In the Name of GOD
the Compassionate, the Merciful

13th Middle East Cardiovascular Congress
6th Congress of Clinical Cases in Complex Cardiovascular Therapeutics

21 - 24 October 2021 (29 Mehr – 2 Aban 1400)

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13th Middle East Cardiovascular Congress
6th Congress of Clinical Cases in Complex Cardiovascular Therapeutics

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پیام رئیس مرکز تحقیقات قلب و عروق دانشگاه علوم پزشکی شیراز

دکتر محمد جواد زیبایی نژاد

بسمه تعالی

از تاریخ پنجشنبه ۲۹ مهرماه سیزدهمین کنگره بین‌المللی قلب و عروق خاورمیانه و ششمین همایش مداخلات پیچیده قلبی برگزار می‌گردد.

کنگره امسال نیز بخاطر شرایط کرونایی به شکل وبینار برگزار می‌گردد. در کنگره امسال ۹۰ نفر از اساتید دانشگاه و مراکز مختلف تحقیقاتی و درمانی سراسر کشور با موضوع From Prevention to intervention سخنرانی خواهد کرد و بیش از ۵۰ خلاصه مقاله در بخش پوستر جهت دریافت جوایز نقدی کنگره به رقابت علمی خواهند پرداخت، در حالی که جوایز بیشتر متوجه تحقیقات در زمینه پیشگیری خواهد بود.

با توجه به عناوین سخنرانی‌ها و نحوه ارائه که عمدتا به شکل Case presentation خواهد بود. همچنین با توجه به اینکه اساتید با تجربه و همکاران عزیز ما با زحمت زیادی برنامه ۴ روز و هر روز به مدت ۸ ساعت را با استفاده از بهترین روش های آموزشی و آخرین پیشرفت‌های علمی در زمینه قلب و عروق فراهم آوردند و یک مجموعه بی‌نظیر علمی – آموزشی را فراهم آورده‌اند، بهترین فرصت جهت همکاران عزیز و پزشکان و دانشجویان و

دستیاران رشته‌های قلب و عروق و رشته‌های وابسته فراهم است تا از این بوستان علمی گلی بچینند و به قول سعدی علیه الرحمه:

ابر و باد و مه و خورشید و فلک در کارند تا تو نانی به کف آری و غفلت نخوری

این مجموعه علمی از تاریخ ۲۹ مهرماه تا دوم آبان‌ماه از طریق لینک http://www.skyroom.online/ch/intervention2020/mecc13th ، و به طور رایگان قابل دسترسی می‌باشد و عزیزانی که درخواست کسب امتیاز بازآموزی دارند باید از طریق سایت بازآموزی به نشانی www.ircme.ir اقدام به ثبت نام در پنل‌های مورد نظر بر اساس گروه‌های هدف هر پنل، نمایند.

با احترام

دکتر زیبایی نژاد- رئیس کنگره

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Congress Organization

Head of Congress: Dr. Zibaeenezhad

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Program

13th Middle East Cardiovascular Congress
6th Congress of Clinical Cases in Complex
Cardiovascular Therapeutics

CONGRESS DETAILED PROGRAM

First Day Thursday 21Oct 2021 (29 Mehr)			
Congenital Heart Disease NON SURGICAL TREATMENTS IN CHDs			
Moderator: Dr. Mehdizadegan			
8:00-10:45	Complicated VSD closure	Dr. Behzad Alizadeh	Mashhad
	Complicated ASD closure	Dr. Akbar Molaei	Tabriz
	Stenting of COA in small infant	Dr.Mohamadreza Edraki	Shiraz
	Management of fenestration in TCPC	Dr. Hamid Amoozgar	Shiraz
	Branch PA stenting	Dr. Hojat Mortezaeian	Tehran
	PDA stenting	Dr.Keihan Saiadpour	Tehran
10:45-11:00	Opening Ceremony		
	Dr. Mehrzad Lotfi (Head of Shiraz university of Medical Sciences Dr. Zibaeenezhad (Head of Shiraz Cardiovascular Research Center)		
Prevention- Metabolic Syndrome			
Moderator: Dr. Mojgan Gharipour, Dr.Babaeebeigi			
11:00-14:00	Metabolic syndrome and Coronary artery disease	Dr. Masoud Shekarchizadeh	Esfahan
	Infection with Covid-19 in subjects with Metabolic Syndrome	Dr. Abdolmehdi Baghaie	Esfahan
	Epigenetic modification, aging and metabolic syndrome	Dr. Mojgan Gharipour	Esfahan
	Incidence of cancer in patients with metabolic syndrome	Dr. Mohammad Reza Khosravi	Esfahan

	Pharmacological treatment in metabolic syndrome	Dr. Mahrnoosh Dianatkhah	Esfahan
	Herbal medicine and metabolic syndrome	Dr. Pardis Mohammadpour	Esfahan
	Dietary Strategies for Metabolic Syndrome	Dr. Noushin Mohammadifard	Esfahan
Non STEMI			
Moderator: Dr. Aghajani			
14:00-15:30	Latest data for selection and duration of DAPT, TA and DTI	Dr. Hassan Aghajani	Tehran Heart Center
	NSTEMI -Case based discussions	Dr. Mojtaba Salarifar	Tehran Heart Center
	NSTEMI -Case based discussions	Dr. Mohammad Sadeghian	Tehran Heart Center
	NSTEMI -Case based discussions	Dr. Maryam Mehrpoya	Tehran Heart Center
	NSTEMI -Case based discussions	Dr. Mehdi Mehrani	Tehran Heart Center
Left Main PCI			
Moderator: Dr. Seifollah Abdi **Pannelist: Dr.Ata Firouzi**			
15:30-17:00	Result of last trial for LM PCI	Dr. Zahra Hoseini	Rajaei Hospital Tehran
	Left Main Lesion Case	Dr.Ata Firouzi	Rajaei Hospital Tehran
	Left Main Lesion Case	Dr Arash Hashemi	Tehran
	Left Main Lesion Case	Dr. MohammadJavad Alemzade-Ansari	Rajaei Hospital Tehran
	Left Main Lesion Case	Dr. Abbas Soleimani	Tehran, Sina Hosp.

Second Day Friday 22Oct 2021 (30 Mehr)			
Valvular Heart Disease New era in management of valvular heart disease			
Moderator: Dr. Moaref, Dr.Abtahi			
8:00-11:00	Patient with severe PR post TF who wants to become pregnant	Dr.Tannaz Razmi	Shiraz
	Patient with MVR who wants to become pregnant	Dr.Zahra Roomi	Shiraz
	35 y/o asymptomatic man with severe AR with LVEF of 53%.	Dr.Dina Ashouri	Shiraz
	Biologic valve thrombosis	Dr.Alireza Moaref	Shiraz
	Mechanical valve thrombosis	Dr. Firooze Abtahi	Shiraz
	severe primary MR	Dr. Ahmad Mirdamadi	Esfahan
	Aortic stenosis	Dr. Maryam Tavasoli	Shiraz
	Highlights of 2021 ESC guideline in management of patients with valvular heart disease	Dr. Firooze Abtahi	Shiraz
Prevention - Hyperlipidemia			
Moderator: Dr. Bahram Aminian			
11:00-14:00	Primary and secondary prevention based on two world-renowned guidelines in the appropriate and targeted control of hypercholesterolemia with the aim of preventing the progression and complications of coronary artery stenosis	Dr. Bahram Aminian	Shiraz
		Dr. Kamran Aghasadeghi	Shiraz
		Dr. Hasan Riahi	Tehran
		Dr. Reza Ghanavati	Tehran

CTO PCI			
Moderator: Dr.B. Bayani Pannelist: Dr.A.Firouzi , Dr.A.Mohammadi			
14:00-15:30	CTO Case	Dr. Roberto Garbo	Italy
	CTO Case	Professor Omer Goktekin	Turkey
	CTO Case	Dr.Jalal .Nowroozi	Tehran
	CTO Case	Dr.Arash.Hashemi	Tehran
	CTO updates	Dr.Baktash.Bayani	Mashhad
STEMI PCI			
Moderator: Dr. Naghshtabrizi			
15:30-17:00	Latest Guideline of STEMI, Novel Idea	Dr. Behshad Naghshtabrizi	Hamedan
	Infarct Related Artey Dilemma	Dr. Azadeh Mozayanimonfared	Hamedan
	Stent thrombosis , a clinical perspective	Dr. Kianoosh Hosseini	Hamedan
	Primary PCI on left main	Dr.Samad Ghafari	Tabriz
	NON-CULPRIT CTO IN STEMI AND CARDIOGENIC SHOCK	Dr. Mehdi Tolooei	Tabriz

Third Day Saturday 23Oct 2021 (1Aban)			
Electrophysiology **Recent advances in the treatment of cardiac arrhythmias based on actual cases performed in Iran**			
Moderator: Dr. Nikoo			
8:00-11:00	A young boy in elicited storm	Dr.Mohammadhosein Nikoo	Shiraz
	A middle age lady with wide QRS tachycardia	Dr.Vahid Jorat	Shiraz
	ST Segment Elevation following Transseptal Catheterization	Dr. Amir Aslani	Shiraz
	A case of transient AVB what is the cause, adverse drug reaction or Covid?	Dr.Alireza Heidari	Mashhad
	Novel SCN5A variants identified in a group of Iranian Brugada syndrome patients	Dr. Mehrdad Saravi	Mazandaran
	Implanting pacemaker in MVR+TVR+AVR patient	Dr. Mehdi Nemati	Shiraz
	Outflow tract PVC, left or right	Dr. Mehdi Taherpour	Shiraz
	An interesting case of Epicardial VT ablation	Dr.Ali Bozorgi	Tehran
	Incisional AFL in post-sinus venous ASD repair patient	Dr. Majid Haghjoo	Tehran
	Asymptomatic intermittent preexcitation to ablate or not to ablate	Dr. Saeid Oreie	Tehran
	RFA of VT in patients with HCM	Dr. Zahra Emkanjoo	Tehran

Prevention - Diabetic			
Moderator: Dr. Dabaghmanesh			
11:00-14:00	Primary prevention in diabetic patients	Dr. Mohammadjavad Zibaeenezhad	Shiraz
	Nutrition in Diabetic Patients with Cardiovascular Diseases	Dr. Jalil Masoumi	Shiraz
	The role of anti-obesity drugs in the prevention of heart disease	Dr.Mohammadhosein Dabaghmanesh	Shiraz
	New drug in treatment of diabetic patients	Dr. Faezeh Sadeghian	Shiraz
	Initial combination therapy in treatment of diabetic patients	Dr.Mohammadhosein Dabaghmanesh	Shiraz

Bifuraction PCI			
Moderator: Dr. Aminian			
14:00-15:30	Latest EBC recommendation for bifurcation PCI	Dr. Bahram Aminian	Shiraz
	Two is better than one	Dr. Ehsan Bahramali	Shiraz
	Complex bifurcation	Dr. Alireza Abdi	Shiraz
	Complex Bifurcation PCI in patient with STEMI	Dr. M. Sajjadi	Zahedan
	Best strategy for bifurcation pci	Dr. Afsaneh Mohammadi	Mashhad
Complication PCI 1			
Moderator: Dr. AR. Abdi			
15:30-17:00	Time to reintervention in dissected coronary arteries.	Dr. Hosein Farshidi	Hormozgan
	Rupture of the coronary artery	Dr. AliReza Rashidnezhad	Kerman
	PCI in Complication case	Dr. Mohammadreza Afshani	Ahvaz
	case with Left main cut	Dr. Abbas Valizadeh	Shiraz
	PCI in Complication case	Dr.Farzad Adl	Shiraz
	PCI in Complication case	Dr. Seyed farshad sadri	TUMS. Yas hospital

Sunday 24Oct 2021 (2Aban)			
Hart Failure and Cardiac Transplant			
Moderator: Dr. M. Zamirian			
8:00-11:00	Physiology of the transplanted heart	Dr. Hossein Navid	Tehran
	Donor organ preservation and surgical Consideration in heart transplant	Dr. Masoud Shafiee	Shiraz
	Graft dysfunction after heart transplant	Dr. Mahmoud Zamirian	Shiraz
	How to avoid and how to manage HLA incompatibility	Dr. Behrooz Gharesifard	Shiraz
	Review of new heart failure guideline	Dr. Hossein Navid	Tehran
	Heart failure with preserved ejection fraction (HFPEF) pathophysiology, treatment and prognosis	Dr. Marjan Hajahmadi	Tehran
	Pathophysiology, Clinical manifestation and management of high output heart failure	Dr. Sepideh Taghavi	Tehran
	Surgical management of heart failure	Dr. Mehrdad Rahmanian	Tehran
Prevention - Hypertentsion			
Moderator: Dr.AR. Khosravi			
11:00-14:00	Epidemiology of HTN	Dr. Maryam Eghbali	Esfahan
	Diagnosis & patient evaluation before treatment	Dr. Alireza Khosravi	Esfahan
	Risk stratification of hypertensive patients	Dr. Jamshid Najafian	Esfahan
	Update on medical treatment (Tips & Trips	Dr. Samad Ghaffari	Tabriz

	Diet & Life style modification in hypertensive patient	Dr. Noushin Mohammadifard	Esfahan
	Management of difficult controlled HTN	Dr. Mohammadhadi Mansouri	Esfahan
	Management of hypertensive emergencies	Dr. Ehsan Shiravani	Esfahan
Peripheral PCI			
Moderator: Dr. Ali Sadrbafghi			
14:00-15:30	PCI in a case with peripheral artery disease	Dr. Yadollah Fathi	Kerman
	PCI in a case with peripheral artery disease	Dr. Ali Sadrbafghi	Yazd
	PCI in a case with peripheral artery disease	Dr. Mohammadreza Radpei	Shiraz
	Carotid Angioplasty	Dr. Fatemeh Baharvand	Gilan
	Management of co-occurring intracranial hemorrhage and fatal pulmonary embolism	Dr. Hamidreza Varastehravan	Yazd
	Chimney stent graft for left subclavian artery preservation during thoracic endograft placement	Dr. Yaser Jenab	Tehran
Complication PCI 2			
Moderator: Dr.MJ. Zibaeenezhad			
15:30-17:00	PCI in Complication case	Dr. Mohammadjavad Zibaeenezhad	Shiraz
	PCI in Complication case	Dr. Mohammadali Ostovan	Shiraz
	PCI in Complication case	Dr. Mahmoud Shabestari	Mashhad
	PCI in Complication case	Dr. Ahmadreza Asare	Ahwaz
	PCI in Complication case	Dr. Alireza Khosravi	Esfahan

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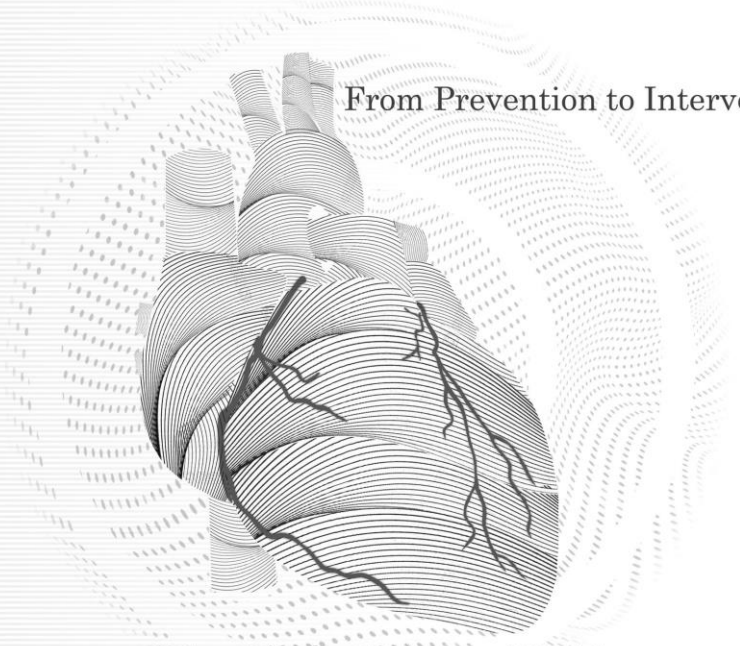
From Prevention to Intervention



21- 24 October 2021

29 Mehr- 2 Aban 1400

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Oral Presentations

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Making fenestration and Closure of fenestration after TCPC

Hamid Amoozgar, MD
Shiraz University of Medical Sciences, Shiraz, Iran

After single ventricle repair (Fontan or total Cavo-pulmonary connection), one of the issues is making fenestration decompress the pathway. Fenestration makes a right to left shunt but improves the postoperative outcome of the patients with borderline pulmonary hypertension or decreased heart function but increases the chance of paradoxical emboli.
Presenting case is a boy that developed anasarca, Alb=2, and protein-losing enteropathy after TCPC. Making fenestration controlled his symptoms.

Approach to a case of acute bradycardia in a child

Alireza Heidari-Bakavoli, MD.
Associate professor of cardiology
Department of Cardiology, Qaem hospital
Mashhad University of Medical Science

Background
Viral myocarditis is a common cause of transient abnormal electrocardiogram (ECG) changes in children. Presentation of myocarditis ranges from asymptomatic infection to fulminant heart failure and sudden death. Many children present with nonspecific symptoms such as dyspnea or vomiting, frequently leading to misdiagnosis.
ECG abnormalities may be seen in more than 90% of cases.
Case Report: An eight year-old boy suffered Convulsive syncopal episode and was found to have high-grade atrioventricular block (AVB) caused probably by viral myocarditis.
His parents reported he has been in a good health status until 2 days before admission.
After taking 4 mg of per oral Ondansetron he had complaint of dizziness, weakness and seizure like syncope episodes.
He was admitted in hospital with complete AVB and temporary transvenous pacemaker was implanted.
He denied chest pain, palpitation, fever and flu like symptoms before.
His work up including PCR for Covid-19, chest CT, echocardiography and Cardiac MRI was negative and only mild leukocytosis and rise in serum Troponin was detected.
Under close monitoring,and after taking IV methylprednisolone the AVB and other ECG changes resolved over the following 4 days of hospital admission in a stepwise manner.
He was discharged after one week of admission without any complication.
In this case report, we discuss the incidence, pathogenesis, and outcomes of conduction disturbances in acute myocarditis.
Conclusion: High-degree AVB can occur in patients with acute myocarditis, and higher-degree AVB is correlated with greater myocardial invovement.
Severity of pathological changes may reflect the reversibility of AVB. In the majority of cases, however, this rhythm disturbance is transient and does not require permanent pacemaker placement.

