. several studies reported a significant decrease in acute coronary syndrome admissions during that pandemic which is still due to unknown reasons.

#### Methods:

This is a prospective study of 179 patients (154 males and 25 females) with acute coronary syndrome (STEMI and NSTEMI) admitted to the Intensif Care Unit of cardiology A department in Fattouma Bourguiba University Hospital ,Monastir Tunisia . The data were collected for the period between January 1st and July 31 2020.

#### Results:

A total of 50 patients (78% males, 22 % females) presented the Before COVID-19 pandemic with ACS (STEMI + NSTEMI) while only 29 (96.6% males, 3.4% females ) presented during the COVID-19 periode .There was a drop of 42% ( $p < 0.05$ ) of ACS admissions during the COVID 19 pandemic, followed by à significant increase after COVID-19 period( 100 admissions).

In STEMI patients, only 7% presented before 3 hours of symptoms during the COVID 19 pandemic in comparison with the periode before the COVID-19 pandemic (21,2%) and after the periode afer the COVID-19 pandemic(38%)

In NSTEMI patients, only 2% presented before 3 hours of symptoms during the COVID 19 pandemic in comparison with the periode before the COVID-19 pandemic (10,7%) and the periode afer the COVID-19 pandemic(23%)

#### Conclusion:

The COVID 19 pandemic led to a drop of total ACS admissions in our department with a significant increase of the symptom-onset-to-first-medical contact time.

Acute coronary syndrome admissions during the COVID-19 pandemic. Early presentation ( $< 3$  hours ) of ACS admissions during the COVID-19 pandemic.

Submission ID: 1027

### VENTRICULAR SEPTAL DEFECT WITH UNCOMMON CORONARY ARTERY ABNORMALITIES

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#### Introduction:

Coronary artery implantation and pathway abnormalities are rare and mostly asymptomatic. Their detection is valuable because they can be the cause of iatrogenic trauma during cardiac surgery or, myocardial ischemia that can lead to sudden death. Among these anatomical variations, those with the highest risk of complication are those with an aberrant pathway between the trunk of the pulmonary artery and the aorta

#### Observation:

We report the case of an asymptomatic 9-year-old child followed at our department for muscular restrictive ventricular septal defect (VSD). The echocardiography shows the restrictive VSD with doubt on an abnormal origin of the right coronary artery (RCA).

The coronary CT scan confirmed the rising of the RCA from the left anterior sinus, thus describing an aberrant pathway between the pulmonary artery and the aorta. A rhythmic holter showed signs of ventricular hyper excitability with several monomorphic premature ventricular complexes. The patient was referred to the cardiovascular surgery department. He was operated on with uneventful course.

#### Conclusion:

Even though abnormalities of the coronary arteries in patients with VSD may be rare, screening for such condition is mandatory, since they can be responsible for sudden death in young patients.

Submission ID: 1032

### TRANSCATHETER AORTIC VALVE IMPLANTATION: IMPACT OF GENDER ON CLINICAL OUTCOMES

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#### BACKGROUND:

Transcatheter aortic valve implantation (TAVI) is considered as an alternative treatment for severe symptomatic aortic stenosis (AS) in patients with high surgery risk or not suitable for standard surgical therapy. Women have accounted around 50% of patients undergoing TAVI due to a higher inclusion rate of women in TAVI trials. However, there remain conflicting reports about impact of sex on outcomes.

#### METHODS:

This is a retrospective and descriptive study of patients undergoing TAVI who were hospitalized at the cardiology department between November 2018 and February 2020. This study sought to show the sex-specific prevalence and prognostic impact.

#### RESULTS:

In our study we included 50 patients of which 23 women (F) and 27 men (H) with 28 patients who presented a complication after TAVI. In terms of the surgical risk profile, there was no significant difference between the sexes when assessing the 2 scores: Euroscore>20% (7H/5F, p=0.73) and STSscore >10% (16H/12F, p=0.61).

We found that women in post valve implantation, were more exposed to stroke and tamponade with a p=0.05. On the other hand, no significant difference was found between the sexes for the other complications, namely atrial fibrillation (13F/15H, p=0.9), high-grade conductive disorders (2F/7H, p=0.1), the need for implantation of pacemaker (1F/5H, p=0.12), vascular complications (p=0.54), procedural death (1F/0H) p=0.59 and post-procedural death (7F/11H, p=0.44).

#### CONCLUSIONS:

Women undergoing TAVI had a different risk profile compared with male patients. These findings may be explained by fewer comorbidities in women.

Submission ID: 1033

### VENOUS GRAFT THROMBOSIS: IS THERE ANY ROOM FOR ROUTINE THROMBOASPIRATION?

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#### Introduction:

Venous bridge angioplasty is difficult and infrequent. It is characterized by an increased risk of embolization of the coronary microcirculation and a higher rate of thrombosis.

The use of thromboaspiration in the setting of a NSTEMI with a high thrombotic burden is of interest in order to reduce the risk of distal embolization and no-reflow.

#### Case presentation:

We report the case of a 74-year-old man diabetic, hypertensive, dyslipidemic with a past medical history of coronary artery disease;

\*In 1997, inferior MI with a triple vessel disease on coronary angiography.

He underwent triple coronary artery bypass grafts: Left anterior descending artery (LAD) by left internal mammary artery (LIMA),

the obtuse marginal artery by saphenous vein (SV) and distal right coronary artery (RCA) by SV.