Novel SCN5A variants identified in a group of Iranian Brugada syndrome patients

Taraneh Ghaffari, Naser Mirhosseini Motlagh, Abdolreza Daraei' Majid Tafrihi' Mehrdad Saravi, Davood Sabour

Brugada syndrome (BrS) is a rare hereditary arrhythmia syndrome that increases an individual's risk for sudden cardiac death (SCD) due to ventricular fibrillation. This disorder is regarded as a notable cause of death in individuals aged less than 40 years, responsible for up to 40% of sudden deaths in cases without structural heart disease, and is reported to be an endemic in Asian countries. Mutations in SCN5A are found in approximately 30% of patients with Brugada syndrome. This study aimed to investigate mutations in the SCN5A gene in a group of Iranian Brugada syndrome patients. Nine probands (n = 9, male, mean age = 39) diagnosed with Brugada syndrome were enrolled in this study. Exon 2 to 29 were amplified by PCR and subjected to direct sequencing. Eight in silico prediction tools were used to anticipate the effects of non-synonymous variants. Seven known polymorphisms and 2 previously reported disease-causing mutations, including H558R and G1406R, were found in the studied cases. Twenty novel variants were identified: 15 missense, 2 frameshift, 2 synonymous, and one nonsense variants. In silico tools predicted 11 non-synonymous variants to have damaging effects, whereas frameshift and nonsense variants were considered inherently pathogenic. The novel variants identified in this study, alongside previously reported mutations, are highly likely to be the cause of the Brugada syndrome phenotype observed in the patient group. Further analysis is required to understand the physiological effects caused by these variants.

Keywords Arrhythmia; · Brugada syndrome; · Mutation; · SCN5A; · Iran

Dietary Strategies for Metabolic Syndrome

Noushin Mohammadifard, PhD, Assistant Professor
Head of Nutrition Department, Isfahan Cardiovascular Research Institute, Isfahan University of Medical Sicences

Metabolic syndrome is a cluster of risk factors including abdominal obesity, low levels of high-density lipoprotein cholesterol, hypertriglyceridemia, hypertension, and insulin resistance. Lifestyle modifications, especially dietary behaviours, are the main strategy for the management, prevention and treatment of metabolic syndrome. Now we review the potential benefits of various dietary approaches on metabolic syndrome. Due to the interaction of nutrients and foods, overall diet might be more informative than using only single nutrient or food. Recent evidence supports the implementation of healthy food-based dietary interventions instead of calorie or isolated nutrient restriction. Several evidence have examined the health benefits of different dietary approaches including Mediterranean diet (MedDiet), Dietary Approach to Stop Hypertension (DASH) diet, plant-based diets, low carbohydrate and very low carbohydrate diets (ketogenic diets), low fat diet, high protein diet, nordic diet and intermittent fasting diet for metabolic syndrome. Compared to low-fat diets and very-restricted diets, the scientific evidence supports the use of the MedDiet intervention as the new paradigm for metabolic syndrome prevention and treatment. The nutritional distribution and quality of the MedDiet allows health professionals to provide easy-to-follow dietary advice without the need for a restricted diet. Although recent randomised clinical trials have suggested the protective effect of the intake of whole grain and plant-based protein food sources in patients with metabolic syndrome, it needs to evaluate the efficacy of these dietary patterns. Nonetheless, the commitment and implication of the patient are critical in all life-style interventions based on dietary modifications.

Mechanical prosthetic valve thrombosis

Firoozeh Abtahi
Cardiovascular Research Center, Shiraz university of medical sciences, Shiraz, Iran

Mechanical prosthetic valve thrombosis is a serious and life-threatening complication of valve replacement, with the annual rate of about 0.1% to 5.7%. The high morbidity and mortality associated with mechanical valve thrombosis warrants prompt diagnostic assessment.

The success of the treatment depends on the early and rapid diagnostic evaluation, and proper management . Transthoracic echocardiography is a first imaging modality which can detect evidence of obstructive malfunction of prosthetic valve with assessment of leaflet motion and valve hemodynamic function , and also identification of thrombosis. In most cases , transesophageal echocardiography will provide important incremental diagnostic information , which will also guide therapeutic management .

The management option depends on ; presence of prosthetic valve obstruction , the size of the thrombus , the clinical and hemodynamic condition of patient . Whatever the option, the management of mechanical valve thrombosis is high risk .

Emergency cardiac surgery is recommended for obstructive mechanical valve thrombosis in critically ill patients without a contraindication to surgery. Management of nonobstructive thrombosis depends on the size of the thrombus and the occurrence of a thromboembolic event. Surgical management should be considered for a large (with size more then 10 mm) non-obstructive mechanical valve thrombosis that is complicated by embolic event or persists despite adequate anticoagulation.

Fibrinolysis may be considered as a treatment option , in situations where cardiac surgery is not available or in patients with high surgical risk, also carries risk of bleeding complication and thromboembolism .

Long segment hypoplastic aortic arch stenting in small children

Mohammadreza Edraki M.D.
Associate Professor
Shiraz University of Medical Sciences, Shiraz Iran

Background: Hypoplastic aortic arch in small children might occur in isolated or with simple or complex congenital heart diseases, and results in congestive heart failure, and pulmonary hypertension.
Method: Surgical approach of this entity might be very difficult or non-feasible, especially amongst neonates and low weight children, particularly in complex intracardiac abnormalities.
Hypoplastic aortic arch stenting may be performed with cook formula stents in the hope of re-dilating the stents in the future.
Results: We performed stent insertion for neonates and small children with long segment hypoplastic aortic arch and complex congenital heart diseases for whom surgical correction was not applicable. Our experiences about the stenting procedures, and outcomes of these patients is explained.
Conclusion: Severe long segment hypoplastic aortic arch stenting in small children is safe, and might be done if surgical correction is not feasible.

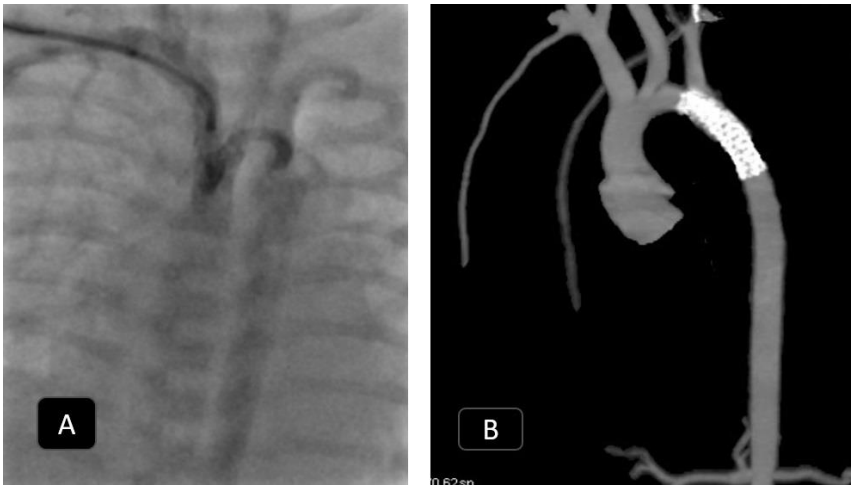

Figure: A, a 14 days old neonate before stenting; B, the patients in 8 months old age

Significance of ST-Segment Elevation following Transseptal Catheterization

Amir Aslani, M.D. Shahab Shahrzad, M.D.

Background: Transient ST-segment elevation during transseptal catheterization has been reported previously. The aim of this study was to evaluate the prevalence and course of ST-segment elevation following transseptal catheterization in patients referred for left-sided accessory pathway ablation.
Methods: Patients undergoing transseptal catheterization for left-sided accessory pathway ablation was enrolled in this prospective cohort study. During and following a transseptal puncture, ST segments of all 12 leads were constantly monitored.
Results: A total of 140 patients were included in the study. Eleven patients (7.8%) experienced ST-segment elevation following transseptal catheterization. Mean time (from a transseptal puncture to ST elevation) was 38 seconds. The mean duration of ST-elevation was 109 seconds.
All patients with ST-elevation had an elevation in lead III, 2 patients had ST elevation only in lead III, and one had ST elevation in III and aVf. Anterior lead ST elevation was not detected. Lead III seems to be the most sensitive lead for ST-elevation monitoring.
Conclusion: Early and transient ST segment elevation can occur in the inferior leads following transseptal catheterization. They are almost always self-limiting with conservative managements and typically resolve rapidly; however, close and continuous observation should be made during this situation and the procedure may be detained until ST segment elevation fades away. Lead III seems to be the most sensitive lead for ST elevation monitoring. ST elevation in anterior leads, persistent ST elevation lasting for more than 3 minutes and ST elevation at the end of cardiac ablation procedure warrants immediate evaluation by diagnostic coronary angiography.

هایپرلیپیدمیا و پیشگیری از بیماری های قلبی عروقی

دکتر امینیان- دکتر کامران آقاصادقی- دکتر حسن ریاحی- دکتر رضا قنواتی
دانشگاه علوم پزشکی شیراز

درمبحث هیپرلیپیدمی با توجه به دو گاید لاین معتبر انجمن قلب آمریکا و انجمن قلب اروپا مباحث مورد بحث قرار میگیرد. در قسمت اول راجع به تغییرات روش زندگی از جمله ورزش روزانه، رژیم غذایی مناسب، کاهش وزن، ترک سیگار، کنترل فشار خون مطالبی مورد بحث قرار خوهد گرفت. نکاتی که اساس درمان های پیشگیری کننده در مبحث هیپرلیپیدمی می باشند .
سپس چهار مبحث کنترل و درمان هیپرلیپیدمی به ترتیب زیر و با جزییات عملی که دانستن آنها در پراکتیس روزانه الزامی است بطور موشکافانه مورد بحث و گفتگو قرار میگیرد:
۱: پیشگیری ثانویه با تکیه بر دو گایدلاین معتبر جهانی مذکور در بالا در کنترل مناسب و هدفمند هیپرکلسترومی با هدف جلوگیری از پیشرفت و ایجاد عوارض تنگی عروق کرونر.
در این قسمت اشاراتی به نقش افزایش تریگیسرید و راه های درمانی جدید آن به عنوان ریسک فاکتوری مجزی از هیپرکلسترولمی نیز خواهد شد.
۲: پیشگیری اولیه در افراد مبتلا به افزایش شدید LDL-C با مقادیر بالاتر از ۱۹۰ میلیگرم در صد در جلوگیری از پیدایش عوارض آترواسکلروتیک مورد بحث قرار خواهد گرفت. ارتباط این میزان افزایش LDL-C با FH بطور موشکافانه مورد بررسی قرار خواهد گرفت.
گاید لاین های معتبر جهانی با تأکید به نکات کلیدی در درمانهای روزانه هدف این قسمت از بحث خواهد بود.
۳: پیشگیری اولیه در بیماران مبتلا به دیابت قندی به منظور پیشگیری از ایجاد آترواسکلروز عروق کرونر با تأکید به گایدلاین های معتبر جهانی، انجمن دیابت آمریکا و انجمن های قلب اروپا و آمریکا.
شناخت بیماران دیابتیک با ریسک بالا و چگونگی درمان هیپرلیپیدمی در این گروه از بیماران نیازمند نکات درمانی عملی است که مورد بحث و گفتگو قرار خواهد گرفت.
۴: پیشگیری اوّلیه در گروه افرادی که در هیچیک از گروه های سه گانهٔ بالا قرار نمیگیرند . مبحث بسیار جالبی خواهدبود که شامل افراد زیادی میشودکه با لحاظ گایدلاین های معتبر جهانی این گروه شایع بیماران نیز مورد بحث و گفتگو قرار خواهند گرفت. در این مبحث چگونگی استفاده از Risk Calculator های پراکتیکال در تعیین ۱۰ سال ریسک آترواسکلروزیس در افراد گوناگون مورد بحث قرار خواهد گرفت و در هریک از گروه های چهارگانهٔ ریسک: ریسک کم؛ ریسک بینابینی؛ ریسک متوسط؛ و ریسک بالا نکات ظریف و عملی درمان هیپرلیپیدمی مورد بحث قرار میگیرد. در این مبحث جایگاه استفاده از کلسیوم اسکور و Risk Enhancers در موارد خاص با جزییات مورد بحث و گفتگو قرار خواهد گرفت.
هدف نهایی این جلسه این است که همکاران گرامی ضمن آشنایی با گایدلاین های موجود بطور پراکتیکال بتوانند از مطالب و مباحث این جلسه در درمان صحیح هیپرلیپیدمی در بیمارانشان استفاده کنند.

مدیریت مشکلات تنفسی کوید در مبتلایان به سندرم متابولیک

دکتر عبدالمهدی بقایی
متخصص داخلی، فوق تخصص بیماریهای تنفسی و مراقبت های ویژه
مرکز تحقیقات پورسینای حکیم اصفهان

مطالعات زیادی بر نقش سندرم متابولیک به ویژه ابتلا به چاقی در بروز، تشدید و اختلال در درمان بیماری های دستگاه تنفس تاکید دارند. درگیری ریه در بیماری ویروسی کوید-۱۹ مهمترین و خطرناکترین نمایش این بیماری پاندمیک به حساب می آید که سبب مرگ و میر و بروز عوارض بعضا ماندگار تا چندین ماه و بیشتر برای جمعیت مبتلا می گردد.
همراهی سندرم متابولیک با ابتلا به ویروس SARS-Cov 2 پیش آگهی بدتری را برای فرد درگیر رقم می زند. تا آنجا که چاقی به عنوان یکی از بارزترین عوامل خطر مرگ و میر در مبتلایان به کوید- ۱۹ از ابتدای پاندمی مورد توجه بوده است.
شناخت ارتباط بین سندرم متابولیک و بیماریهای تنفسی در پاندمی کوید به مدیریت و تصمیم سازی برای راهکارهای بالینی در تشخیص، تریاژ، درمان و پیگیری بیماران مبتلا به کوید-۱۹ کمک خواهدکرد.
در این موضوع، عناوین زیر در سمینار مورد بحث قرار می گیرد:
الف- مروری بر ارتباط بیماری های دستگاه تنفس با سندرم متابولیک از دیدگاه پاتوفیزیولوژی و بالینی
ب- مروری بر پاتوفیزیولوژی درگیری ریه و دستگاه تنفس در بیماری کوید
پ- بررسی مستندات و مطالعات انجام شده در مورد نقش سندرم متابولیک در فرایند درگیری دستگاه تنفس در بیماری کوید
ت- مشکلات مدیریت و درمان بیماران مبتلا به کوید که همزمان دچار اختلالات مربوط به سندرم متابولیک هستند.
ث- راهکارهای ارایه شده در مدیریت بیماران هدف بحث

واژه های کلیدی: سندرم متابولیک، بیماری های تنفسی، کوید-۱۹، چاقی

60 Y/O man with history of TIA 2 weeks before procedure

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CT angiography showed patent left CCA, LICA, LECA,RCCA,RECA
But significant stenosis in origion of RICA.
So the patient was prepared to perform PTA of RICA.
After deployment of distal protection device(emboshield nav3) predilation was perform as we had some trouble for stent passage.
Then stenting was pefrormed with XACT 7_9 tapered self expandable stent .
The patient was completely asymptomatic till this part of procedure, and we check level of consciousness and force of left upper arm whole time during procedure.
But exactly after post dilation the patient became symptomatic(lightheadness, weakness, reduce force of left upper hand)
Angiogram showed noreflow in RICA.
as there was some diifrentioal diagnosis such as spasm, thrombous and plaque embolization or dissection
We decided to extract the distal protection device and check the result.
Immediatly afer removal of distal protection device the flow recovered and when we checked the basket of emboshield , there was large large amount of thrombous whithin it.

سندرم متابولیک و ترکیبات طبیعی

دکتر پردیس محمدپور

سندروم متابولیک به عنوان گروهی از ریسک فاکتورهای کاردیومتابولیک شناخته می‌شود بیماری قلبی و سایر بیماری های از جمله دیابت و سکته را افزایش می‌دهد استراتژی های درمانی این بیماری شامل مداخلات فارماکولوژی و درمان مکمل می‌باشد نوتراسوتیکال ها ترکیبات مشتق شده از مواد غذایی شامل نوترینت های جداشده مکمل های غذایی و فرآورده های گیاهی می باشند که برای حفظ سلامتی تهیه شده اند و دارای ارزش های غذایی می باشند نوترا سوتیکال ها ادعا شده است که از بیماری های مزمن جلوگیری می کنند سلامتی را بهبود می بخشند و فرایند پیری را به تاخیر می‌اندازند و باعث افزایش طول عمر می شوند و عملکرد بدن را بهبود می بخشد. در این مطالعه اثرات مفید نوترا سوتیکال ها در بیماران مبتلا به متابولیک سیندروم از جمله فراورده های استاندارد شده، طول مدت استفاده از مکمل ها و تعین دوز مطلوب که تعیین کننده درمان مناسب می باشد بررسی شده است در این مطالعه به طور وسیعی بر روی نوتوراسوتیکال های موجود در بازار که پلی فنول ها اسیدهای چرب امگا ۳ ،ماکرو المنت ها و ویتامین ها می باشند همراه با اثرات کلینیکال شان بر روی سندروم متابولیک بررسی شده اند.

A 45 years old lady with wide QRS tachycardia

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Ventricular tachycardia (VT) is the most common cause of regular wide QRS tachycardia (WCT). Supraventricular tachycardia with pre-existing bundle branch block or rate dependent bundle branch block (aberrancy) are the other important differential diagnosis. Sometimes, electrophysiologic study to find the cause of WCT and choose appropriate treatment is suggested. Here a case of WCT is presented.

Case presentation: A 45-year-old lady, three months post-partum, came to hospital with palpitation. She denied any other symptoms like chest pain, dyspnea, dizziness and syncope. Her ECG showed regular WCT with left bundle branch block morphology (LBBB), superior axis, HR=148/min without definite evidence of atrioventricular dissociation. After conversion of WCT to sinus rhythm by 100 J biphasic DC cardioversion, her ECG showed; PR interval = 224 msec, incomplete LBBB and normal QRS axis. In echocardiography after cardioversion, mildly enlarged LV with mild global hypokinesia and left ventricular ejection fraction (LVEF) about 45% were noted. Her family history was negative for sudden death or any cardiac disease. All lab data including Covid-19 tests and cardiac troponin were in normal limit. Cardiac MRI after two weeks showed normal LV size with diffuse increase extracellular volume expansion in interventricular septum, inferior and inferolateral wall of left ventricle. Right ventricle was normal and LVEF was 54%. Her cardiac MRI confirmed myocarditis. In electrophysiologic study, baseline data showed prolonged HV interval (110 msec). During programmed ventricular stimulation a wide QRS tachycardia with cycle lenght=400 msec, LBBB morphology, AV dissociation and HV interval of 84 msec was induced. Overdrive pacing from the His region caused concealed entrainment of VT and then stopped it easily. A dual chamber intracardiac defibrillator (ICD) was implanted. In first year after ICD implantation, one episode of VT was noted that was treated successfully by Anti tachycardia pacing (ATP), however the patient has not received any shock in this period of time. The ventricular pacing rate has been less than 1% since last year.

Discussion: Ventricular tachycardia with prolonged HV interval is mostly compatible with bundle branch reentrant tachycardia (BBRT). This arrhythmia is an uncommon form of VT due to reentry between bundle branches. It is most commonly seen in patient with cardiac diseases and associated conduction ventricular abnormality, although rare cases with normal cardiac function have been reported. Pharmacologic treatment of BBRT is usually unsuccessful and patients need ablation of right bundle, residual conduction through left bundle and pacemaker or ICD implantation in case of complete heart block after the ablation procedure. Our case had acquired heart disease with conductive disorder who needed to pacemaker implantation due to prolonged HV interval. Meanwhile she had a ventricular tachycardia the was terminated by overdrive pacing easily. We decided to implant an ICD for management of her conduction disorder and VT. We postponed ablation until repeated VT episodes unresponsive to ATP.

Conclusion: ICD implantation for treatment of BBRT in patients with normal left ventricular function and presence of residual atrioventricular conduction could be considered to avoid unnecessary RV pacing and decrease risk of pacing induced left ventricular systolic dysfunction.

Heart failure with preserved ejection fraction (HFPEF) pathophysiology, treatment and prognosis

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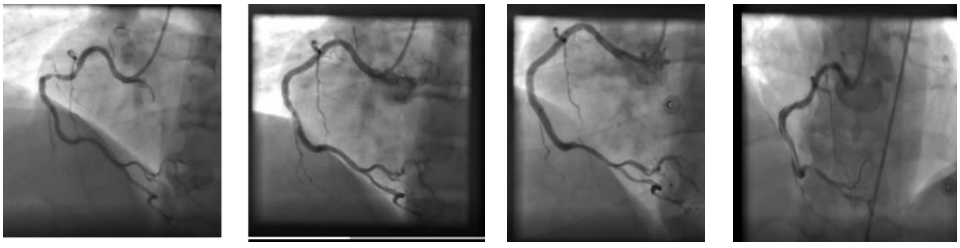
HFpEF is a vital component of HF which is a complex disorder caused by multifactorial stresses secondary to comorbidities.The diagnosis of HFpEF requires clinical symptoms and/or signs of heart failure, as well as evidence of preserved LVEF and diastolic dysfunction Identification of other underlying causes may lead to treatment that can optimize these patient's outcomes. Patients with HFpEF have significant morbidity and mortality but, unlike HFrEF,there are currently no effective validated therapies. In addition, HFpEF is poorly investigated. To better understand the mechanisms underlying this disease and to explore future therapies, I am going to update the latest knowledge of the pathophysiology, diagnosis, treatment, and prognosis of HFpEF.

Stent Thrombosis, a clinical perspective

Kianoosh Hosseini

Case presentation :A 58-yearold gentleman presented with low threshold chest pain and wasadmitted with a diagnosis of acute coronary syndrome. Coronary Angiography revealedsevere stenosis at mid part of right coronary artery (RCA) with shepherd crook course. Angioplasty of RCA was performed using a 3.5*33 drug eluting stent (DES). The stent was then post dilated using a 3.75*15 non-compliant balloon at a pressure of 18 atmosphere. Forty minutes after transferring the patient to the ward he developed severe chest pain and 6 mm ST segment elevation in electrocardiography (ECG) leads II , III andavf with reciprocal ST segment depression in leads I andavl ,compatible with acute inferior wall myocardial infarction (MI) most probably due to acute stent thrombosis (ST). the patient was transferred back to the angiography suit immediately. Femoral arterial access was obtained and emergent angiography using left Amplatz1 guide catheter showed complete in stent occlusion of the RCA. After difficult wiring with a work horse coronary 0.014 wire, visible intimal flap which was extended near to RCA bifurcation confirmed the presence of distal stent edge dissection.Since we couldn't pass the stent, a high support coronary wire as a buddy wire was used as well.A 3.5*38 DES was overlapped with the previous stent and post dilation was done using a3.75*15 and a 4.0*10 non-compliant balloons. Chest pain and ECG changes was relieved and the patient was transferred to CCU and discharged home within the next day.



Discussion: The incidence of STis relatively low, but high mortality and recurrence rates as well as large number of percutaneous coronary interventions (PCI) performed annually in the world and regarding its complex pathological scenario, make it an important issue for public health. By definition,ST that occurs in the first month of implantation is considered early (incidence less than 1 %), within 1 month to 1 year is considered late (incidence 0.5 -1 %) and after the first year of implantation is considered very late ST (incidence 0.2- 0.4 % with new generation DES and about 2% with older generation DES). Several pathophysiological mechanisms related to the patient, device, lesion and procedure are responsible for ST; among them the strongest predictors of early and late ST are unplanned

interruption of dual antiplatelet therapy (DAPT) with an Odd's ratio of 26 and history of malignancy with an Odd's ratio of 17 respectively. Advances in coronary imaging resulted in a better understanding of ST mechanisms and allowed selection of appropriate strategies for prevention and treatment of this complication. New insight about this complication has lea to innovations in design and structure of new coronary devices aiming to minimize its incidence.

Device related predictors of stent thrombosis: Several modifications and advances in shape and designhas led to the evolution of newer generations of DES. Some of these adjustments include combination of metallic alloy (Co Cr or Pt Cr with lower nickel content instead of stainless steel), changes in strut thickness and footprint (strut width), strut geometry, more biocompatible eluting polymer or polymer free DES and eluting drug in the abluminal side of the struts. The rate of ST with these new DES has decreased two to threefolds compared with first generation of DES. Among the new generation DES, Everolimus eluting PlatinumCromium or CobaltCromium and Zotarolimus eluting Resolute has shown the least incidence of ST. New generation DES are also preferred over BMS in high bleeding risk patients who need short duration of DAPT.The potency and duration of DAPT Should be tailored according to the specific ischemic as well as bleeding risk of the patient and the lesion treated by stenting. This concept has been reflected in the related guidelines.

Intracoronary imaging: The role of intracoronary imaging in identifying and addressing the ST is of paramount importance. Pathological processes such as stent undersizing, underexpansion, early and late malapposition, evagination, endothelial bridges, uncovered struts, dismantling, neoatherosclerosis and edge dissections have been responsible for ST in different studies. Thanks to precise imaging tools such as optical coherence tomography (OCT) Some of them are novel concepts that has been discovered in the recent years. Knowledge about the underlying mechanism will help to adopt the best treatment strategy. In our presented case, the mechanism responsible for ST was distal stent edge dissection evident on angiography.

Edge dissection: Edge dissection could be identified by angiography and intracoronary imaging, particularly when compromises the coronary flow. Distal edge dissections are more flow limiting than proximal ones. Most non flow limiting edge dissections heal spontaneously and do not cause ST. Thresholds for concern that prompt action include: dissections more than 200 micrometer at distal edge, dissection angle of more than 60 degrees, dissections reaching media and longitudinal dissection length of more than 3 millimeters. All flow limiting dissections are being treated with stenting.

Incisional AFL in post-sinus venous ASD repair patient

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A 34-year-old man with history of post-sinus venous ASD presented with drug-refractory palpitations. Resting ECG showed regular narrow complex tachycardia with 2:1 AV conduction compatible with AFL. LAT mapping localized the tachycardia isthmus into the prior atriotomy site. A few RF applications in this area resulted in tachycardia termination and noninducibility.

Surgical Options for Heart Failure other than Heart Transplantation Review of studies with sharing our experiences

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Congestive heart failure is a major public health problem and more than 20 million people are affected worldwide. Orthotopic heart transplantation (OHT) offers successful and reproducible long term results and is the treatment of choice for patients with medically refractory end-stage heart failure. Access to OHT has been restricted due to limitations of age, comorbid conditions and donor availability. This leaves the vast majority of CHF patients seeking other options such as coronary revascularization, mitral valve reconstruction, partial left ventriculectomy, mechanical assist devices and biomedical devices for heart failure.
In this review, we sought to have a turn-around this option and finally our single center experience in this regard.

When a guide extention catheter makes complication

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آقای ۸۰ ساله با فیزیک بدنی مناسب کاندید آنژیوگرافی عروق کرونر بـدلیل دردسـینه فعـالیتی پاسـخ دهنده به پرل نیترات از چهارماه قبل بیمار، تغییرات نواری ندارد و اجکشن فراکشن معادل ۴۵٪ دارد . حین رد کردن استنت، این کیس با دشواری و سلسله اتفاقات متعدد همراه شد.

Prevention of cardiovascular disease in diabetic patients

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Patients with DM have twice risk of incident myocardial infarction and stroke of general population. When diabetic exists in patients with established CVD, absolute risk factor for future events is very high. Fortunately, circulatory disease such as coronary heart disease (CHD), stroke, peripheral arterial disease, cardiomyopathy and congestive heart failure and even early death could be preventive by treatment of hypercoagulation, dislipedemia and hypertension and improve Event-Free survival risk in people with diabetic who already have clinical CVD.

Life Style change: medical nutrition therapy and a rehab exercise, modify lipids and reduce blood pressure and control of glycaemia and weight control.

Fat intake: Saturated fat should be 7% of energy intake, dietary cholesterol intake of trans unsaturated fatty acid should be <1% of energy intake. Main fatty acid should be monounsaturated or poly unsaturated fat.

Blood pressure management is the most critical aspect of the care of the patients with DM.

ACE inhibitors are the drug of choice in the inhibitors management of hypertension in people with diabetes or kidney disease. Most patients require multiple drug therapy including thiazide diuntics, B blockers, ACB inhibitors. ARBs, and calcium channel blockers which has beneficial effect in reducing CVD.

All patients with diabetes should be asked about tobacco use status at every visit

Complex Bifurcation PCI in patient with STEMI

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Background: A 58 years old man, with history of hypertension, dyslipidemia and smoking presented with ACS . ECG revealed ST elevation in lateral leads and positive troponin was present in the biochemistry study. transthoracic echocardiography showed mildly reduced LVEF. patient received reteplase at township and dispatched for pharmacoinvasive strategy to our center. selective coronary angiography performed via right radial access and showed 2 vessel disease.
There was true LAD/Diagonal bifurcation lesion (medina 0.1.1) as culprit and also significant proximal RCA lesion. successful PCI on LAD/Diagonal bifurcation was done by using DK-Crush technique. stage PCI on RCA performed 2 weeks later. At five months follow-up , patient is asymptomatic with good functional capacity and normal LVEF.
Conclusion: There is growing evidence that DK crush could be the best technique when a 2-stent strategy is chosen to treat bifurcation lesion and this technique can be used safely and effectively in patients with STEMI via radial access in stepwised manner with good clinical outcomes.
Key words: bifurcation lesion, ST-segment–elevation myocardial infarction , radial

Primary PCI on LM

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A 61-year-old man who was brought to the cath. lab department by an EMS(247 code). The ECG showed sinus tachycardia, ST elevation in V1-2 and aVR, aVL and ST depression on inferior and V4-6 leads. Upon arrival, he developed a Ventricular fibrillation, which was corrected with defibrillator. Patient was in shock state that received inotropic support. Coronary angiography showed LM total occlusion and near normal RCA. After guiding catheter engagement and wire crossing to LAD and LCX, kissing predilation performed, after that LAD-LM and LCX-LM stenting (V stenting) done. Final result was excellent and patient hemodynamic and clinical state improved rapidly and discharged home at 4th admission days with final LVEF about 50%.

A Complicated PCI in ACS case

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A 42 -year-old man presented with some episode of at rest chest pain and after routine physical activity recently and admitted YAS hospital ER with ACS .BP; 120/85 HR 78 .Risk factors; former opioid user, current smoker (46-pack-year ECG; NSR, NAX, type A wellens .Cardiac troponin I was positive and other LAB tests was normal. bed side Echocardiography was done and LVEF was 45% and significant Wall motion abnormality in LAD territory was seen with no significant Valvular abnormalities. Coronary angiography via RRA was done. LAD had severe discrete stenosis at mid portion and other vessels were normal. After lesion preparation with NC balloon 3.00-15 mm up to 16 atm, intimal coronary dissection was happened. It propagated ante grade and retrograde .the patient experienced more chest pain and deteriorated suddenly. After micro catheter advancement and angiogram, LAD stenting was done with long overlap DESs successfully and patient came down and his chest pain resolved and hemodynamically was stable. He discharged after three days admission and close monitoring at CCU without any complain . After 4 months follow up his data's were ; LVEF 55%,Normal electrocardiogram and without any symptoms in routine and extraordinary activities.

Primary PCI on Left main

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A 32- year- old man was admitted to our hospital 4 hours after acute onset severe retrosternal pain. He had Hx. of 14 PY smoking and denied any drug abuse. On arriving in E.R he was in cardiogenic shock, IV inotrope infusion was immediately started. ECG obtained and showed severe ST elevation of anterolateral leads together with ST depression of inferior leads. The patient was immediately transferred to the cath lab with a BP of 90/70 while receiving IV inotrope and O2 sat of about 90% while breathing with a face mask. Coronary Angiography showed a normal and dominant right system with total occlusion of Left main (LM) trunk. LM was crossed with two workhorse wires toward LAD and LCX and after balloon pre dilatation and thrombus aspiration with thrombectomy catheter, a coronary DES was implanted from LM to proximal LAD. TIMI III flow was established in distal vessels. Because of persistent haziness and thrombus at the origin of LCX despite balloon inflation, another DES was deployed in this segment and after kissing balloon inflation and final POT an IABP was deployed. The patient's general condition was improved and he was transferred to CCU where a control ECG showed near- complete ST resolution. Echocardiography just after the procedure revealed an LVEF of about 10-15% and 9 days later the patient was discharged with LVEF< 20% and functional class of II-III, on optimal medication including high dose loop diuretic.

He was repeatedly admitted because of heart failure in the 4 months follow-up. A Control Ct angiography showed patent LM and al coronary arteries. Tests for thrombophilia were negative and we scheduled him for heart Tx that was performed later. Currently and 3 years after the index event he is doing good with a transplanted heart. We believe that the late referral of this case for primary PCI was the main reason for poor ventricular function recovery after PCI despite TIMI III flow after the procedure. His history highlights the importance of on-time referral of such cases. In a recently published multicenter study from Spain, 0.58% (46 cases) of 7930 emergent PCI patients had acute LM occlusion. At admission, cardiogenic shock was present in 89% of patients, and cardiopulmonary resuscitation was required in 67.4%. All the patients had right dominance (left dominance could be incompatible with life). Angiographic success was reported in 80.4% of the procedures, 13 patients (28.2%) died during the catheterization, and the in-hospital mortality rate was 58.6% (27/46). At one year and at the final follow-up, 18 patients (39%) were alive, including four cases successfully transplanted. Multivariate analysis showed that post procedural TIMI flow was the only independent predictor of in-hospital mortality (OR 0.23, (95% CI 0.1–0.36), $p < 0.001$). (1)

Reference: Gutiérrez-Barrios, A., et al. "Primary angioplasty in a catastrophic presentation: acute left main coronary total Occlusion—The ATOLMA registry." Journal of Interventional Cardiology 2020 (2020)

PDA stenting

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PDA stenting is the implantation of a stent in ductus arteriosus to keep it open. It serves as a conduit to maintain pulmonary or systemic flow, and sometimes for the prevention of PH crisis. It was developed due to high mortality rate of surgical BT shunt in neonates (10% in developed countries). It serves as a bridge to total surgical repair or sometimes a BT shunt at older age while the former is not possible.

Generally there are 3 ways to reach the ductus for this procedure: via the femoral artery, via the femoral vein and VSD (only in those with a subaortic VSD, i.e. TOF or PA/VSD), or via the upper extremity arteries (auxillary artery). A coronary wire is passed through the ductus and a stent is introduced over the wire (mostly coronary, sometimes small peripheral), and is expanded there. The life of stent varies; on average it is one year in our experience (a few months to 3 years). Except for the pulmonary end of the stent which needs removal for reconstruction of the central PA and LPA, the stent can be remained in the body and simply clamped to obstruct its flow.

PDA stenting is generally used for neonates with a weight more than 2.5 kg. The application of this procedure can be expanded beyond these limits. With special techniques, it is possible to perform PDA stenting in smaller neonates; instead of long term prostaglandin infusion to reach a higher weight. Although BT shunt has a lower mortality in older patients, PDA stenting can even be an interesting substitute. In our experience, PDA stenting can be successfully done until 2 years of age. In older patients, ductal tissue is stiff and hardly expands by balloon/stent.

Graft dysfunction after heart transplant

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Graft dysfunction can occur during intraoperative period or can occur days or weeks or years later. The time of graft dysfunction is one of the most important clues to find the possible cause. Graff dysfunction can be seen as heart failure with left ventricular systolic dysfunction or preserved systolic function. Left or right or both ventricles can be involved. Primary graft dysfunction usually occurs during 24hrs after transplantation. Myocardial injury caused by acute catecholamine toxicity and release of multiple proinflammatory mediators in the donor followed by ischemia reperfusion injury during retrieval are considered the predominant pathologic process leading to primary graft dysfunction. Cardiac allograft rejection usually occurs during the first year, especially during the 6 months after transplantation. Cardiac allograft vasculopathy can occur at any time and usually after 3-5 years past transplantation. Different aspects of graft dysfunctions will be discussed.