\* In 2013 Unstable angina due to a subocclusive stenosis in distal RCA venous bridge requiring an angioplasty by a drug eluting stent (DES).

He was admitted for NSTEMI. The EKG showed regular sinus rhythm with inferior necrosis sequel, subepicardial ischemia in the inferolateral leads.

Coronary angiography showed a very late stent thrombosis on graft stent.

-He underwent primary percutaneous coronary intervention:

- Selective catheterization of the LSV/ RCA graft by an AL 2,

- insertion of a 0.014 guidewire.

- 2 runs of thromboaspiration retrieving microthrombi

- predilation by an Empira 2\*15mm balloon

- stenting by a DES 3\*32 mm,

- postdilatation by an NC 3.5\*13 balloon inflated to 16 ATM

The final result was acceptable with a good clinical course. The patient was discharged after 24 hours.

#### Conclusion:

Although the controversies on its routine use during primary percutaneous coronary intervention on the native artery, thromboaspiration is mandatory during venous graft thrombosis.

Submission ID: 1043

### UNEXPECTED DEATH ASSOCIATED TO MYOCARDIAL BRIDGING POSTMORTEM DISCOVERY- ABOUT AN AUTOPSY CASE SERIES

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#### Background:

Myocardial bridging is a situation where the coronary artery has an intramural course through the myocardium causing the artery to narrow during systole. Although known as benign, this congenital anomaly may lead in some cases to sudden death.

The objectives of this study are to describe autopsy cases where a MB was discovered and discuss its correlation to sudden death.

#### Materials and methods:

It is a retrospective descriptive study performed in the Department of Forensic Medicine of the University Hospital Fattouma Bourguiba of Monastir over a period of 28 years.

#### Results:

We collected 25 cases of sudden cardiac death due to myocardial bridging. The mean age was 45 years. Most of our cases were male. No medical history of MB was retrieved from clinical data in all cases, and there were no atherosclerosis risk factors in 75% of cases. As about the MB characteristics, median length was 24 mm, and thickness ranged from 2,7 to 7 mm. we processed as well to a histological examination of the myocardium that showed a normal one in 80% of cases. However, it showed a myocardial infraction in 15% of cases and an arrhythmogenic right ventricular dysplasia in 5% of cases. There were atherosclerosis lesions of the coronary arteries in 75% of cases.

#### Conclusion:

Our study showed that MB was frequently associated with atherosclerosis making the risk of sudden cardiac death higher. Preventive measures as well as early diagnosis methods should be taken in order to diminish sudden cardiac death.

Submission ID: 1044

### ROLE OF POST-MORTEM TROPONIN I TESTING IN THE DIAGNOSIS OF SUDDEN CARDIAC DEATH: A PROSPECTIVE STUDY

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#### Background:

Sudden death is a frequent situation in forensic pathology where an autopsy is required to find the cause of death. However, autopsy has its own limits, and diagnosing the cause of death is not always as easy as expected especially when no macroscopic lesions are found. Additional complementary techniques are therefore performed, such as histological examination. Nevertheless, when death happens fast, cardiac lesions remain hard to spot whether macroscopically or histologically. From this point, arises the need of a biochemical marker to ease the diagnose of the sudden cardiac death.

#### Objectives:

Find the correlation between troponin Ic rates in pericardial fluid, peripheral blood, and cardiac flood as well as cardiac origin of death.

#### Material and methods:

It is a prospective study, performed in the Forensic Medicine Department in Fattouma Bourguiba Teaching Hospital of Monastir during 3 years. Our study group was a 72-cases-group of sudden death. An autopsy was performed on each of the cases, as well as a histological examination of heart tissue. During the autopsy, we took cardiac and peripheral blood samples and a pericardial fluid samples, for troponin dosage. After autopsy and histological examination, the study group was divided into two groups: 32 cases of confirmed cardiac death, 40 cases of non-cardiac death. On another time of the study, we divided the group into another two groups according to the presence of histological myocardial lesions. Correlations between TnIc level and the cause of death were analysed with Receiver-operator characteristic (ROC) curves and a statistical study was performed using SPSS (20,0 version).

#### Results:

We have found a significant correlation between Cardiac troponin I levels in pericardial fluid, cardiac and peripheral blood and subjects with observable signs of myocardial damage and those without (P value respectively at 0.0007, 0.0009 and 0.004). ROC curves analysis indicates that the pericardial fluid has the best sensibility and specificity with a cut-off level at 108ng/ml and an area under the curve at 0.925.

#### Conclusion:

The dosage of TnIc in post-mortem, mainly in pericardial liquid is a great support of the diagnosis of a myocardial injury causing the death specially in cases where the post-mortem morphological findings are inconclusive.

Submission ID: 1047

### STENT VISUALIZATION ENHANCEMENT : PREDICTORS OF GOOD IMAGE QUALITY

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#### Background:

Stent underexpansion is associated with unfavorable outcomes following Percutaneous Coronary Intervention (PCI). Intracoronary imaging techniques such as intravascular ultrasonography (IVUS) and optical coherence tomography (OCT) remain the gold standard

to assess stent deployment but they are rarely available in developing countries. Although often underused, Stent Enhancement is a simple and quick tool that significantly improves the visualization of deployed stents without a significant increase in radiation dose.