LM bifurcation stenting: Case Presentation

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Case presentation: A 66-year-old man presented in our center with acute at rest chest pain from 5 hours ago. The past medical history was positive for dyslipidemia and smoking. The electrocardiogram revealed diffused ST-segment depression in I, AVL, and V3-V6 and also, hyperacute T wave in V3-V5 leads. The echocardiogram showed LVEF: 30%, and inferior wall hypokinesia. The patient immediately transferred to catheterization lab with diagnosis of high-risk acute coronary syndrome. The angiogram showed totally thrombotic dominant LCX cut off at ostial part, also significant lesion at ostio-proximal part of LAD (Figure 1 left). After balloon dottrring, the stent (3.5*23 Xience Alpine) was insert in ostio-proximal of LCX. Several thrombosis was seen in OM branches (Figure 1 right). The patient underwent infusion of integrilin and then heparin therapy. Four days later, the patient underwent PCI LM to LAD by 4*32 Promus stent (Figure 2 left). The kissing ballooning and final POTS was done with good final result (Figure 2 right).

Figure 1. Left; The angiogram showed totally thrombotic dominant LCX cut off at ostial part, also significant lesion at ostio-proximal part of LAD. Right; After LCX stenting, several thrombosis was seen in OM branches.

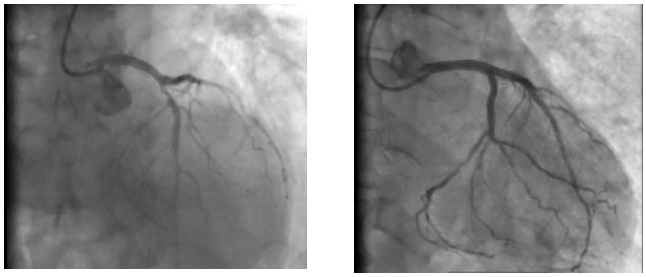

Figure 2. Left; Four days later, the angiogram showed acceptable LCX result with significant ostio-proximal of LAD. Right; the patient underwent PCI LM to LAD with good final result.

Complicated Percutaneous Closure of Ventricular Septal Defect; Two Case Reports

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We present Two case reports of complicated percutaneous closure of ventricular septal defects. Both of the patients were referred to our hospital with a diagnosis of ventricular septal defect (VSD). Comprehensive transthoracic echocardiography revealed aneurysmal VSDs with more than one hole in both of the cases. Catheterization confirmed the shunt from the LV to the RV and the aneurysmal morphology of both VSDs. We successfully closed both of the defects.
In Case I, we used no. 6 PmVSD Occlutech septal occluder via standard antegrade approach and then we occluded the residual VSD using no. (5x4) ADO II AGA occluder from retrograde Aortic approach successfully.
In case II we first used a no8, Occlutech PmVSD and a (10x6) Nit-Occlud® Lê VSD coil simultaneously but the patient experienced a homolysis event which was terminated abruptly after two days due to PmVSD occluder embolization. We could snare the enolized device and the residual defect was successfully closed by no (12x6) Nit-Occlud® Lê VSD coil.
Conclusion: This case reports revealed that percutaneous closure of VSDs is a feasible approach even for complicated cases but in experienced hands.
Keywords: complicated ventricular septal defects, Nit-Occlud® Lê VSD coil, PmVSD Occlutech septal occluder , Congenital heart disease, Transcatheter device closure, Device embolization

How to avoid and how to manage HLA incompatibility in heart transplantation (Importance of molecular epitope mismatching)

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The most common cause of death after heart transplantation is cardiovascular events and graft failure. There are conflicting reports on the effect of donor-recipient HLA matching on outcome in heart transplantation. Today, donor hearts are not selected on the basis of HLA matching, and HLA typing is mainly applied to determination of donor-specific antibodies in sensitized heart transplant recipients. Heart transplant candidates sensitized to HLA antigens wait longer for transplant, are at increased risk of dying while waiting, and may not be listed at all. Moreover in the case of HLA mismatch the chance for producing donor-specific antibodies after transplantation is dramatically will increase. Several studies have shown a positive effect of HLA matching on survival and avoiding the production of donor specific antibodies that are detrimental to the transplant. Anti-HLA antibodies recognize distinct expose regions of the HLA antigen which are named epitopes. Eplets are small configurations of polymorphic amino acid residues on human leukocyte antigen (HLA) molecules and are considered as essential components of HLA epitopes recognized by antibodies. A higher level of mismatched amino acids between antibody-verified HLA eplets of donor and recipient is independently associated with rejection and with worsened graft survival. Molecular-level HLA mismatch analysis could therefore serve as a tool for risk stratification after heart transplantation and might take us one step further into precision medicine.

Update on medical treatment of hypertension

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Most hypertensive patients require lifelong treatment to achieve target blood pressure. According to the current guidelines, four classes of antihypertensive agents are considered as the first-line therapy, including; 1) ACE inhibitors (ACE-I), 2) angiotensin receptor blockers (ARB), 3) calcium channel blockers (CCB), and 4) diuretics (thiazides and thiazide-like diuretics).

Initial combination therapy is invariably more effective at BP lowering than monotherapy, indeed even low-dose combination therapy is usually more effective than maximal dose monotherapy. On the other hand, non-adherence to antihypertensive drugs is a major concern in treating hypertensive patients. Considering the nature of single-dose prescription and low side effects induced with a lower dosage of each compound in combination pills (SCP), currently, these products are considered as the first-line choice antihypertensive therapy.

The initial choice is usually a combination of ACE-I or ARB+ CCB or diuretic. Elderly (≥80 years of age) or frail low-risk patients with grade 1 hypertension (especially with SBP values <150) are major exceptions for this strategy. In face of failure to achieve target BP with an optimal dose of these SCP`s, a triple combination including ACE-I or ARB+CCB+diuretic may be considered. Studies suggest that a three-drug combination should control BP in >80% of patients. The next step in possible uncontrolled hypertension is the addition of spironolactone 25–50 mg or eplerenone, another diuretic agent like amiloride, or higher doses of diuretics. If such a regimen could not be tolerated by the patient, a beta-blocker with combined alpha-blocker or vasodilator properties, or a centrally acting agent like clonidine may be considered.

Last trials for LM PCI, LM lesion Case

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Rajaee Hospital, Tehran, Iran

- Left Main disease pathophysiology
- Incidence, Prevalence
- LM revascularization
- LM PCI Trials
- LM PCI RCTs
- Case presentation (by: Dr. Firouzi)
- LM PCI approach

The role of intra-coronary Imaging during PCI

Metabolic Syndrome and Epigenetic Modification

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Metabolic syndrome (MetS) is a clustering of several cardiovascular risk factors and had positive effect on the mortality rate due to cardiovascular disease and diabetes. MetS consider as a polygenic traits with multifactorial etiology, involving gene-gene and gene-environment interactions and epigenetics. A growing body of evidence suggests that epigenetic modifications may significantly disrupt gene expression routes during the life course, thus affecting the molecular phenotype and function of involved cells. Alterations in epigenetic patterns, such as DNA methylation, which are modifiable, provide a potential mechanism through which MetS and other environmental factors may influence gene expression and ultimately increasing disease risk or mortality. Epigenetic changes are reversible and are closely interconnected. In recent years, epigenome-wide association studies have identified global and locus-specific epigenetic changes potentially involved in the pathophysiological mechanisms responsible for the development of MetS. An EWAS study in individuals with MetS demonstrated changes in methylation of CPT1A, ABCG1, LINE-1, TNF and etc.... are related to the MetS. Classical epigenetic mechanisms also involve post-translational modifications of histone proteins by specialized histone-modifying enzymes, resulting in changes to chromatin architecture and gene expression regulation. There are several post-translational modifications of histone proteins, with acetylation, phosphorylation, methylation and ubiquitination of histones being the most commonly related to the increase or decrease in gene expression. Alterations in histone modifications are identified as essential components of epigenetic networks, controlling energy homeostasis and altering adipocyte thermogenesis, thereby contributing to the pathogenesis of MetS. Histone modifications are also reported to interact with pathways related to the development of insulin resistance and inflammation, important hallmarks of MetS. Moreover, sirtuins (SIRT, a class of HDACs) are reported to act as metabolic regulators of glucose homeostasis and IR-associated inflammation. A lack of SIRT1-, SIRT2- and SIRT6-dependent deacetylation and activation of specific adipose gene programs have been shown to contribute to the development of MetS. Previous studies investigating the pathophysiology of MetS have revealed a complex network of reciprocal interconnections between those of miRNAs and the classic epigenetic machinery of DNA methylation and histone modifications. DNA methylation regulates miRNA transcription either by hyper- or hypo-methylation of the promoter regions of miRNA genes. Indeed, around 50% of the miRNAs are associated with CpG islands, and methylation of these sites on miRNA promoters can result in their modified expression. Several studies demonstrated the role of various miRNA in MetS. Thus further suggesting a role for histone modifications in the etiology of MetS.

In Cath-Lab strategies in patients presenting with NSTEMI

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Routine pre-treatment with a P2Y12 receptor inhibitor in NSTE-ACS patients in whom coronary anatomy is not known and an early invasive management is planned is not recommended given the lack of established benefit. However, it may be considered in selected cases and according to the bleeding risk of the patient.
An early routine invasive approach within 24 h of admission is recommended for NSTEMI based on hs-cTn measurements, GRACE risk score >140, and dynamic new, or presumably new, ST-segment changes as it improves major adverse cardiac events and possibly early survival. Immediate invasive angiography is required in highly unstable patients according to hemodynamic status, arrythmias, acute heart failure, or persistent chest pain. In all other clinical presentation, a selective invasive approach may be performed according to non-invasive testing or clinical risk assessment.
The principal technical aspects of PCI in NSTE-ACS patients do not differ from the invasive assessment and revascularization strategies for other manifestations of CAD.
Radial access is recommended as the preferred approach in NSTE-ACS patients undergoing invasive assessment with or without PCI. Multivessel disease is frequent in NSTE-ACS, timing and completeness of revascularization should be decided according to functional relevance of all stenoses, age, general patient condition, comorbidities, and left ventricular function.
In patients presenting with NSTE-ACS who are deemed eligible for PCI in one or more vessels, implantation of new-generation DES is the standard of care, while routine thrombectomy has not been proven beneficial in this setting, although not contraindicated and can be used as a bailout technique in special situations.
The currently available evidence, because of lack of randomized trials, indirectly suggests that the criteria applied in patients with stable CAD to guide the choice of revascularization modality (2018 ESC/EACTS Guidelines on myocardial revascularization) should also be applied to stabilized patients with NSTE-ACS, particularly for patients with diabetes.

Incidence of cancer in patients with metabolic syndrome

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مطالعات متعددی ارتباط سندرم متابولیک یا اجزای آن با افزایش سرطان و مرگ و میر ناشی از سرطان را نشان می دهد. پیشنهاد می شود که در ارتباط سندرم متابولیک و سرطان، مقاومت به انسولین و سیستم فاکتور رشد شبه انسولین ۱ نقش کلیدی ایفا می کنند همچنین عوامل دیگری از جمله چربی های ترشح شده از چربی های احشایی ، اسیدهای چرب آزاد و فعالیت آروماتاز در این فرایند نقش دارند. همچنین گزارش شده است که سندرم متابولیک با سرطان روده بزرگ، سینه، آندومتر، لوزالمعده، کبد و شاید با سرطان پروستات ارتباط دارد. اگرچه مشخص شده است که هر جزء از سندرم متابولیک با پیشرفت سرطان ارتباط دارد ، اما هنوز بحث بر سر این است که آیا اثرات این اجزا افزودنی است یا هم افزا.

از سوی دیگر ، در ارتباط بین سندرم متابولیک و سرطان ، نقش درمانهای ضد دیابت و ضد فشار خون از جمله تیازولیدیندیون ، انسولین، مسدود کننده های گیرنده آنژیوتانسین نیز بعنوان عوامل کاهنده سرطان مورد بررسی قرار گرفته است.

رویکرد اولیه در رابطه با سندرم متابولیک و سرطان جلوگیری از عوامل خطر است. تغییرات سبک زندگی شامل کاهش وزن و رژیم غذایی سالم خطر ابتلا به سرطان را در افراد عادی کاهش می دهد.

فرض بر این است که انسولین ومتفورمین ، دارای اثرات پیشگیری کننده از سرطان در بیماران دیابتی است.

این مطلب به بررسی رابطه بین سندرم متابولیک و سرطان از جنبه های مختلف می پردازد و این رابطه را در پیشنهاد می شود با سندرم متابولیک مرتبط باشند بررسی می کند اجزای آن با افزایش سرطان و مرگ و میر ناشی از سرطان را نشان می دهد. پیشنهاد می شود که در ارتباط سندرم متابولیک و سرطان ، مقاومت به انسولین و سیستم فاکتور رشد شبه انسولین ۱ نقش کلیدی ایفا می کنند همچنین عوامل دیگری از جمله چربی های ترشح شده از چربی های احشایی ، اسیدهای چرب آزاد و فعالیت آروماتاز در این فرایند نقش دارند. همچنین گزارش شده است که سندرم متابولیک با سرطان روده بزرگ، سینه ، آندومتر ، لوزالمعده، کبد و شاید با سرطان پروستات ارتباط دارد. اگرچه مشخص شده است که هر جزء از سندرم متابولیک با پیشرفت سرطان ارتباط دارد ، اما هنوز بحث بر سر این است که آیا اثرات این اجزا افزودنی است یا هم افزا. از سوی دیگر، در ارتباط بین سندرم متابولیک و سرطان ، نقش درمانهای ضد دیابت و ضد فشار خون از جمله تیازولیدیندیون، انسولین ، مسدود کننده های گیرنده آنژیوتانسین نیز بعنوان عوامل کاهنده سرطان مورد بررسی قرار گرفته است. رویکرد اولیه در رابطه با سندرم متابولیک و سرطان جلوگیری از عوامل خطر است. تغییرات سبک زندگی شامل کاهش وزن و رژیم غذایی سالم خطر ابتلا به سرطان را در افراد عادی کاهش می دهد.

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این مطلب به بررسی رابطه بین سندرم متابولیک و سرطان از جنبه های مختلف می پردازد و این رابطه را در پیشنهاد می شود با سندرم متابولیک مرتبط باشند بررسی می کند.

Pulmonary Arteries Stenting in Patients with Native and Post-Operative PPS

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Transcatheter therapy of all varieties of branch pulmonary artery stenoses is one of the most common procedure that performed but also often one of the most challenging congenital transcatheter interventions. Interventional techniques include either Cutting balloon angioplasty, Endovascular stent placement, or a combination of these interventions., standard balloon angioplasty alone usually has poor results and a high recurrence rate. As such it is often utilized as a temporizing treatment in patients who require transcatheter intervention, but where the vessel size is too small to utilize a stent that can be expanded to adult size.

Frequently, pulmonary artery rehabilitation is a staged procedure, where reinterventions are not necessarily a sign of procedural failure, but more importantly reflect frequent early reinterventions to achieve optimum pulmonary growth. The indication for taking a patient to the catheterization laboratory for potential pulmonary artery rehabilitation is usually based on echocardiographic evidence of either increased right ventricular pressures, or gradients through main pulmonary artery and CT Imaging as a accurate imaging modality.

RV-PA conduit, or branch pulmonary arteries A baseline hemodynamic and angiographic evaluation is important, as it serves later as a comparison to determine the procedural outcome and success. For smaller vessels, a pressure wire may be beneficial to obtain a more accurate gradient by avoiding catheter-induced damping. Pulmonary artery rehabilitation requires a high amount of technical expertise and is not without risks. Independent risk factors for high severity adverse events were age below 1 month, two or more indicators of hemodynamic vulnerability, use of cutting balloons, as well as operator experience of less than 10 years. The use of cutting balloons likely reflected the severity of the underlying lesions, rather than cutting balloons themselves being a risk factor for adverse events.

The study also found that technical complications such as stent migration were more common for proximal pulmonary artery lesions. Reperfusion injuries as manifested through bleeding from the endotracheal tube were more common for lobar or mixed lesions. Acute changes in distal PA pressures of more than 150% and a mean distal PA pressure of more than 20 mm Hg have been found to be risk factors for reperfusion injury.