#### Objectives:

We aimed to determine the predictors of failure to obtain good image quality with stent enhancement after PCI.

#### Methods:

We conducted a prospective study from a series of 90 stented lesions in 53 patients revascularized on the native vessels in the cardiology department of Charles Nicolle Hospital-Tunis. After each procedure, a StentViz (GE Healthcare on Innova 2100) was performed to make a decision of the need for post-expansion. Stent visibility was assessed using a quality score graded from 1 to 3 (1: poor visualization Stent invisible; 2: suboptimal visualization Edge Stent visible; 3: optimal visualization, Edge Stent and stitches visible).

#### Results:

The study population included 36 men and 17 women with a mean age of 62.3 years  $\pm$  8.2 years. Smoking and hypertension were the most common risk factors, they accounted for 60.4% and 39.6% respectively.

PCI was performed for myocardial infarction in 73.6 % of cases and stent implantation was performed for 90 lesions. The StentViz quality score was 25.6% of cases equal to 1; 41.1% equal to 2 and 33.3% equal to 3. The failure of StentViz, defined as a non-visible stent was observed in 23 of PCI.

The predictors of failure StentViz were: dyslipidemia ( $p = 0.039$ ), lesions in the RCA ( $p = 0.046$ ), calcified lesions ( $p = 0.017$ ), the complex lesions ( $p = 0.033$ ) and the diameter of the stent ( $p = 0.031$ )

#### Conclusion:

Post angioplasty assessment of adequate stent expansion with StentViz system is easy-to-use, and time and cost-saving. In this study, Complex lesion, calcified lesion, small stent and RCA lesions were predictors of Stent enhancement visualization failure with StentViz.

Submission ID: 1083

### SILENT MYOCARDIAL ISCHEMIA: CLINICAL PROFILE AND PROGNOSTIC

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#### Introduction:

Silent myocardial ischemia (SMI) is defined by the presence of objective evidence of myocardial ischemia in the absence of angina pectoris or other anginal equivalents. It is characterized by the multitude of clinical presentations it can put on. Its management has not been consensually established due to the divergent results of the studies conducted regarding its treatment and the outcomes that follow. The aim of our study was to establish the clinical profile and the prognosis of patients with SMI.

#### Methods:

A single-center longitudinal descriptive retrospective study conducted at the cardiology department of Mongi Slim la Marsa Hospital from January 2015 to May 2020, including 94 cases of SMI confirmed by coronarography.

#### Results:

We included 94 patients in our study. The average age was 64  $\pm$  9 years. We noted a clear male predominance with a sex ratio equal to 3. The most common cardiovascular risk factor was arterial hypertension (65%) then smoking (61,7%), diabetes (60%) and finally dyslipidemia (32%). The most common chief complaint was dyspnea (63%), followed by palpitations (18%) then faintness



(14%). It should be noted that 11% were explored as part of a general pre-anesthesia assessment. Resting electrocardiogram at admission was pathological in 84% of the cases. Echocardiography at admission revealed segmental kinetic disorders in 87% of cases, indicating the presence of ischemic cardiomyopathy. The average of the ejection fraction of the left ventricle was  $44 \pm 17\%$ . Coronarography showed significant stenosis in 79% of cases, and for the rest, the coronary network was infiltrated as a whole. The most common pathological aspect was mono-truncular stenosis of the anterior interventricular artery (62%), left main coronary artery was affected in 8% of cases. Sixty-two percent of patients had coronary revascularization (angioplasty or aorto-coronary bypass surgery). Revascularization was correlated with better short- and long-term outcomes.

#### Conclusion:

Because of its diagnostic difficulty and lack of consensus on its treatment, SMI remains an important cause of cardiovascular morbi-mortality. It is good practice to consider the profile of at-risk patients and use screening in order to establish an early diagnosis and adopt appropriate therapeutic management: revascularization.

Submission ID: 1084

#### TWO AND THREE-DIMENSIONAL ECHOTOMOGRAPHY OF THE LEFT ATRIAL

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#### Background:

The left atrial is the elective site of formation of 90% of thrombi in non valvular atrial fibrillation. Its study by two-dimensional transesophageal echocardiography, the gold standard imaging method, faces several types of difficulties. The relatively recent advent of three-dimensional real-time mode has broadened the technical arsenal.

#### Objectives of the work:

To carry out a morphological and functional transesophageal echocardiographic study of the left atrium and its anatomical variants, and to clarify the contribution of the three-dimensional mode in real time in this study.

#### Methods:

We carried out a retrospective descriptive study on a population of 70 patients from the cardiology department of Mongi Slim hospital, who underwent transesophageal echocardiography in both two-dimensional and three-dimensional modes in real time, regardless of the indication. We have identified the clinical and ultrasound characteristics relating to the morphology and activity of the left atrial as well as their implications in intraauricular thrombogenesis.

#### Results:

The mean volume of the left auricles analyzed was  $3.83 \pm 3.79$  ml and the mean ejection fraction was 53%. Most of the left auricles had ellipsoid rather than circular ostia (mean eccentricity index: 1.26). Patients, who were in atrial fibrillation at the time of the ultrasound examination, had more dilated left atrias characterized by a lower ejection fraction and sawtooth pulsed Doppler flow with average filling and emptying velocities very low (36 cm/s and 35 cm/s respectively). In two-dimensional transesophageal echocardiography, we have shown that the dimensions of the left atrial can be deduced particularly from two views: 45° and 135°. In addition, the three-dimensional mode allowed us to study the auricle with more precision, to identify its different anatomical variants, to differentiate more easily the trabeculae from the thrombi and to calculate the ejection fraction by volume.