Infarct related artery dilemma

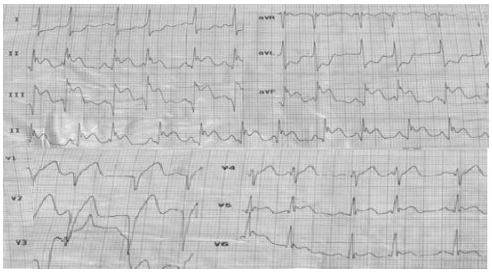
Azadeh Mozayanimonfared

Case report: A 44-year-old man was admitted to Farshchian Heart Center emergency room with the chief complaint of severe typical chest pain, which started two hours earlier. His only cardiovascular risk factor was smoking (2packs/ day for 15 years). At the time of admission, his heart rate and blood pressure were 56/min and 110/60, respectively. As you can see in figure 1, ST elevation was seen in most leads (II,III, avF, V1-V6 and ST depression in I and avL) and just in some beats 2:1 AV block was detected. A quick echocardiography revealed that reduced LV function (LVEF: 20-25%) with global hypokinesis and no significant regional wall motion abnormality. He was candidate for primary percutaneous coronary intervention (PCI) and transfer to cardiac catheterization laboratory within 30 minutes.325 mg ASA and 180 mg Ticagrelor were administered. According to patient condition and possible need for temporary pacemaker during the procedure, femoral approach was chosen. Emergent Coronary angiography showed total occlusive thrombotic stenosis in proximal part of RCA and LCX (figure 2&3) and partial occlusive clot in proximal part of LAD with TIMI flow 2 (figure 4). Now the question arises "which vessel is the culprit "or "which vessel should be revascularized at first. It could not be understanding by ECG and Echocardiography. According to the lesion appearance and the importance of LAD in myocardial perfusion, we decided to perform angioplasty on LAD at first, after wiring of LAD, PCI was performed with Supraflex stent 3.5*36. As you can see in figure 5, TIMI flow 3 was achieved. After LAD angioplasty, his chest pain was continued and 2:1 AV block was appeared in all beats. His blood pressure was 100/60 mm Hg. So we decided to try to wire the LCX, the wire was passed through the total cut stenosis easily and after that PCI on LCX was performed with Xience Alpine stent 3*28. The result was showed in figure 6. Due to continued chest pain and AV block and ST elevation in inferior leads, we decided to have angioplasty on RCA. Immediately after wire was passed through the stump of RCA lesion, TIMI flow 3 was achieved and a significant diffused stenosis was appeared in proximal to mid-part of RCA and mild distal thrombus embolization was occurred in PDA branch. PCI was performed with Supraflex stent 3.5*32 with good final result (figure 7). As soon as RCA angioplasty was accomplished, his chest pain and ECG changes were resolved. He transferred to CCU. Integrilin infusion for 18 hours, ASA 80 mg/daily, Ticagrelor 90 mg/BD, Atorvastatin 40 mg/BD were prescribed. During hospitalization, he experienced resistant frequent sustain Ventricular Tachyarrhythmia which was managed with amiodarone and lidocaine infusion. He was discharged on the 7th day of admission

Discussion: Acute thrombotic occlusion of more than one major coronary arteries is very rare (2.5%) in STEMI –suffering patients. Approximately one third of the patients present with cardiogenic shock, and nearly a fourth of them have life-threatening ventricular arrhythmia.Prediction of culprit lesion in STEMI patients mostly achieved

with 12 leads ECG and observation of regional wall motion abnormality at rest in echocardiography, but when multivessel thrombotic involvement was occurred, this prediction become difficult and the decision about which coronary artery should be considered as culprit was individualized.

Figure 1Figure 2



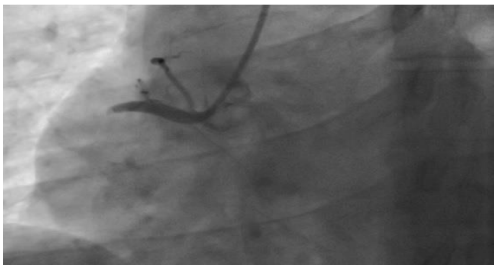
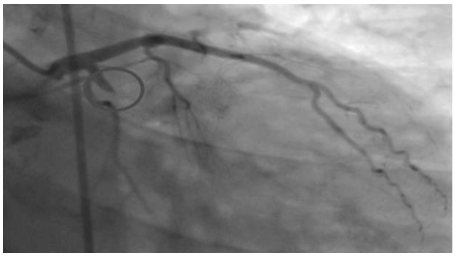


Figure 3 Figure 4



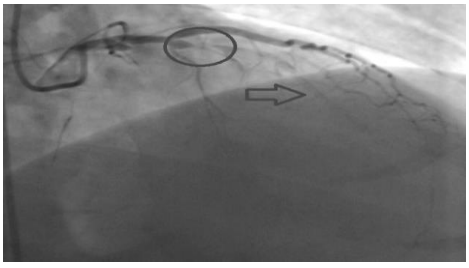
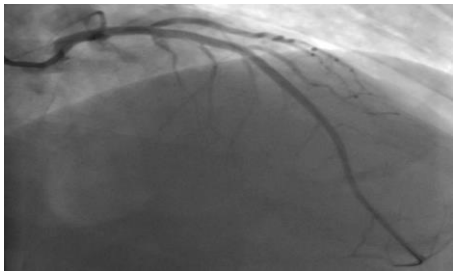
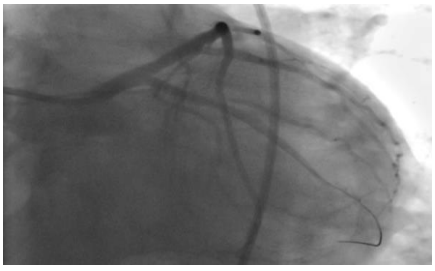


Figure 5Figure 6





Biologic valve thrombosis

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Bioprosthetic valve thrombosis may occur years after valve replacement; therefore, any deterioration in a patient's clinical status (new-onset dyspnea, heart failure or atrial fibrillation) warrants a thorough evaluation of the bioprosthetic valve with transesophageal echocardiography. Therefore initiation of anticoagulation obviates the need for redo valve replacement .

Nutrition in Diabetic Patients with Cardiovascular Diseases

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The prevalence of type 2 diabetes mellitus (T2DM) is growing exponentially worldwide and is known as the third highest risk factor for worldwide premature mortality, co-morbidity, and increased healthcare costs. As compared to non-diabetics, those with T2DM carry a higher risk of cardiovascular disease (CVD). Unhealthy behaviors, including inappropriate diet and low physical activity, coupled with genetic predisposition, drive T2DM occurrence and severity, following that CVD.
Diet is known as an important modifiable risk factor for both T2DM and CVD, and in this regard, evidences showed that calorie restriction, weight reduction >5%, fat intake <30% of total energy intake, saturated fat intake <10% of total energy intake, and dietary fiber intake ≥15 g/1000 kcal contributes to T2DM and CVD remission. Also, mounting clinical evidence demonstrates that T2DM and its related complications can be prevented or delayed in high risk individuals through following Mediterranean Diet (MD). The health protective benefits of MD is attributed to components such as fruits, vegetables, olive oil, and tree nuts. Moreover, up-to-date evidences has revealed that intestinal microbiota is closely associated with the pathogenesis of T2DM, initiation and progression of CVD. Several natural products possessing prebiotic effects like medicinal plants, vegetables, and fruits, have been found to ameliorate T2DM and CVD by modulating gut microbiota composition. Furthermore, at least moderate intensity exercise for >4 hours weekly have been found to ameliorate T2DM and improve cardiovascular function.
Since T2DM and CVD share a number of common risk factors that tent to cluster together in the same individual, all aspects of lifestyle especially diet need to be considered carefully.

Management of patients with Non-ST-Segment Elevation Acute Coronary Syndromes in COVID era. (Based on ESC Guidance for the Diagnosis and Management of CV Disease during the COVID-19 Pandemic)

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The coronavirus pandemic (COVID-19) has had unprecedented impact on healthcare systems, including acute cardiology services.
Severe COVID-19 infection is associated with myocardial damage and cardiac arrhythmia COVID-19 directly leads to cardiac complications in those patients with underlying heart disease or cardiac risk factors.
In each institution, an explicit diagnostic algorithm for suspected COVID-19 infection is important to inform triage. Patients with possible/probable or confirmed COVID-19 infection should be triaged as COVID-19 infected
The high priority given to patients with COVID-19 infection may compromise the rapid triage of non-COVID-19 patients with CVD.
A proper patient triage favours the right in-hospital allocation based on the infective status and allows the prompt adoption of protective measures both by HCP and by patients.
Initial symptoms of a COVID-19 infection such as breathlessness, chest pain, or asthenia may mimic the early manifestations of a cardiac disease and therefore require a tight collaboration of different professionals and specialists, in order to assign any single patient to the correct diagnostic work up process as soon as possible. Also, COVID-19 patients might abruptly develop acute cardiac complications (such as ACS or pulmonary embolism [PE]) and come to the hospital for this reason.
In particular, critically ill patients for acute CV condition (STEMI patients, out-of-hospital cardiac arrest patients), should quickly access medical or interventional treatment according to the current evidence-based guideline recommendations. Therefore, they should be presumed as SARS-CoV-2 positive, until proven otherwise. Accordingly, HCP should wear adequate PPE, particularly in the triage phase. Recommendations made by the WHO.
Physicians should triage cardiac patients requiring a highly intensive level of care who have a concomitant suspected or confirmed COVID-19 infection based on local protocols that take into consideration ethical issues and resource availability.
Management of patients with NSTE ACS should be guided by risk stratification.
Testing for SARS-CoV-2 should be performed as soon as possible following first medical contact, irrespective of treatment strategy, in order to allow HCP to implement adequate protective measures and management pathways. Patients should be categorized into 4 risk groups (i.e. very high risk, high risk, intermediate risk, and low risk) and managed accordingly.

Patients with Troponin rise and no acute clinical signs of instability (ECG changes, recurrence of pain) might be managed with a primarily conservative approach. Non-invasive imaging using CCTA may speed-up risk stratification, avoid an invasive approach allowing early discharge.

For patients at high risk, medical strategy aims at stabilization whilst planning an early (< 24 hours) invasive strategy. The time of the invasive strategy may however be longer than 24 hours according to the timing of testing results. If feasible, a dedicated area to manage these patients while waiting for the test result should be arranged in the emergency department. In the case of positive SARSCoV-2 test, patients should be transferred for invasive management to a COVID-19 hospital equipped to manage COVID-19-positive patients.

Patients at intermediate risk should be carefully evaluated taking into consideration alternative diagnoses to Type1 MI, such as Type II MI, myocarditis, or myocardial injury due to respiratory distress or multi-organ failure or Takotsubo. In the event any of the differential diagnoses seem plausible, a noninvasive strategy should be considered and CCTA should be favored, if equipment and expertise are available.

When there is a positive SARS-CoV-2 test, patients should be transferred for invasive management to a COVID-19 hospital equipped to manage COVID-19-positive patients.

At times of high demand on the infrastructure and reduced availability of catheterization laboratories or operators, non-invasive conservative management might be considered with early discharge from the hospital and planned clinical follow-up.

Ticagrelor Consideration in Acute Coronary Syndrome

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Introduction: Dual antiplatelet therapy is the mainstay therapeutic strategy in patients with acute ST-segment elevation myocardial infarction (STEMI) [1]. In setting of acute STEMI, The preferred P2Y12 inhibitors is Ticagrelor (180 mg oral loading dose and 90 mg maintenance dose twice daily) [2] . Ticagrelor on top of aspirin is recommended in patients with ACS, irrespective of initial treatment strategy, including patients pre-treated with clopidogrel (which should be discontinued when ticagrelor is commenced) unless there are contraindications [2, 3].

Pharmacology: Ticagrelor is a novel chemical class, and is a direct oral, reversibly binding P2Y12 inhibitor cyclopentyl triazolopyrimidine, with a plasma half-life of ~ 12 h[3]. It's Bioavailability is 36%. Peak Plasma Time is 1.5 hour (2.5 hour for active metabolite) with a Protein Bounding more than >99% (including active metabolite) [4].

Dosing & Uses: Recommended Loading dose after ACS event is 180 mg oral (two 90-mg tablets), and maintenance dose for first year after ACS event is 90 mg BID. Suggested maintenance dose after first year of maintenance is 60 mg BID[2, 3].

Administration: If one dose is missed, the patient must take one tablet (their next dose) at its scheduled time. For patients who are unable to swallow the Ticagrelor tablets, it can be crushed. The crushed tablets, then mixed in water, given orally or administered through a nasogastric tube into the stomach.It is important to flush the nasogastric tube through with water after administration of the mixture

Warnings : Ticagrelor can cause significant, sometimes fatal, bleeding, like other antiplatelet agents, therefore it shouldn't be used in active pathological bleeding or a history of intracranial hemorrhage (ICH). It shouldn't start in patients planned to undergo urgent coronary artery bypass graft surgery (CABG); when possible, discontinue at least 5 days prior to any surgery

Contraindications: As mentioned above , History of ICH ,Hypersensitivity (eg, angioedema) and active pathologic bleeding (eg, peptic ulcer,) are contraindication for use of Ticagrelor.

Cautions : De-escalation from ticagrelor to clopidogrel therapy is associated with an increase in platelet reactivity. Strong and more studies are necessary to better assess the efficacy and safety of a de-escalation strategy, including role of guidance by platelet function or genetic testing also the impact of timing.

Aspirin maintenance doses >100 mg decrease ticagrelor effectiveness; therefore, after initial aspirin loading dose (usually 325 mg), use Ticagrelor with aspirin maintenance dose of 75-100 mg/day[2-4].

Summary : Finally, STEMI patients undergoing primary PCI should receive aspirin and aP2Y12 receptor inhibitor as soon as the diagnosis of STEMI is established. In line

with the treatment recommendations for NSTE-ACS patients, DAPT is the cornerstone of treatment for STEMI patients which includes aspirin and a potent P2Y12 receptor inhibitor[5].
In patients with ACS who were previously taking clopidogrel, switching from clopidogrel to ticagrelor is recommended early after hospital admission at a loading dose of 180mg regardless of timing and loading dose of clopidogrel, unless contraindications to ticagrelor exist.

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Prevention and management of peri-procedural complications of ASD closure by device

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Atrial septal defect (ASD) is one of the most common congenital heart diseases (CHDs) and accounts for the most common CHD in adults. Techniques and devices for transcatheter treatment have been evolved and refined; as a result, device closure of ASD is currently accepted as the treatment of choice in most patients with secundum ASD, showing excellent efficacy as well as lower complication rate comparing to surgery.

Extensive experiences have verified safety and usefulness of the procedure, and established general principle for device closure of ASD including patient selection, peri-procedural assessment as well as procedural technique with various measures to prevent potential complications. However, unanticipated difficulties and un-negligible risks may be encountered during this “usually straightforward” procedure, and every effort has to be made to promote the efficacy and safety of the procedure on the basis of accurate knowledge for procedural principles, solutions for specific problems as well as characteristic features of available devices.

Primary Mitral regurgitation

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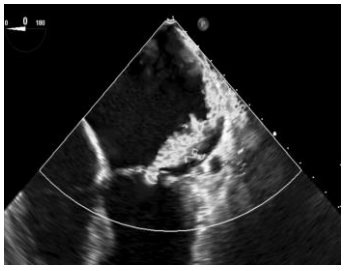
There are several important points in correct evaluation and management of primary mitral regurgitation(MR), First of all reliable assessment of MR severity, which is a challenging matter,
Color flow imaging is the most common way to assess MR severity. The general assumption is that as the severity of the MR increases, the size and the extent of the jet into the LA also increase, but indeed in many situation color Doppler study misleads operators, in terms of overestimation or underestimation of MR severity.
An important example is eccentric MR which is highly underestimated, Coanda effect is a phenomenon that explains how we could have misled by color Doppler imaging. Based on this aerodynamic rule a thin liquid jet, passing through a narrow channel which is followed by a curved surface, deviates according to the surface' shape, adhering to it. So in eccentric MR trans thoracic echocardiography is not adequate to make a reliable decision and trans esophageal echocardiography needs to confirm echo findings .

Another important point that will be discussed , is accompany of MR with coronary artery disease ,in patient who is scheduled for CABG.
Based on guidelines , concomitant mitral valve surgery is indicated in patient with chronic severe primary MR and with less potent advise in patient with moderate primary MR ,undergoing cardiac surgery.
Keywords: Primary MR, Coanda effect ,Eccentric MR



Implanting pacemaker in MVR+TVR+AVR patient

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65 years old lady with frequent episodes of Syncopal attack since 1 mounts ago.
She had History of MVR, AVR and TVR and epicardial ppm implantion due to CHB.
In ppm analysis: The capture threshold was 7.5 mv with pw 1.5 and the patient was completely pace-maker dependent.
She had pervious history of twice epicardial lead repositioning.
The only way for salvaging the patient, was coronary sinus lead implantion with high risk for catheter entrapment in prosthetic TV.
From subclavian approach with CS delivery system, CS catheter introduced to coronary sinus and CS lead insented in CS Branch with good sensing and capture threshold of 0.75 mv (pw: 0.4).
Due to Risk of CS Lead Dislodgment and cardiac arrest, old ppm was set as VVI: 40, output: 7.5 and pw: 1.5.

Latest Guideline of STEMI, Novel Idea

Behshad Naghshtabrizi

It seems that one of the main issues that has received special attention in recent years is the duration and type of DAPT after PCI including PPCI. As it turns out, the duration and type of medications depends on the risk of bleeding and ischemia.

Recent studies have attempted to shorten the course of DAPT after PPCI. STOPDAPT-2ACS trial showed that one month DAPT and subsequent Clopidogrel mono therapy failed to achieve non inferiority for net clinical benefit compared with standard 12 month DAPT after ACS who underwent PCI(56% of the enrolled patients had STEMI).

On the other hand, TICO-STEMI study showed that in the STEMI patients, DAPT, which includes Aspirin and Ticagrelor continued for three months and then only Ticagrelor continued for 12 months, causing the risk of bleeding to be significantly reduced without the risk of ischemic events raise.

According to the latest ESC STEMI guideline, the P2Y12 inhibitor which used in fibrinolytic therapy is Clopidogrel and if the physician wants to change it to a potent antiplatelet it must be happened after 48 hours.

Based on the findings of the TREAT trial, which change Clopidogrel to Ticagrelor less than 24 hours after fibrinolytics, it was concluded that this change did not reduce major cardiovascular events compared to those who continued Clopidogrel even though without increasing the risk of bleeding. Finally when TREAT and PLATO are combined in a pooled analysis, results suggest a reduction of major cardiovascular events with no statistical heterogeneity evident between results.

The next point that needs to be considered is percutaneous myocardial revascularization in late presenting patients with STEMI. FAST-MI trials showed latecomers who revascularized within 48 hours after hospital admission had better outcomes than non revascularized ones.

Double CTO in a Post CABG patient

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A post CABG 47-year-old gentleman with strong family history of IHD presented with refractory angina pectoris.
Angiography revealed SVG on RCA occluded while native vessels (RCA & LCX) as CTO. The SVG on OM was extremely degenerated & LIMA patent
Three years ago an intervention for CTO RCA had failed and as a palliative procedure a large septal that was retrogradely filling the native RCA was stented which had caused his symptoms to decrease. A year later ISR in this stent had caused aggravation of symptoms again, this time POBA with DCB caused a decrease in symptoms. Next year a new attempt was done to open the RCA CTO.
With dual injections through the native LAD the RCA CTO was revascularised & a few months later the degenerated SVG on OM was used as a retrograde conduit to open the CTO LCX with final POT of LM. So at the final stage native RCA & LCX were opened & with a healthy LIMA the patient has started jogging exercises!