#### Conclusion:

Transesophageal echocardiography, through its two-dimensional

and three-dimensional modes, allows a precise and reliable morpho-anatomical and functional study of the left atrium and thus provides valuable information for the understanding and prevention of thromboembolic events of cardiac origin. The recently introduced three-dimensional mode improves the diagnostic and therapeutic technical capabilities of echocardiography.

Submission ID: 1085

#### THE TIME OF CONSULTATION COMPARED TO THE ONSET OF CHEST PAIN IN CASE OF STEMI IN WOMEN IN TUNISIA

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#### Background:

Coronary artery disease remains the leading cause of death in women around the world. Current recommendations for ST Elevation Myocardial Infarction (STEMI) apply to both sexes, although women have been underrepresented in randomized clinical trials of primary angioplasty, with noted differences between the sexes in presentation, physiopathology and treatment of STEMI. The aim of this study is to investigate the consultation time of women in case of STEMI.

#### Methods:

This was a retrospective study of 111 patients collected within the cardiology department at the "Mongi Slim" university hospital in Tunisia, for a period of 3 years, between January 1, 2016 and January 31, 2019, hospitalized in the acute phase (within the first 24 hours) of an acute coronary syndrome with ST segment elevation and all treated with urgent primary angioplasty.

#### Results:

In our study, the mean time to consult compared to the onset of chest pain was 8 hours and 38 minutes with extremes ranging from 0 to 24 hours. According to this criterion, our population was divided into 4 groups (Figure 1): group 1: Primary angioplasty in the first 3 hours: 23 patients (20.9%), group 2: primary angioplasty between 3 and 6 hours: 42 patients (38.2%), group 3: primary angioplasty between 6 and 12 hours: 31 patients (28.2%) and group 4: primary angioplasty between 12 and 24 hours: 14 patients (12.7%). In our study we noticed also that patients over 50 years consult earlier compared to those under 50 years old, 8.7% of patients under 50 years old consult before the third hour against 91.3% at the third hour in those over 50 years old.

#### Conclusion:

Myocardial infarction in women has a particular epidemiological profile and a reserved prognosis. As our study has shown, delay in consultation and age are two determining factors in the prognosis of female patients in case of STEMI. This may be because women underestimate their cardiovascular risk or misinterpret symptoms, which are considered atypical.

Submission ID: 1086

#### THE CLINICAL PROFILE OF TUNISIAN FEMALE PATIENTS PRESENTING FOR ST ELEVATION MYOCARDIAL INFARCTION AND TREATED BY URGENT TRANSCUTANEOUS CORONARY ANGIOPLASTY

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#### Background:

ST elevation myocardial infarction (STEMI) constitute a major public health problem, its incidence is increasing significantly, especially

among women. Many studies have reported worse results in women after STEMI. Many factors, including age and co-morbidities, particularly diabetes mellitus, and renal failure, may contribute to excess mortality women after STEMI. In this study we aimed to analyze the clinical profile of Tunisian female patients presenting for STEMI.

#### Methods:

In our study, we investigated retrospectively a total of 111 female patients collected within the cardiology department at the "Mongi Slim" university hospital in Tunisia, for a period of 3 years, between January 1, 2016 and January 31, 2019, hospitalized in the acute phase (within the first 24 hours) of an acute coronary syndrome with ST segment elevation and all treated with urgent primary angioplasty.

#### Results:

Our analysis showed that among of these 111 female Tunisian patients, 69 patients (62,16%) were known as having diabetes mellitus. It was non-insulin-dependent (type II) diabetes mellitus in 60,3% of cases and 52,2% were not insulin requiring. Hypertension was noted in 60 patients (54,05%) and it was more frequent in elderly patients (75% in those over 75 years old versus 59,1% in those under 75 years old). Dyslipidemia was found in 44 patients (39,6%), it was hypercholesterolemia in 23,4% of cases, a mixed dyslipidemia in 11,7% of cases and isolated hypertriglyceridemia in 4,5% of cases. Renal failure was found in 21 patients (18,91%). The notion of early familial coronary artery disease was noted in 8 patients only (7,2%). Smoking was found in 21,6% of patients. Its incidence was more significant in patients less than 50 years old, 92,6% versus 65,5% in those over 50 ( $p < 0.0001$ ).

#### Conclusion:

As shown in our study, diabetes mellitus, hypertension, dyslipidemia, smoking cigarettes and renal failure are the major cardiovascular risk factors on which we must act early in order to prevent the occurrence of major cardiovascular events.

Submission ID: 1090

#### SURVIVING COMPLICATED STEMI: A 41-DAY JOURNEY

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#### Introduction:

Myocardial infarction related mechanical complication is a rare event nowadays thanks to early revascularisation. We describe a series of complications that happened in the same patient.