Review of new ESC heart failure guidelines

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Heart failure is the leading cause of hospitalization in patients over 65 years of age.
The new ESC heart failure guidelines have been published recently and presented in the European society of cardiology congress.
During this presentation, it is not possible to have a deep dive into the whole guidelines but I will try to describe new changes which have been appeared in the new guidelines.
There is minor changes in the definition and classification of heart failure syndrome which will be discussed.
Regarding diagnosis and diagnostic tools, there are some changes in the recommendations for the right heart catheterization and invasive coronary angiography.
Many investigations have been done in the treatment of chronic heart failure and made the established foundation of heart failure therapy: (4 Pillars of HF treatment)
In these guidelines, there isn't much change in the treatment of CHF but a new type of drug has gained a class I recommendation; SGLT2is.
In the case of device management for heart failure, there are some alterations in the class of recommendations.
Finally, this guideline has variable flowcharts and algorithms for different clinical aspects of heart failure treatment.

A YOUNG BOY IN ELICITED STORM

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Electrical storm can be caused by structural heart diseases and/or functional electrical abnormalities. We report a young boy without cardiac risk factors, having positive family history of sudden cardiac death who presented with electrical storm. Stepwise diagnostic approach was not fruitful to determine previously known causes as the origin of the electrical storm. A novel genotype, which we recommend to be named 'BEMAN syndrome', has been discovered for the current electrical storm, and intracardiac pacing ceased it.

Poster Presentations

13th Middle East Cardiovascular Congress
6th Congress of Clinical Cases in Complex Cardiovascular Therapeutics

Ten-year ASCVD (Atherosclerosis Cardiovascular Disease) risk score and its components among Shiraz university employees: A cohort based cross sectional study

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Aims: Atherosclerotic cardiovascular disease (ASCVD) remains the leading cause of mortality worldwide. The aim of this study was to identify the individuals at higher risk of ASCVD among Shiraz university employees to guide decision making for primary prevention of ASCVDS in this population.

Methods: This cohort based cross-sectional study was conducted on data of 1191 participants (25-70 years old) from Shiraz University employees, selected by systematic random sampling. The 10-year ASCVD risk was defined by means of ASCVD risk score estimator developed by American College of Cardiology/American Heart Association (ACC/AHA).

Results: This study demonstrated that 75.3% of participants had low risk score whereas 13.2% and 2.5% had intermediate and high risk scores, respectively. Also, it clarified that, 93.7%, 2.7% and 0.6% of females had low, intermediate and high risk score, respectively. However, among male participants, the risk score was 61.5%, 21.1%, and %3.9 respectively. The mean of ASCVD score was significantly higher in men compared with women ($P<0.001$). Interestingly, ASCVD score of the participants of this study was significantly ($P<0.001$) lower than scores obtained from participants in Shiraz cohort heart study (SCHS)

Conclusion: Our data revealed that nearly 15.7% of participants are at intermediate and high risk of developing ASCVD in the next 10 years. Therefore, to address the primary prevention of ASCVD in this population it is necessary to target interventions that can be effective in modifying their risk factors. Furthermore, men are at greater risk for ASCVD than women; this major issue should be considered in preventive strategies.

Key words: Atherosclerotic cardiovascular disease, Gender, Age, Risk score

MACE free Survival after Percutaneous Coronary Intervention with Drug-Eluting Stent Implantation versus Coronary Artery Bypass Grafting for Treatment of Multivessel Coronary Artery Disease in Moderate Chronic Kidney Disease

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Background: Chronic kidney disease (CKD) is a strong predictor of mortality after percutaneous coronary intervention (PCI) or coronary artery bypass grafting (CABG), but currently there is limited data about the optimal revascularization strategy in this context.
Methods: This retrospective study was done during January 2005 to December 2018, in which a consecutive series of 2727 patients with CKD undergoing revascularization for coronary artery disease (CAD) were matched for selection criteria. CKD was defined as estimated glomerular filtration rate (eGFR) <60 mL/min/1.73m^2). The primary end-point was defined as MACE which included all-cause death, nonfatal myocardial infarction (MI), cerebrovascular events (CVE) or any coronary revascularization.
Results: Of 2727 patients, 943 underwent PCI and 1784 underwent CABG. Of them 899(33%) were treated for 2-vessel disease (575, 60.8% PCI and 324, 18.2% CABG) and 1822 (66.8%) for 3-vessel disease (370, 39.1% PCI and 1452, 81.5% CABG). There was no significant difference between the 2 treatment groups in the frequency of the individual outcomes of death and nonfatal MI after 18 months follow up, but cumulative incidence of any coronary revascularization after PCI were significantly higher than those after CABG (P=0.31, 0.98, and <0.001, respectively). Furthermore, in the CABG group the rate of CVE was significantly higher than the PCI group (P=0.002). After multivariate adjustment, revascularization strategy was not an independent predictor of the composite end point of death, nonfatal MI, CVE, or any coronary revascularization (HR=1.09, P=0.5).
Conclusion: Compared with DES-PCI, CABG showed a similar MACE free survival in patients with CKD and multivessel CAD, but was associated with decreased rates of repeat revascularization.
Key words: Coronary artery disease, Coronary artery bypass grafting, Drug-eluting stent (DES), Chronic kidney disease, Survival.

Perceive d benefits of the disease: A qualitative study of patients' experiences of heart failure

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Abstract: Heart failure may bring about positive outcomes, which have not been adequately addressed in the literature. Therefore, this qualitative study sought to scrutinize the experiences of patients and the perceived positive effects of heart failure. The opinions of 19 patients with heart failure in Mashhad city (Iran) were collected via semistructured interviews from December 2017 to November 2018. After analyzing the data, six themes were identified by framework analysis: healthy lifestyle, effective interactions, appreciation of life, spirituality, reappraisal of life and priorities, and endurance. Such positive effects may lead to empowerment and better coping of patients with the disease. Therefore, nurses should consider the patients' perception of illness in addition to the disease manifestations and offer training focusing on the possibilities instead of limitations.
Key words: cardiovascular nursing, heart failure, Iran, qualitative study.

Dark or Bright Half of the Moon: A Qualitative Study Exploring the Experience of Iranian Heart Failure Patients Regarding their Quality of Life

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Background: Heart failure (HF) is a major public health problem in different societies and has numerous impacts on quality of life (QOL).
Aim: The present study was carried out with the aim to explore the experience of HF patients regarding the negative effects of the disease on their QOL.
Methods: In this qualitative exploratory study data collection was performed through face-to-face, semi structured, in-depth interviews with 19 patients with HF, who were selected through purposive sampling method from April to September 2017. Data analysis was carried out based on the framework analysis method.
Results: The negative consequences of HF on QOL emerged in the form of 6 main themes including symptoms, disease complications, cognitive impairment, psychological distress, functional limitations and economic problems. Most of the participants (14 out of 19) assessed their QOL as well or very well.
Conclusions: The majority of the patients in this study, despite the many negative impacts of HF, had a high QOL that could indicate their satisfaction and effective coping with HF by creating a positive outlook and the perceived positive effects of the disease.
Key words: cardiovascular nursing, heart failure, Iran, qualitative study

The content comparison of health-related quality of life measures in heart failure based on the international classification of functioning, disability, and health: a systematic review

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Introduction: Due to the necessity of assessing the health-related quality of life (HRQOL) in heart failure (HF) and the increased use of the International Classifiation of Functioning, Disability, and Health (ICF) for making a content comparison of measurement instruments, the present study aimed to evaluate the relationship between the instruments and ICF. To this aim, the disease-specifi HRQOL instruments in HF were identifid, and then psychometric properties and content comparison of included instruments were conducted by linking to ICF.
Methods: Disease-specifi HRQOL instruments in HF were identifid through a comprehensive and systematic search strategy. Thn, the psychometric properties of included instruments were determined, and their contents were analyzed and compared based on the ICF coding system. In addition, each instrument was independently linked to ICF by two researchers based on standardized linking rules, and fially their degree of agreement was assessed by the Cohen's kappa coeffient.
Results: Ten instruments including a total of 247 items and 417 concepts were linked to 124 different ICF categories. Further, 39 (31.5%), 65 (52.5%), 13 (10.4%), and 7 (5.6%) categories were linked to body function, activity and participation, environmental factors, and body structure, respectively. According to the content analysis approach and psychometric properties, the appropriate measurement instruments were Kansas City Cardiomyopathy and Minnesota living with HF questionnaires, respectively. Conclusion: Content comparison provides researchers with valuable information on the instrument heterogeneity and overlapping, which results in selecting the most appropriate measurement instrument based on a specifi clinical context.
Key words: Quality of Life. Health Status, Heart Failure, Content Analysis, Systematic Review

Evaluation of sleep quality in the older adults with heart failure

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Background and Aim: Disturbances in either the qualitative and quantitative aspects of sleep are common in patients with heart failure. Sleep quality refers to how well you sleep. This study aimed to determine the quality of sleep in patients with heart failure.
Methods: This cross-sectional study was performed on 445 patients with heart failure referred to the Heart Failure Clinic of Tehran Heart Center. Characteristics of study participants included age over 60 years and diagnosis of heart failure. Simple randomized sampling method was performed by using a table of random numbers. The Demographic information and Pittsburgh Sleep Quality Index (PSQI) were used to collect data. A total score above 5 on the entire Pittsburgh questionnaire means poor sleep quality. Data analysis was performed using SPSS 19 software.
Results: The majority of study participants were in the age range of 60-93 years, male (229 people), class I & II heart failure (288 people), ejection fraction of 35-40% (230 people), and had a polypharmacy regime (177 people). Patients with heart failure had good sleep quality (55.3%), moderate sleep quality (20.7%), and poor sleep quality (16.9%).
Discussion and Conclusion: In the present study, the sleep quality of patients with heart failure was moderate to high. Results obtained may be related to reasons such as the level of heart failure class of participants (more I & II), good adherence to treatment, adequate patient education, and being treated in a center with excellent educational facilities in the metropolis of Tehran.
Keywords: Sleep, Heart Failure, Older Adult

A primary prevention trial of coronary artery disease risk factors modification implementing current evidence based guidelines

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Background and purpose: Primary prevention of coronary artery diseases (CAD) through modification of CAD risk factors outweigh secondary prevention in reduction of CAD burden. Primary prevention guidelines need to be tested at individual level to boost the implications of these tools.
Methods: A clinical trial allocated 322 participants into interventions according to ACC/AHA 2013 guideline. Baseline Reynolds risk score (RRS) allocated study population into low risk RRS≤ 7.5 and high risk group RRS>7.5. Interventions were consisted of life style intervention for low risk arm. High risk group received life style interventions associated with statin therapy for individuals with elevated Hs-CRP and LDL-C. Outcomes were evaluated and compared by repeated measurement analysis.
Results: Life style interventions and medication have significantly decreased total cholesterol, triglyceride, fasting blood sugar, LDL-C, and systolic blood pressure $p<0.001$. RRSs have been attenuated significantly after six ($p=0.001$) and ten ($p=0.001$) months. RRSs after ten months of follow up decreased 16.8% in high risk group and 81.4% in low risk group from base RR= 15.71 (95% CI 18.03-30.74).
Conclusions: Total cholesterol, triglyceride, fasting blood sugar, LDL-C, systolic blood pressure and RRS have significantly decreased in both arms after six and ten months of intervention based on ACC/AHA 2013.

Learning needs in patients with heart failure and its related factors

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Background and Aim: Given the extensiveness of education needed, it is crucial to prioritize education content delivery to incorporate the perceived learning needs of patients with heart failure. Therefore, the present study was conducted to determine the learning needs of patients with heart failure and related factors.
Methods: This cross-sectional study was performed on 25 patients in Ayatollah Mousavi Hospital in Zanjan. The characteristics of the participants in the study were the diagnosis of heart failure, age over 18 years and having at least one history of hospitalization. Sampling was done by Convenience method. The CHFPLNI questionnaire in seven dimensions (anatomy and physiology, psychological factors, risk factors, medication information, diet information, physical activity, and other information) was used to collect data. Data analysis was performed using SPSS 19 software.
Results: The majority of participants in the study were male (72%), with a mean age of 63.28 years, primary education (44%), class III of heart failure (68%), ejection fraction (25.6±9.16) percent, and duration of disease (5.08±5.49) years. From the patients' perspective, learning needs were prioritized, respectively, medication information, diet information, risk factors, physical activity, psychological factors, anatomy and physiology, and other information. Among the demographic variables, only gender and heart failure class had a statistically significant relationship with learning needs in the diet information dimension ($P < 0.05$).
Conclusion: Considering the importance of evidence-based care for nurses, it is necessary to pay attention to learning priorities from the perspective of patients with heart failure in designing and implementing educational interventions.
Keywords: Learning Need, Heart Failure, Education

Investigate Physicians' Awareness about Newborn Pulse Oximetry Screening for Early Detection of Congenital Heart Disease

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Background: Congenital heart diseases (CHDs) are the most common type of birth defect. Success in the early detection of critical congenital heart diseases (CCHD) using pulse oximetry technology depends to a large extent on physicians' awareness of neonatal clinical examinations. The aim of this study was to investigate physicians' awareness of newborn pulse oximetry screening for early detection of CCHD in Isfahan.

Methods: A total of 65 physicians participating in the meeting at the continuing education programs at Isfahan University of Medical Sciences were enrolled in this descriptive-analytical, cross sectional study in 2019-2020. Data were collected by a questionnaire, developed by the researchers, whose validity and reliability were confirmed. Data analysis was conducted in SPSS software version 25.

Finding: In general, physicians that participated to this study were pediatricians (78.5%). The most physicians (49.2%) had a moderate level of awareness of neonatal screening at birth by pulse oximetry. The results of linear regression analysis showed that only the doctors' workplace (Hospital or office) was significantly associated with their awareness of neonatal screening at birth by pulse oximetry. ($P = 0.01$, $\beta = -0.31$). In total, 7% of the variations in physicians' awareness about neonatal screening at birth by pulse oximetry were predicted by this variable.

Conclusion: Physicians particularly pediatricians, as the first line of health care providers to the newborns at birth, need more knowledge about the neonatal pulse oximetry screening, for early detection and referral neonatal with congenital heart disease.

Keywords: Awareness, Early Diagnosis, Oximetry, Heart Defects, Congenital

Determination of preventive behaviors for COVID-19 based on protection motivation theory among children with congenital heart disease in Isfahan, Iran

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Objective: Congenital heart disease (CHD) is one of the underlying diseases that put children at increased risk for coronavirus. This study was conducted to predict preventive behaviors of COVID-19 among children with congenital heart disease based on the Protection Motivation Theory (PMT).

Methods: This cross-sectional, descriptive-analytical study was conducted on 240 children with congenital heart disease (aged between 3 to 7 years) in Isfahan, Iran, using simple randomized sampling. The research variables were measured using an online researcher-made questionnaire that was based on the Protection Motivation Theory constructs. The collected data were analyzed using SPSS software.

Results: From a total of 240 participants in the present study with the mean age of 4.81±1.50, 122 participants (50.8%) were girls. The most common types of congenital heart disease among children participating in this study were related to autism spectrum disorder (ASD) (29.2%, n=70) and ventricular septal defect (VSD) (26.7%, n=64), respectively. Protective behaviors showed a significant correlation with all constructs of the theory. Protection Motivation Theory constructs explained 41.0 % of the variances in protective behavior, in which the Perceived reward was the most important (β=0.325).

CONCLUSIONS: The results of this study show well the effectiveness of Protection Motivation Theory on the preventive behaviors of COVID -19 in children with congenital heart disease. This theory can be used to teach preventive behaviors of COVID-19 to children with congenital heart disease in education programs.

Keywords: Behavior, COVID-19, Children, Heart Defects, Congenital, Iran

Colchicine effectively attenuates inflammatory biomarker high-sensitivity C-reactive protein (hs-CRP) in patients with Non-ST-segment elevation myocardial infarction: A randomised, double-blind, placebo-controlled clinical trial

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Myocardial infarction without ST-segment elevation (NSTEMI) is considered an inflammatory disorder associated with a high mortality rate worldwide. High-sensitivity C-reactive protein (hs-CRP) is an important inflammatory marker for NSTEMI and related to cardiovascular events. Colchicine, as a potent anti-inflammatory drug, is frequently prescribed for the treatment of gout and pericarditis. The present study aimed to evaluate the effects of colchicine, as an anti-inflammatory drug, on hs-CRP levels in NSTEMI patients. We performed a randomised, double-blind, placebo-controlled trial involving 150 NSTEMI patients referred to Imam Reza and Ghaem Hospitals affiliated to Mashhad University of Medical Sciences. The patients were randomised to receive colchicine or placebo along with optimal medications for 30 days. The hs-CRP was measured at the admission and end of the study. Our results revealed that in both colchicine and placebo groups, hs-CRP levels were significantly mitigated in NSTEMI patients compared to baseline ($P<0.001$). However, the decreasing properties of colchicine on hs-CRP levels were remarkably stronger than placebo following the 30 days treatment ($P<0.001$). Nevertheless, neither colchicine nor placebo treatment could achieve the hs-CRP levels lower than 2 mg/L. There were no significant differences between the effects of colchicine on the hs-CRP decrease in diabetic and non-diabetic, male and female, and normal and preserved LVEF NSTEMI patients. It can be concluded that colchicine may prevent the disease progression and succedent cardiovascular events in NSTEMI patients by attenuating the inflammation.

Keywords: Colchicine; non-ST-elevated myocardial infarction; hs-CRP; inflammation.

Crocin Protects Cardiomyocytes against LPS-Induced Inflammation

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Background: Sepsis causes organ dysfunctions via elevation of oxidative stress and inflammation. Lipopolysaccharide (LPS) is the major surface molecule of most gram-negative bacteria and routinely used as a sepsis model in investigation studies. Crocin is an active compound of saffron which has different pharmacological properties such as anti-oxidant and anti-inflammatory. In this research, the protective effect of crocin was evaluated against LPS-induced toxicity in the embryonic cardiomyocyte cell line (H9c2).
Methods: The cells were pre-treated with different concentration of crocin (10, 20 and 40 µM) for 24 h, and then LPS was added (10 µg/ml) for another 24 h. Afterward, the percentage of cell viability and the levels of inflammatory cytokines (TNF-α, PGE2, IL-, and IL-6), gene expression levels (TNF-α, COX-2, IL-, IL-6, and iNOS), and the level of nitric oxide (NO) and thiol were measured.
Results: Our results showed that LPS reduced the cell viability and and thiol content, while increased the levels of cytokines, gene expression, nitric oxide in H9c2 cell. Crocin attenuated the LPS-induced toxicity in H9c2 cells via reducing the levels of inflammatory factors (TNF-α, PGE2, IL-, and IL-6, $p < 0.001$), gene expression (TNF-α, COX-2, IL-, IL-6, and iNOS, $p < 0.001$), and NO ($p < 0.001$), whereas increased the level of thiol content ($p < 0.001$).
Conclusion: The observed results revealed that crocin has preventive effects on the LPS induced sepsis and its cardiac toxicity in an in-vitro model. Probably, these findings are related to anti-inflammatory and anti-oxidant properties of crocin. However, performing further animal studies are necessary to support the therapeutic effects of crocin in septic shock cardiac dysfunction.
Keywords: Sepsis, Lipopolysaccharide, Inflammation, H9c2, cardio-toxicity.

A comparative study on the health-promoting behaviors of patients with and without hypertensive heart disease in Iran

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Background/Aim: Health-promoting behaviors can affect the psychological and physical consequences of hypertension. For the prevention and control of hypertension, lifestyle modification has been recommended. This study aims to investigate the health-promoting behaviors of patients with hypertensive heart disease in Iran and compare them with those of healthy people.
Methods: This is a descriptive comparative study with cross-sectional design. Participants were 141 patients with hypertensive heart disease referred to the cardiac clinic of Madani Hospital in Lorestan, Iran, and 141 healthy people selected from those referred to the same hospital. The Persian version of the revised Health-Promoting Lifestyle Profile-II (HPLP-II) was used to evaluate the health-promoting behaviors of participants. After collecting data, they were analyzed in SPSS v.22 software using descriptive statistics and statistical tests including Independent t-test and one-way ANOVA.
Results: Patients were 63 men and 78 women with a mean age of 39±10.2, while controls were 64 men and 77 women with a mean age of 38.6±9.8 years. The overall HPLP-II score was 142.34±30.48 in patients and 150.52±37.07 in controls. The highest and lowest HPLP-II dimension scores in both groups were related to health responsibility and stress management dimensions. The results of independent t-test showed a significant difference between groups only in dimensions of nutrition and physical activity, and in the overall score ($P<0.05$), whose scores were lower in patients compared to controls. The difference in HPLP-II score of patients with different demographic characteristics (marital status, place of residence, gender, age, educational level, and occupation) was not statistically significant.
Conclusion: Lifestyle modification practices of patients with hypertensive heart disease are moderate, and poorer in nutrition and physical activity compared to healthy people.
Keywords: High blood pressure, health-promoting behaviors, lifestyle,

بررسی تاثیر پماد بابونه در التیام زخم جراحی CABGدر بیماران دیابتی

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زمینه و هدف: یکی از عوارض بیماری دیابت تاخییر در التیام زخم هاست . از پروسیجرهای رایج درمانی در بیماران دیابتی مبتلا به بیماری عروق کرونر عمل جراحی CABG است .بنابراین تاخییر در التیام زخم جراحی بای پس عروق کرونر از مشکلات شایع بیماران دیابتی میباشد.گیاه بابونه در التیام زخمهای زیادی مثل زخم اپی زیاتومی و زخم کولوستومی موثر است از این رو پژوهشگر بر این شد تا تاثیر پماد بابونه را در التیام زخم جراحی CABGدر بیماران دیابتی بررسی کند.

روش کار:این پژوهش از نوع کارآزمایی بالینی تصادفی شده بایک گروه مداخله ویک گروه کنترل بود.۶۰نفر ازبیماران دیابتی که جهت عمل CABG به بیمارستان امام علی (ع) کرمانشاه مراجعه کرده بودند به طور تصادفی در دو گروه ۳۰نفره مداخله وکنترل قرار گرفتند.از روز دوم بعد از عمل جراحی پس از خارج کردن لوله تراشه ناحیه استرنوم بیماران گروه مداخله پس از شست وشو با بتادین با پماد بابونه ۳٪ که توسط پژوهشکده گیاهان دارویی سازمان جهاد دانشگاهی کرج ساخته شده روزانه پانسمان شد در گروه کنترل فقط شست وشو روزانه با بتادین و پانسمان انجام میشداین کار تا ۱۴ روز بعد از عمل انجام میشدالتیام زخم در روزهای۴،۷و۱۴ بعد ازعمل با مقیاس التیام زخم Bates-jensen ارزیابی شد. از SPSS ویرایش ۱۶ جهت تجزیه وتحلیل دادها استفاده شد.. در این پژوهش جهت توصیف نمونه ها از روشهای آمارتوصیفی شامل جداول توزیع فراوانی،تعیین میانگین ،انحراف معیار ودر ارتباط با اهداف وفرضیات پژوهش و تعیین همگنی نمونه ها از آزمون آنوا،کروسکال والیس وکای دو ستفاده شد.

یافته ها:میانگین وانحراف معیار نمره کل التیام زخم دو گروه در روز ۴بعد از مداخله با آزمونANOVAمحاسبه شد که $p>/05$بود بنابر این دوگروه در التیام تفاوت معنا داری نداشتنددر روز ۷بعد از مداخله میانگین و انحراف معیار نمره التیام زخم دوگروه با هم بنابر آزمون ANOVA تفاوت معنا داری داشت$p</001$ در روز۱۴بعد از مداخله بنابر آزمون ANOVA بین دو گروه التیام تفاوت معنی دار داشت$p</001$.

نتیجه گیری: پماد بابونه ۳٪ پس از حداقل یک هفته استفاده میتواند التیام زخم جراحی CABG را در بیماران دیابتی تسریع کند.

کلیدواژگان: پماد گل بابونه، پماد گیاه آلوراء ، درد ، التیام زخم، جراحی بای پس عروق کرونر، بیماران دیابتی

Reperfusion therapy and predictors of 30-day mortality after ST-segment elevation myocardial infarction in a tertiary hospital in the west of Iran

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Aim: To investigate predictors of 30-day mortality after ST-segment elevation myocardial infarction (STEMI), including reperfusion therapy, in a tertiary hospital in the west of Iran.

Methods: In this registry-based cohort study (2016- 2019), we investigated reperfusion therapies— primary percutaneous coronary intervention (PPCI), pharmaco-invasive (thrombolysis followed by angiography/percutaneous coronary intervention), and thrombolysis alone—used in Imam-Ali Hospital, the only hospital with a PPCI capability in Kermanshah Province. We estimated hazard ratios and 95% confidence intervals (HRs, 95%CIs), using Cox proportional-hazard models, to investigate potential predictors of 30-day mortality including reperfusion therapy, admission types (direct admission/referral from non-PPCI-capable hospitals), demographic variables, coronary risk factors, vital signs on admission, medical history, and laboratory tests.

Results: Data of 2428 STEMI patients (mean age: 60.73; 22.9% female) were available. Reperfusion therapy performed in 84% of patients (58% PPCI, 10% pharmaco-invasive, 16% thrombolysis alone). Only 17% of referred patients had received thrombolysis at non-PPCI-capable hospitals. Among patients with thrombolysis, only 38.2% underwent coronary angiography/percutaneous coronary intervention. The independent predictors of mortality were: no reperfusion therapy (HR: 2.01, 95%CI: 1.36-2.97), referral from non-PPCI-capable hospitals (1.73, 1.22-2.46), age (1.03, 1.01-1.04), glomerular filtration rate (0.97, 0.96-0.97), heart rate >100 bpm (1.94, 1.22-3.08), and systolic blood pressure<100 mmHg (4.92, 3.43-7.04). Mortality in the pharmaco-invasive approach was lower, although statistically non-significant, than other reperfusion therapies.

Conclusion: Reperfusion therapy, admission types, age, glomerular filtration rate, heart rate, and blood pressure were independently associated with 30-day mortality. Using a comprehensive STEMI network to increase reperfusion therapy, especially pharmaco-invasive therapy, is recommended.

Keywords: Death, myocardial reperfusion, percutaneous coronary intervention, risk factors

Comparison of Clinical Outcome in Massive Pulmonary Embolism's Patients, between Two Groups of Thrombolytic Therapy and Non- Thrombolytic Therapy, from 2006-2011 Years in Shahid Rajaee Heart Center

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In patients with acute pulmonary embolism, thrombolytic results in a more rapid resolution of pulmonary emboli than Heparin treatment and improved hemodynamic are clear. Whether this advantage results in an improved clinical outcome is unclear. We performed a 5-year retrospective clinical study and compared thrombolytic and nonthrombolytic treatment in patients with massive pulmonary thromboembolism (PTE). Also in this investigation, we studied PTE incidence in Shahid Rajaee heart center, mortality rate in two groups, relationship between massive PTE with sex and age. From 80431 patients that admitted in Shahid Rajaee Heart Center in 5 years, the incidence of PTE was 41cases in 10000 patients and massive PTE was 15 in 10000 patients .There were no relationship between age and sex with massive PTE. (P Value= 0.737 and 0.408). In comparison of hemodynamic changes in before, 24 and 48 hr after treatment in thrombolytic group, there were normal reduction in PR (P Value <0.001), SPAP (P Value = 0.034) and in TRG (P Value = 0.030) and in non-thrombolytic group, we found no special changes in hemodynamic factors. Also we performed comparison between before and 24hr and before and 48hr after treatment in each groups and we observed reduction in SPAP (P Value = 0.022), TRG (P Value = 0.044) and RVD (P Value = 0.042) in before and 24hr after treatment with thrombolytic. And in before and 48hr after treatment in this group, there were reduction in DBP (P Value = 0.027), PR (P Value <0.001), TRG (P Value = 0.005) and RVD (P Value = 0.006). Also, in before and 24hr after in nonthrombolytic group, there were reduction in SBP (P Value = 0.032), DBP (P Value = 0.003), PR (P Value = 0.004) and in before and 48hr comparison in this group, we observed changes in SBP (P Value 0.005), DBP (P Value = 0.002), PR (P Value <0.001) and RVE (P Value = 0.043). In this study, we had 14 case deaths in thrombolytic group and 14 deaths in other group. In the base of this study, we found that there are no relationship between age and sex and massive PTE incidence. There is more effect in thrombolytic treatment vs. non-thrombolytic treatment in more rapid improvement hemo-dynamically but it isn't effective in decrease of mortality in massive PTE patients.

Vitamin D supplementation influence on anthropometric indices, but not on blood pressure and lipid profile in women: a clinical trial study

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Introduction: vitamin D deficiency has defined as a health problem in the worldwide. Recently, it has been shown that vitamin D deficiency may be related to insulin sensitivity, hypertension, hyperlipidemia, and obesity. These factors are linked to increased risks of serious health complications such as type 2 diabetes, CVD, stroke, and kidney failure. In this study, we aimed to perform an investigation about the effects of vitamin D supplementation on anthropometric indices, lipid profile, and blood pressure on obese and overweight women.
Subject and method: This double blind clinical trial was done on 53 overweight and obese women who divided into two groups which intervention group received vitamin D supplements with dozes 50000 IU/w for 6 weeks and another received placebo. The anthropometric indices, biochemical markers, and blood pressure measured before and after intervention, and independent- samples t- test and paired-samples t- test were used to compare the mean between and within group respectively.
Results: After using vitamin D supplementation for 6 weeks weight (wt), WC, Body Mass Index (BMI) were decreased significantly and serum vitamin D increased significantly compared to control group ($p<0/001$). Other factors including total cholesterol (TC), triglyceride (TG), low density lipoprotein cholesterol (LDLc), high density lipoprotein cholesterol (HDLc), and WHR did not change significantly ($p>0/05$).
Discussion: The evidence of this study suggests that supplementation of the vitamin D with dozes 50000 IU/w for 6 weeks in obese and overweight women lead to reduce in BMI, weight and WC significantly, whilst this study did not confirm the effect of vitamin D supplementation on lipid profile.
Key words: Vitamin D Supplementation, Anthropometric indices, Cholesterol, LDL-Cholesterol, HDL- Cholesterol, Triglyceride, Blood pressure.

The effect of supportive educational intervention on the illness perception in patients with heart failure

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Background: Illness perception provides an important framework for examining patients' beliefs and how it affects self-care behaviors, which refers to the importance of illness perception, adherence to treatment, and clinical outcomes. Therefore, this study aimed to investigate the effect of supportive educational intervention based on learning needs on illness perception in patients with heart failure.
Methods: This randomized clinical trial was performed on 120 patients with heart failure in two intervention and control groups in Ayatollah Mousavi Hospital in Zanjan. In the intervention group, a supportive educational intervention based on learning needs and with an educational booklet was performed individually in 3 sessions. Routine care was performed in the control group. Data collection tools **included**: demographic information questionnaire and short/ brief form of illness perception (BIPQ). Data analysis was performed using SPSS 22 software.
Results: Comparison of the mean total score of illness perception in the intervention (27.90+7.89) and control (27.08+6.95) groups before the intervention did not show a statistically significant difference (P = 0.541). But in comparing the mean total score of illness perception in the intervention (50.25+9.51) and control (28.85+7.49) groups after the intervention, a statistically significant difference was found (P <0.001).
Discussion & Conclusion: The results of the study showed that supportive educational intervention had an effect on the illness perception in patients with heart failure. Therefore, it is recommended that health care providers pay more attention to the concept of illness perception in designing and implementing educational interventions to improve the outcomes of heart failure.
Keywords: Illness perception, education, heart failure

Joint effect of diabetes and opiate use on all-cause and cause-specific mortality: the Golestan cohort study

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Background: Many diabetic individuals use prescription and non-prescription opioids and opiates. We aimed to investigate the joint effect of diabetes and opiate use on all-cause and cause-specific mortality.
Methods: Golestan Cohort study is a prospective population-based study in Iran. 50045 people— aged 40-75, 28811 women, 8487 opiate users, 3548 diabetic patients— were followed during a median of 11.1 years, with over 99% success follow-up. Hazard ratio and 95% confidence intervals (HRs, 95%CIs), and preventable death attributable to each risk factor were calculated.
Results: After 533309 person-years, 7060 deaths occurred: 4178 (10.8%) of non-diabetic non-opiate users, 757 (25.3%) diabetic non-users, 1906 (24.0%) non-diabetic opiate users, and 219 (39.8%) diabetic opiate users. Compared with non-diabetic non-users, HRs (95%CIs) for all-cause mortality were 2.17 (2.00-2.35) in diabetic non-opiate users, 1.63 (1.53-1.74) in non-diabetic opiate users, and 2.76 (2.40-3.17) in diabetic opiate users. Among those who both had diabetes and used opiates, 63.8% (95%CI: 58.3%-68.5%) of all deaths were attributable to these risk factors, compared with 53.9% (95%CI: 50%-57.4%) in people who only had diabetes, and 38.7% (95%CI: 34.6%-42.5%) in non-diabetic opiate users. Diabetes was more strongly associated with cardiovascular than cancer mortality. The risk of early mortality in known cases of diabetes did not depend on whether they started opiate use before or after their diagnosis.
Conclusions: Using opiates is detrimental to the health of diabetic patients. Public awareness about the health effects of opiates and improvement of diabetes care, especially among individuals with or at risk of opiate use, are necessary.
Keywords: causes of death, diabetes mellitus, mortality, opiate addiction, opioids, opium.

The Comparison of Demographic Characteristics in Patients with Massive Thromboembolism: Recipient Thrombolytic and Non-Thrombolytic Agents

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Pulmonary embolism sees in different range of people, from children to the elderly. Treatment and prevention of pulmonary embolism is much more difficult, because the symptoms are nonspecific in pulmonary embolism. Thrombolytic successful treatment may quickly return to right heart failure and so reduce the mortality and recurrent pulmonary embolism. thrombolytic faster than heparin and the clot dissolves quickly return to right heart failure, But also their effectiveness in lowering mortality and recurrent pulmonary embolism is controversial. This is a comparative analytical research. Compared changes in hemodynamic parameters using statistical analysis General Liner Model in three time periods to 24 and 48 hours after treatment in the group receiving non-thrombolytic were observed between the systolic blood pressure, diastolic blood pressure and pulse rate no significant difference (P-Value >.05). To compare the hemodynamic qualitative factors such as the dilation of the right ventricle and right ventricle function failure, Friedman test was used which statistically significant relationship was not found (P-Value >.05). Compare changes in hemodynamic parameters using statistical analysis General Liner Model in three time periods to 24 and 48 hours after treatment in Group thrombolytic were observed between the pulmonary arterial systolic pressure, pulse rate and tricuspid regurgitation gradient there is a significant difference(P-Value <.05). Also, tricuspid regurgitation in this group, systolic and diastolic pressure gradient, there is no significant statistical difference in the three times studied (P-Value >.05). To compare hemodynamic changes qualitative factors such as the dilation of the right ventricle and right ventricle function failure, Friedman test was used but significant relationship was not found(P-Value >.05).

بررسی ارتباط هوش معنوی با خود کارامدی بیماران سندروم کرونری حاد بستری در بخش های مراقبت های ویژه

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چکیده پژوهش: افراد مبتلا به سندروم کرونری حاد به افزایش مهارتهای توانمند سازی نیاز دارند تا بطور موثر علایم و نشانه های بیماری خود را کنترل نمایند و همچنین با ایجاد تغییر در سبک زندگی، مانع بوجود آمدن عوارض ناشی از این بیماری شده و یا بروز آنرا به تاخیر اندازند.از این رو خودکارآمدی به عنوان یک عامل موثر در بهبود مراقبت از خود و تعدیل کننده خطر بیماری عروق کرونر معرفی شده است. هوش معنوی باعث می شود، میزان بیماری کاهش یافته و طول عمرافزایش یابد. به نظرمی رسد؛ افرادی که به معنویت تمایل دارند به هنگام مواجهه با آسیب و تروما به درمان بهتر پاسخ می دهند. با توجه به اهمیت خود کارامدی در بیماران کرونری حاد، این پژوهش در پی پاسخ به این سئوال است که آیا هوش معنوی با خود کارامدی در بیماران سندروم کرونر حاد ارتباط دارد.