#### Case summary:

Sixty-five-year-old male with multiple cardiovascular risk factors: age, sex, and smoking. He had a delayed presentation of ST-segment elevation myocardial infarction: arrived 12 hours after pain onset to the emergency department rapidly complicated by a cardiac arrest. His electrocardiogram was in normal sinus rhythm, with the presence of Q wave and persistent ST segment elevation in the anterior leads.

Urgent Coronary angiogram showed proximal left anterior descending artery occlusion treated with direct stenting. A TIMI 3 flow was restored.

A transthoracic echocardiogram showed a severely depressed left ventricular ejection fraction, and it was estimated at 20%, spontaneous contrast was present accompanying an apical thrombus. At the time, a mild pericardial effusion was present.

Two days later, the patient developed hemodynamic instability, a transthoracic echocardiogram showed a significant cardiac effusion with heart collapse indicating urgent pericardiocentesis. It was a bloody pericardial effusion.

Cardiac MRI showed a small free wall rupture adjacent to the apical thrombus. The thrombus was occluding the rupture stopping intrapericardial bleeding. Anticoagulation was stopped for four days and reintroduced after an important increase in the thrombus size with strict surveillance after discussing it with the heart team. The treatment was well tolerated, and the patient was discharged after 41 days. He received triple antithrombotic therapy for a month: vitamin K antagonist, aspirin and clopidogrel. He also received ACE inhibitors, betablockers, aldosterone inhibitor and furosemide.

Transthoracic echocardiogram before discharge, showed a regression of apical thrombus. No pericardial effusion was effusion.

#### Conclusion:

Managing mechanical complication of myocardial infarction can be very challenging and needs a good clinical judgement since there is not a codified management strategy specially in associated forms.

Submission ID: 1107

#### SUDDEN CARDIAC DEATH DUE TO TAKOTSUBO SYNDROM AFTER POLICE POURSUIT A FORENSIC CASE REPORT

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#### Introduction:

Tako-Tsubo stress cardiomyopathy (TS) mimics coronary syndrome acute and is defined by a reversible astonishment of the myocardium, occurring on more often after stress. It could be responsible for sudden cardiac death. In this work, we report a case of sudden death in an adult female of cardiac origin related to tako-tsubo syndrome and medico-legal implications.

#### Observation:

A 32-year-old woman suddenly lost consciousness then suffered a cardiovascular arrest during a police chase. She is previously known to be healthy. The cardiovascular risk factors that this patient had are alcoholism, and active smoking. A forensic autopsy was performed. It did not show any traumatic injuries explaining death.

During autopsy, the heart, weighing 237g, had a globular tip,. The examination of the valves and coronary arteries was without abnormalities. Lungs, weighted 430g each, were congestive.

The myocardium was homogeneous with a slight asymmetry at the level of the postero-septal wall of the left ventricle.

A troponin I test was performed on peripheral blood and pericardial fluid. Troponin I was high in both peripheral blood and pericardial fluid at 6675 ug/l and 11255 ug/ respectively.

Fragments of organs, eventually the myocardium were sent for pathological examination. It had only shown vascular congestion associated in places with alveolar edema in the lungs.

#### Conclusion:

TS is triggered by emotional or physical stress, but it is relatively unknown in the forensic literature. The occurrence of TS has often been described after physical or emotional stress. Finally, although TS represents a usually reversible heart failure syndrom the major cardiac adverse events is sudden death.

The discussion of the accountability of the stressful event is necessary in this case; engaging the responsibility of the authority in the occurrence of this sudden cardiac death.

Submission ID: 1136

### TEMPORAL TRENDS OF ALTERNATIVE ACCESS ROUTE AFTER TRANSRADIAL ACCESS FAILURE

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#### Introduction

Trans radial approach (TRA) for coronary catheterization is a world-wide fast growing technique. It has become the standard approach. However, one of its disadvantages is the high conversion rate to another approach. The aim of this study is to investigate alternative access site choice after TRA failure in our centre.

#### Methods

It was a retrospective study conducted in the cardiology department of Farhat Hached university hospital center. From February 2014 to May 2021, patients who underwent a catheterization procedure through a transradial approach were enrolled. The population was divided in two groups according to the admission period: first group from February 2014 to February 2015 and second group: from January 2020 to May 2021. In each group, the alternative coronary access route, after transradial access failure, was evaluated.

#### Results

A total of 895 patients underwent a coronary catheterization procedure through a transradial approach. The first group consisted of 336 patients and the second group consisted of 559 patients. Baseline characteristics were similar in both groups. Transradial access failure was reported in 10.2 % of the cases in the first group and in 11.2 % of the cases in the second group (p was not significant).

After TRA access failure, TFA access was used in 66% in the first group against 26% in the second group (p<0.001). Contralateral or distal TRA was used in 32.1% in the first group against 54.6% in the second group (p<0.001). Transcubital access route was used only in the second group (18,2% vs 0%, p<0.001).

#### Conclusion

our work has shown that there is a regression in the use of the trans femoral approach as an alternative approach in the event of failure of the radial approach to the detriment of the contralateral radial approach and the cubital approach.

Submission ID: 1142

### THE "SMOKERS' PARADOX": DOES IT EXIST IN WOMEN?

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#### Introduction

The "smokers' paradox" is a controversial phenomenon of an unexpectedly favorable outcome of smokers post-acute myocardial infarction (AMI). It has been well known and discussed in the male population, despite conflicting pieces of evidence from the literature so far.

#### Aim

The aim of this study is to investigate the existence of this phenomenon in the female population, particularly with the increase in the prevalence of smoking in this population.

#### Patients and Method

We have retrospectively included from the MIRAMI (Monastir Acute Myocardial Infarction) register 324 women admitted for AMI in the Cardiology A department from January 1995 to December 2015. The population was divided into 2 groups: smokers and non-smokers.

#### Results

Smoking was present in 13.3% (n = 43) with an average of  $45.2 \pm 27.8$  pack-years. Female smokers were significantly younger ( $59.88 \pm 12.65$  years vs  $66.89 \pm 10.81$  years, p <0.001), with less diabetes (25.6% vs 57.7%, p <0.001), less hypertension (27.9% vs 59.1, p <0.001), and less dyslipidemia (2.3% vs 14.2, p = 0.029). The anterior and inferior territories were predominant in both groups (p = 0.717). The rate of heart failure on admission was similar: 20.9% for the smokers and 25.6% for the non-smokers (p = 0.508). The use of myocardial reperfusion was greater in smokers (65.1% vs 49.8%, p=0.080), with an equal proportion of primary angioplasty and thrombolysis (27.9%). Rescue angioplasty was performed in 4 cases.

In-hospital mortality was higher in non-smokers women, but this was not statistically significant (17.1% vs. 11.6%, p = 0.368).

#### Conclusion

According to our results, despite the absence of statistically significant difference, female smokers had a lower in-hospital mortality rate. Thus, the "smokers' paradox" also seems to exist in our female population. Other larger studies need to be conducted to confirm this result.

Submission ID: 1143

### TO BE AN ANGLER THE FISH ROD DOESN'T MATTER

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#### Introduction:

Coronary stent loss can be a very stressful experience for the operator. Fortunately, it is not a common complication in PCI, especially with the ever-improving equipment designs and the use of pre-mounted stents. Herein we present the case of coronary stent loss, and its retrieval using a homemade snare.

#### Case Presentation:

We report the case of a 74-year-old female, with a long-standing history of hypertension and dyslipidemia, who presented with a NSTEMI in July of 2021. The angiography showed a severe stenosis of the distal left main coronary artery and a severe stenosis of the obtuse marginal artery for which she underwent a provisional T stenting of the left main and several attempt to cross the obtuse marginal lesion After two months, she remained symptomatic with severe exertional angina refractory to optimal medical treatment. She was referred to our department. Her angiography showed a permeable left main stent, and a subocclusion of the obtuse marginal artery, for which she underwent percutaneous coronary intervention. We opt to this approach.

- 6F right radial

-initial POT

-opening of the struts in front of the side branch by a 2x10mm semi compliant balloon

-kissing balloon

-stenting of the obtuse marginal after predilatation.

Upon completing the kissing balloon technique, we noticed a hazing in the ostium of the circumflex coronary artery (Cx).

So, we decided to complete the TAP technique with kissing and final POT.

However, we failed to deliver a 2.5x30mm stent Cx due to the despite balloon anchoring at the proximal left anterior descending artery. When trying to remove it, the stent was lost. Since there was no snare available in the cath lab, a homemade snare was used to successfully retrieve the stent.

#### Conclusion:

Since coronary stent loss may lead to serious outcomes that could even be fatal, operators should be familiar with stent retrieving techniques. It is always best to have the necessary toolbox to manage such a situation, but mastering a few craft techniques may sometimes prove very useful.

Submission ID: 1147

### STENT THROMBOSIS AND TYPES OF CORONARY STENTS

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#### 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. The objective of our study is to analyze stent thrombosis and to identify the types of coronary stents favoring its occurrence 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 recruited 50 patients who were victims of stent thrombosis 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 an endocoronary prosthesis. Our work includes a comparative section of case-control.

#### Results:

Regarding the type of stents used in case group, 35 bare metal stents (57,4%) were implanted, whereas 19 second-generation drug eluting stents (31,2%), 5 biodegradable-polymer drug eluting stents (8,3%), only one first-generation active drug eluting stent (1,6%) and just one polymer-free drug eluting stent were implanted.

Furthermore, 27 bare metal stents (38,2%) were implanted in the control group, 19 second-generation drug eluting stents (49,1%), 7 biodegradable-polymer drug eluting stents (12,7%), and no first-generation active drug eluting stent or polymer-free drug eluting stent were implanted.

We observed a predominant use of the polymer "Everolimus" in both groups, with an incidence of 65% in the case group and 69% in the control group.

Bare metal stents were clearly predominant in cases group that reached a statistically significant threshold with univariate analysis ( $p=0.04$ ) and thus correlated with the occurrence of stent thrombosis.

There was also a preponderance of second-generation drug eluting stents in control groups. Although close ( $P=0.08$ ), the threshold of significance is not reached with the univariate study.

#### Conclusion:

We insist on the need to generalize the use of drug-eluting-stents in the treatment of coronary diseases in order to remedy this deadly pathology.

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### THE RISE OF TRANSRADIAL ARTERY ACCESS FOR PERCUTANEOUS CORONARY INTERVENTION

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#### Introduction

Percutaneous coronary intervention (PCI) is associated with both ischaemic and bleeding complications. Transradial access (TRA) route has been proven to reduce bleeding risk. It has become recently the standard approach. Our aim was to investigate the trend in adoption of transradial access at our institution.

#### Materials and Methods

It was a retrospective study conducted in the cardiology department of Farhat Hached university hospital centre. From February 2014 to May 2021, patients who underwent a catheterization procedure were enrolled. The population was divided in two groups according

to the admission period: first group from February 2014 to February 2015 and second group: from January 2020 to May 2021. In each group, initial coronary access route was evaluated.

#### Results

A total of 1440 patients underwent a coronary catheterization procedure. The first group consisted of 848 patients and the second group consisted of 592 patients. Baseline characteristics were similar in both groups. Transfemoral coronary access (TFA) was used in 52.9% in the first group against 1.7% in the second group ( $p<0.001$ ). TRA was used in 46.8% in the first group against 98.3% in the second group ( $p<0.001$ ). The percentage of success of the initial access route in 2014-2015 was 90% vs 93.8% in 2020-2021 ( $p$  value not significant).

#### Conclusion

Trans radial artery access for coronary catheterization at our institution steadily increased to over 98% of cases in a period of six years, representing the evolution of a major trend in interventional cardiology.

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### TRANSCATHETER AORTIC VALVE REPLACEMENT FOR DEGENERATIVE BIOPROSTHETIC SURGICAL VALVES INTERVENTION

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#### Background:

Transcatheter aortic valve-in-valve implantation is an emerging therapeutic alternative for patients with a failed surgical bioprosthesis and may obviate the need for reoperation especially in this type of population with high operative risk. We evaluated the clinical results of this technique on a patient case with degenerative bioprosthetic stenosis treated with transcatheter valve-in-valve (ViV) implantation.

#### Case report:

A 70-year-old woman underwent isolated aortic valve replacement (AVR) in 1995 for nonrheumatic aortic stenosis with a bioprosthesis. During 2013 she became increasingly dyspneic and was found to have severe aortic stenosis (AS) with moderate aortic regurgitation (AR). Her biologist test showed severe thrombocytopenia, and given her resultant high operative risk score (logistic EuroSCORE 19%), she was referred for TAVI. A post-procedure echocardiogram the next day showed normal functioning of the valve, with a peak flow velocity of 2.7 m/s across it, a residual mean gradient of 19.5 mmHg and trivial aortic regurgitation. At one year of follow up, the patient was asymptomatic (stage I of the NYHA) with a maintained haemodynamic profile of the valve.

#### Conclusion:

We have confirmed the feasibility of TAVI in degenerative bioprostheses which gives results similar to TAVI on native valve. Long-term follow up of these patients is required to demonstrate ongoing benefits and limitations of this technique.

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### THE PHARMACOLOGIC MANAGEMENT OF HEART FAILURE WITH REDUCED EJECTION FRACTION IN A TUNISIAN DEPARTMENT

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#### Background:

Chronic congestive heart failure is a common condition that, if untreated, markedly impairs the quality of life and is associated with

a high risk of recurrent hospitalization and death. The introduction of new drugs and the rigorous implementation of evidence-based recommendations in the guidelines on heart failure has led to a reduction in recent years in mortality and frequency of hospitalizations in patients with heart failure and reduced ejection fraction (HFrEF).

#### Purpose:

Our aim was to study the pharmacological management of patient with chronic heart failure in a Tunisian department according to that recommended

#### Methods:

A retrospective, descriptive study, carried out at the department of cardiology La Rabta Hospital during the period between 2013 and 2018. We analyzed a record of 250 patients followed for heart failure with ejection fraction < 40%, we were interested on the treatment profile (class of treatment, the name of molecule, doses, tolerance and side effects)

#### Results:

A total of 250 patients' files were analyzed. The most often prescribed medications were intravenous diuretics in 90% then oral presentation. Angiotensin-converting enzyme or angiotensin receptor blocker (ARBs) were prescribed in 88 %, for ramipril the initial dose was 2.5 mg and the maximum tolerated dose was 5 mg. The maximum recommended dose was reached in 10%; 91% of patient were receiving beta blockers (BB); the most used beta blocker was Bisoprolol in all patients. The initial dose was on average  $1.87 \pm 0.6$  mg [1.25; 2.5] and the maximum tolerated dose was  $3.68 \pm 1.9$  mg [1.25; 10]. The Tolerance to this class of treatment was good only in 65% of patients. The main side effects limiting dose optimization were bradycardia in 15%, arterial hypotension in 77% and a transient worsening of dyspnea was noted in 8 % patients. Mineralocorticoid's receptors antagonists (MRAs) were prescribed in 56%. Triple association of (ARBs+ beta-blocker +MRAs) was present in 48 % of cases. Recently six patients were put on ivabradine (because of fast heart late despite optimal dose of beta blockers. Nephylisin and SGLT2 inhibitors were not prescribed because of their non disponibility.

#### Conclusion:

In our study, optimal therapy of heart failure was rarely reached due to several factors specially related to patients.

Submission ID: 1232

#### STENOSIS OF BOTH PULMONARY ARTERIES 3 YEARS AFTER SURGERY ON A TYPE 1 TRUNCUS ARTERIOSUS: DOES PULMONARY ARTERIES STENTING WORKS?

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#### Background:

Truncus arteriosus (TA) is a rare, complex congenital heart disease characterized by a single great artery supplying both systemic and pulmonary circulations, as the so called common arterial trunk

#### Aim:

Describe a complication during the follow-up of an type 1 truncus arteriosus and the therapeutic ways.

#### Case report:

We report the case of a male child, aged 3 years old, operated at the age of 15 days of life on a common arterial trunk diagnosed in front of a table of heart failure. he underwent VSD closure with aortic reconstruction and a Right Ventricular- Pulmonary Artery

prothetic tube. During follow-up there was a tight bilateral stenosis on echocardiography at the origin of the two pulmonary arteries, confirmed by thoracic CT angiography. The child underwent stenting of the right PA with a 5\* 20mm stent and the left PA with an 8\* 20mm stent.

1 year later, the child underwent dilation of both stent by two ballons with good results.

#### Conclusion:

Detect this lesion as early as possible for the optimal repair and management.

Submission ID: 1252

#### SEVERE CORONARY ARTERY DISEASE IN A 12-YEAR-OLD WITH FAMILIAL HYPERCHOLESTEROLEMIA

ben ouanes sami, kacem marwen, dardouri safa, dhieb leila, gribaa rym, mehdi slim, mgarrech imen, kortas chokri, ben farhat sameh, aymen el hraiech, elies naffeti

Tunisia

FH familial hypercholesterolemia; RCA right coronary artery; LMA left main artery

#### Background

Coronary artery disease and acute coronary syndromes are very rare in children and adolescents. Still, we may see several acute coronary syndromes generally secondary to vasculitis of the aorta and medium vessels, anomalous coronary artery trajectory, or an array of metabolic diseases such as FH. Type IIa FH is a rare genetic disorder that causes severe elevations in total cholesterol and low-density lipoprotein cholesterol (LDLc). these anomalies cause target organ damage especially cardiovascular disease which can have dramatic consequences at an early age.

#### Case presentation

A 12-year-old male adolescent with a history of FH (3 first-degree relatives) and sudden cardiac death. He was diagnosed at the age of 4 with FH and was given atorvastatin and aspirin. During initial follow up he remained asymptomatic until 2018 when he presented to the emergency department with typical exertional angina. EKG showed diffuse ST-segment depression and ST-segment elevation in AVR. Lab tests showed elevated troponin levels at 580ng/l. transthoracic echocardiography showed no pathological findings.

The diagnosis of NSTEMI-ACS was confirmed, and the patient underwent early coronary angiography via femoral access which showed significant stenosis of the Ostia of the LMA and the RCA.

The decision of the heart team was Stenting of the LMA and a differed angioplasty of RCA. The procedure was successfully carried out and he had LMA stenting with a DES. The RCA stenting didn't take place; the patient remained asymptomatic, and functional stress testing showed no signs of ischemia. One year later the patient presented with recurrent angina, so he was admitted and had coronary angiography showing significant stenosis in the Ostia of the circumflex and RCA and an intra stent restenosis in the LMA. The heart team decision was a coronary artery bypass graft surgery with the saphenous vein graft to RCA, the left internal mammary artery to the left anterior descending artery, and the right internal mammary artery to the circumflex artery. The procedure took place after one month with good results and the patient was discharged after 2 weeks.

#### Conclusion

Coronary artery disease in patients with FH is challenging especially in the pediatric population. Such a condition requires optimal medical treatment, even plasmapheresis in addition to percutaneous coronary stenting or surgical treatment.

Submission ID: 1254

### RESULTS OF TRANSCATHETER CLOSURE OF ATRIAL SEPTAL DEFECT IN PATIENTS OLDER THAN 40 YEARS

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#### Background:

Transcatheter closure of atrial septal defects (ASD) is well known and demonstrated its safety and efficacy in children while it's still controversial in adults older than 40 years. The closure of atrial septal defect prevents the development of pulmonary hypertension, cardiac arrhythmia and heart failure however the indications for atrial septal defect closure in adults are ambiguous.

#### Aim:

Evaluate the outcomes of transcatheter closure of secundum ASD in patients older than 40 years

#### Material and method:

We reviewed the results of 27 patients older than 40 years who underwent percutaneous closure of atrial septal defect at Cardiology department of Sahloul Hospital between 2000 and 2020 .

#### Results:

In this group, females represent 88,9%. The mean age was 51 years old with a minimum being 40 and a maximum being 69 years old. 66,6% had exertional dyspnea at the presentation more than stage II NYHA classification. The ECG showed the presence of atrial fibrillation in 18,5%. About 29,6% had pulmonary hypertension before closure and the average of peak systolic pulmonary artery pressure was 43,6 mmHg. The echocardiographic assessment revealed a very enlarged right ventricle in 37%. The most used device was Amplatzer septal occluder in 88,6 % of all patients in this group. After ASD closure, 82,6 had no symptoms with a significant regression of mean peak systolic pulmonary pressure passing to 35,3 mm Hg ( $P<0.001$ ) and a net regression of the right ventricle size which was normal in 75% ( $P=0.04$ ) in the follow up. We report the case of one patient who had developed an acute dyspnea the next day of the closure secondary to diastolic dysfunction with a good evolution.

#### Conclusion:

Transcatheter ASD closure in patients older than 40 years lead to a significant improvement of symptoms , a regression of the right ventricle size and pulmonary artery pressure. On this basis the Transcatheter ASD closure should be considered in adults at any age if it is technically feasible.

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