روش کار: در این مطالعه توصیفی همبستگی، 136بیمار بستری در بخش‌های مراقبت ویژه قلبی (سی سی یو) بیمارستان‌های منتخب وابسته به دانشگاه علوم پزشکی شهید بهشتی به صورت در دسترس انتخاب شدند. داده‌ها با استفاده از پرسشنامه اطلاعات دموگرافیک و پرسشنامه‌ی هوش معنوی و پرسشنامه خودکارامدی سالیوان جمع‌آوری گردیدند و با نرم افزار spss نسخه‌ی ۲۲، آمار توصیفی، رگرسیون خطی تک متغیره و تحلیل رگرسیون چندگانه تجزیه و تحلیل شدند.

یافته ها: اکثریت بیماران شرکت‌کننده در مطالعه را (۶۱/۸درصد) مرد، متاهل (۶۹/۱ درصد) و دارای میانگین سنی ۵۸/۸۵ سال بودند. میزان هوش معنوی" برابر با ۴۷/۱۸بود. بیماران شرکت کننده در این مطالعه در مؤلفه"تفکر انتقادی" نمره ۱۳/۷۲ و مولفه "معنی سازی شخصی" نمره ۱۰/۱۹ به دست آورده‌اند. میانگین مؤلفه " آگاهی متعالی " نیز برابر با ۹/۷۰ گزارش شده است. این شاخص در خصوص مؤلفه "گسترش خودآگاهی" به ۹/۴۷می‌رسد(p=۰/۰۱

نتیجه گیری: نتیجه گرفته می شود که با افزایش هوش معنوی، خود کار آمدی بیماران سندرم کرونری حاد ارتقا می یابدو توجه به راهکارهایی برای ارتقاء هوش معنوی می تواند سبب بهبود خود کار آمدی در بیماران سندرم کرونری حاد گردد.. با توجه به آموزش پذیر بودن هوش معنوی می توان با انجام مطالعات در زمینه تأثیر آموزش هوش معنوی و مؤلفه های آن بر سطح خودکارآمدی، گام مهمی در جهت بهبود خودکار آمدی بیماران برداشت.

واژگان کلیدی: سندروم کرونری حاد- هوش معنوی– تاب آوری

The effect of reflexology on cardiovascular diseases

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Introduction: Cardiovascular diseases patients deal with different challenges in physical, psychological and social dimensions of their life. Using complementary and alternative therapies might be effective in these patients in the acute and chronic phase of the disease. This study aimed to determine the effect of complementary and alternative therapies named reflexology on cardiovascular diseases.
Methods: The present study was performed as a systematic review on the effect of reflexology in cardiovascular patients by searching on Elsevier, and Springer publishing companies, Cochrane network, and PubMed search engine. Search was conducted using keywords such as cardiovascular diseases, reflexology, heart diseases, anxiety and sleep.
Results: This review indicated that reflexology regulated physiological indices such as systolic and diastolic blood pressure, heart rate, respiration, and temperature in patients undergoing angiography, angioplasty, and coronary artery bypass graft and had hypertension and heart failure diseases. On the other hand, limited number of studies reported that this intervention was not effective in physiological indices in cardiovascular disease patients. Moreover, the effect of reflexology on reducing anxiety, pain, and fatigue, and improving sleep were also reported in cardiovascular disease patients.
Conclusion: Considering the effectiveness of reflexology in cardiovascular patients in most studies, in order to achieve evidence-based practice and generalizability of findings, further studies are recommended in cardiovascular patients.
Keywords: Anxiety, Cardiovascular diseases, Reflexology, Sleep, physiological parameters

Evaluation of the association between sleep quality and physiological indices in patients with acute myocardial infarction admitted in coronary care units

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Introduction: Changes in the physiological indices of patients with acute myocardial infarction have negative consequences. The aim of this study was to determine the association between sleep quality and physiological indices in patients with acute myocardial infarction admitted in coronary care units (CCU).

Method: This was a cross-sectional study. The patients with acute myocardial infarction admitted in CCU of Shiraz University of Medical Sciences participated in this study. The Pittsburgh Sleep Quality Questionnaire and the Physiological indices Form were used to data collection.

Results: The results showed that the mean score of acute myocardial infarction patients' sleep quality was 11.57 on the first day of CCU admission and 85% of the participants reported poor sleep quality. The results of the study showed that the higher the physiological indices of patients such as blood pressure, heart rate, temperature, and respiration were associated with poorer quality of sleep.

Conclusion: The results of the study indicated that physiological indices were associated with the quality of sleep. Therefore, by regulating physiological indices, the sleep quality might be improved in patients with acute myocardial infarction admitted in CCU.

Keyword: Coronary Care Units, acute myocardial infarction, sleep, physiological indices

The association between shock anxiety and spiritual wellbeing in patients with Implantable Cardioverter Defibrillator

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Introduction: Shock is one of the challenges in patients with implantable cardioverter-defibrillator. This device and shock might lead to anxiety in these patients. Some factors may impact on anxiety in these patients. This study aimed to determine the association between shock anxiety and spiritual well-being in patients with implantable cardioverter-defibrillators.

Methods: This cross-sectional study was conducted on one hundred patients with implantable cardioverter-defibrillator. The patients who referred to pacemaker and ICD clinics participated in this study. Florida Shock Anxiety Scale and Spiritual Well-Being Scale were used for data collection. The data were analyzed using SPSS software and Pearson correlation coefficient test.

Results: The mean score of shock anxiety in patients was 21.93, and the mean score for spiritual wellbeing was 88.92. The results of this study revealed no significant association between shock anxiety and spiritual well-being (r= -0.17, p= 0.08)

Conclusion: The results of this study showed that the mean score for shock anxiety in patients was at a low level. Besides, the mean score for spiritual well-being in the Muslim patients was in moderate level. Spiritual interventions are recommended to reduce shock anxiety among implantable cardioverter-defibrillator patients.

Key words: Anxiety, ICD, Shock, Spiritual well-being

Methadone toxicity and acute cardiac injury

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Objective: Methadone usage association with acute cardiac injury that indicated by high sensitive-troponin as a cardiac injury biomarker is unknown. We sought to investigate the relation between methadone toxicity and acute cardiac injury.

Methods: A total of 60 patients with methadone toxicity were recruited in this prospective cross-sectional study from October 2018-November 2020. High sensitive-troponin and electrocardiogram(ECG) were requested at admission. All patients underwent echocardiography for assessment of left ventricular ejection fraction(LVEF), diastolic dysfunction, regional wall motion abnormalities(RWMA), LV size dilation, Valvular Regurgitation and pulmonary arterial pressure(PAP) at baseline and 30 days afterwards based on high sensitive-troponin results.

Results: Mean age of the patients was 34.5±11.1 years (males: 66%). 12(20%) patients had positive high sensitive-troponin results. Long QT interval and inverted T in precordial leads were mostly observed in individuals with positive high sensitive-troponin (75% vs. 35%, P=0.013 and 83% vs. 16%, P<0.001, respectively). Patients with elevated troponin had reduced LVEF in comparison to normal group during admission (43.1±15.4% vs. 55%, P<0.001) and this LVEF remained abnormal after 30 days (43.7±21.6%). High sensitive-troponin patients had higher RWMA frequency both at baseline and 30 days afterwards compared to the other group (baseline: 42% vs. 0, P<0.001, after 30 days: 25% vs. 4%,P=0.020).

Conclusion: Patients with simultaneous methadone toxicity and positive high sensitive-troponin had worse cardiac outcomes and this biomarker could be probably used for better implementation of therapeutic interventions and prognosis.

Keywords: Methadone, High sensitive troponin, Long QT syndrome, Echocardiography

Risk factors of atrial fibrillation after coronary artery bypass graft surgery

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Introduction: Atrial fibrillation is one of the most common disorientations after coronary artery bypass graft surgery, which can affect the chance of survival in the first year after surgery. The aim of this study was to determine the incidence of atrial fibrillation after coronary artery bypass graft surgery and its risk factors. Materials and Method: This cross-sectional study was performed on 854 cases of patients undergoing coronary artery bypass graft referring to hospitals affiliated to Shiraz University of Medical Sciences. Data were collected by ECG, Echocardiographic and angiography results, and demographic information. Data was analyzed by SPSS software version 22.

Results: 46% of the patients had a disorder of three coronary arteries. The most common structural disorder in patients was mitral regurgitation and left atrium enlargement and hypertrophy in 14.9% and 10.5% respectively. The most common underlying conditions in the participants were hypertension, hyperlipidemia, and diabetes which was observed in 74.4%, 56.2% and 31.8%, respectively. The incidence of atrial fibrillation in these individuals was 18.9%. There was a significant relationship between atrial fibrillation after coronary artery bypass graft surgery and left ventricular size and its hypertrophy, age and duration of smoking ($p < 0.001$).

Conclusion: Since atrial fibrillation was observed in about one-fifth of people and smoking is a moderating factor in the incidence of this disease, smoking cessation is recommended. In addition, health care providers can consider the size of the left atrium and its hypertrophy during care and treatment.

Keywords: Incidence, Atrial Fibrillation, Coronary Artery Bypass, Risk Factors

The effect of continuous care program on the self-efficacy of patients with Implantable Cardioverter Defibrillator (ICD)

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Introduction: Implantable cardioverter defibrillator (ICD) is one of the most common treatments for ventricular dysrhythmia. Despite the benefits of ICD, patients experience adverse physical, psychological and social consequences. This study investigated effects of continuous care program on self-efficacy of patients with ICD.
Purpose: To determine the effect of continuous care program on the self-efficacy of patients with ICD.
Methods: This study is a randomized clinical trial that was conducted on 154 patients referred to Heart Clinic to receive ICD for the first time. Patients were randomly divided into two groups. In the intervention group, in addition to usual measures, continuous care program was implemented after insertion of ICD. Then, their self-efficacy was measured. The obtained data were analyzed by SPSS-16 software.
Findings: Results showed that after 12 weeks, there was a significant difference in the mean score of self-efficacy between two groups, so that mean score of self-efficacy in the intervention group was significantly higher than control group (mean, SD= 3.1± 1.4 vs 1.6 ± 1.3, $p<0.001$).
Conclusion: The results of present study revealed that, providing a continuous care program can increase self-efficacy in patients with ICD and can be used as an effective model in the nursing care of patients with ICD.
Keywords: Self-Efficacy, Implantable Cardioverter Defibrillator (ICD), Continuous Care Program.

تاثیر برنامه آموزشی بر آگاهی از رفتارهای بهداشتی بیماران قلبی

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چکیده مقدمه : بیماری‌های قلبی به عنوان یکی از عوامل تهدید کننده‌ی سلامت انسان‌ها در دنیا شناخته شده‌اند. باتوجه به افزایش شیوع بیماری‌های قلبی و عوارض وخیم ناشی از آن پژوهش حاضر با هدف بررسی میزان تاثیر برنامه آموزشی بر آگاهی از رفتارهای بهداشتی بیماران قلبی مراجعه کننده به مراکز بهداشتی -درمانی شهر یاسوج انجام شد.

مواد و روش‌ها :در این پژوهش کارآزمایی بالینی، تعداد ۷۶بیمار دارای بیماری قلبی مراجعه کننده به مراکز بهداشتی -درمانی شهر یاسوج در سالهای 1397و ۱۳۹۸انتخاب شدند.این بیماران به طور تصادفی به دو گروه مداخله(۳۸) و کنترل(۳۸) تقسیم شدند. جهت سنجش عوامل آگاهی از رفتارهای بهداشتی در بیماران قلبی از پرسش نامه ی خود ساخته قبل و بعد از آموزش استفاده گردید. برنامه ی آموزشی به صورت ۹ جلسه ی هفتگی (مجموعا ۲ ماه)۹۰-۶۰ دقیقه ای برای گروه آزمون انجام شد و سپس بیماران به مدت دوماه پی گیری شدند. داده های به دست آمده با استفاده از آزمونهای آماری نظیر آزمون تی مستقل، کای اسکوئر، یومن ویتنی و آزمون دقیق فیشر توسط نرم افزار SPSS نسخه ۱۹ انجام شد.

یافته ها : دو گروه مداخله و کنترل از نظر ویژگی‌های جمعیت‌شناختی تفاوت معنی‌دار نداشتند. پیش از مداخله، تفاوت معنی‌داری بین نمره تمام عوامل آگاهی از رفتارهای بهداشتی در بیماران قلبی (آگاهی از عوامل پرخطر بیماری، آگاهی از رژیم غذایی، آگاهی از فعالیت های بدنی و ورزشی، آگاهی از علایم بیماری، آگاهی از رژیم دارویی) در بیماران دو گروه دیده نشد اما پس از مداخله تفاوت بین دو گروه معنی‌دار بود (۰/۰۰۱)

نتیجه گیری : این مطالعه نشان داد که برنامه های آموزشی مرتبط با عوامل اگاهی از رفتارهای بهداشتی در بیماران قلبی اثربخش می باشد .بنابراین این برنامه های آموزشی برای کنترل بیماران قلبی توصیه می شود.

کلید واژه ها: رفتارهای بهداشتی، بیماران قلبی، برنامه آموزشی

UNUSUAL ASCENDING AORTA DISECTION IN PSORIASIS PATIENT POST PCI: A CASE REPORT

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Introduction: The incidence of iatrogenic aorta dissection post PCI is rare (0.02% - 0.03%), but life-threatening complication (1, 2). The previous study shows that psoriasis associate with chronic vascular inflammation and cardiovascular disease (3-5). We report an aortic dissection patient with psoriasis.

Case Description: A 51-years-old woman with history of Hypertension, Severe psoriasis, Sensitivity to Seafood and two vessel disease submitted to Operation Room. After mid sternotomy, a large hematoma in the ascending aorta in favor of aortic dissection existed (figure 1). CPB established. Aorta opened three-point of aortic laceration in ascending aorta about 7 mm, non-coronary sinuous and another near to Rt coronary ostium about 2 mm length (figure 2) repaired. CABG done and chest closed.

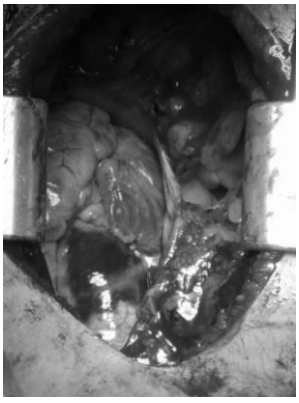

Figure 1: Stanford type a DeBakey type II aortic dissection, enlarged ascending aorta with an approximate of 2.5*5 cm.

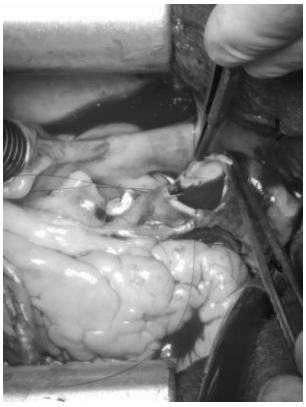

Figure 2: Laceration of ascending aorta

Discussion: Aortic dissection is rare but is dangerous and life-threatening. Previous case reports stated a progressive dissection right/ left coronary with the incidence of (0.06-0.1%) or ascending aortic dissection 5-10/100,000 person-years (6-9). In our report, aortic dissection is situated at three-point in the ascending aorta, non-coronary sinuous and another near to Right coronary ostium. Our patient had a history of severe psoriasis. There are few reports of a chronic inflammatory disease

like psoriasis can weaken vascular function (10, 11). Some studies state a relation between psoriasis and cardiovascular disease (3, 4). PET-CT shown psoriasis can cause arterial wall inflammation(12, 13). Chiu and co-workers have shown that psoriasis can be an independent risk factor for aortic aneurysm(14). Appear that risk of cardiac-catheter-related aortic dissection in patient with psoriasis is higher than the other patient. In our case emergent CABG was performed and the lacerated aorta was repaired.

CONCLUSION: We describe a patient with psoriasis and iatrogenic aortic dissection post percutaneous coronary intervention. A conservative strategy in PCI is recommended in patient with psoriasis.

KEYWORD: Percutaneous Coronary Intervention, Aortic Dissection, Psoriasis, Coronary Artery Bypass Graft, case report

A report of cerebral infarction following correction of aortic coarctation surgery in children

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Background: Coarctation of the aorta (CoA) is a congenital heart defect that, due to the narrowing of the descending aorta, blood flow mainly reduces after the stenosis and can occur in all areas of the thoracic and abdominal aorta. Cardiac surgeons and cardiologists are familiar with postoperative complications of CoA, but some others also exist that have not been reported so far.
Case: In the present study, we investigated three cases of CoA, which underwent reconstructive surgery. Still, a couple of days after the surgery, they manifested symptoms suspecting cerebral infarction, which, after performing brain CT, ischemic infarction was observed. Also, we discuss possible pathophysiology and reasons that can lead to this problem.
Conclusion: The prevalence of postoperative infarction is scarce among children and infants; however, it is crucial because they are often neglected due to the need for early repair of the lesion and the inability to express their neurological symptoms. Pediatric cardiologists and pediatric cardiac surgeons are recommended to consider these cases seriously in treating CoA. Before surgery, a brain CT or Magnetic resonance angiography and Magnetic Resonance Venography may help rule out any aneurysms and possible cerebrovascular defects.
Keywords: Aortic Coarctation, Surgical Repair, Stroke, cerebral infarction, children

مقایسه درمان‌های روانشناختی بر شدت افسردگی بیماران دچار سکته قلبی

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مقدمه: سکته قلبی (MI)یکی از مهمترین علت مرگ و ناتوانی در جوامع امروزی است.علائم افسردگی در بین این بیماران شایع است و میتواند باعث پیامدهای منفی شود. با توجه به استفاده از درمان های روانشناختی بر افسردگی، این مطالعه با هدف مقایسه اثر درمانی حساسیت زدایی و پردازش مجدد حرکت چشم (EMDR) با درمان رفتاری شناختی (CBT) بر افسردگی در بیماران مبتلا به سکته قلبی انجام شد.

مواد و روش ها: این کارآزمایی بالینی تصادفی بر روی ۹۰ بیمار واجد شرایط سکته قلبی در بیمارستان امام سجاد (ع) یاسوج انجام شد. همه بیماران با معیارهای ورود و خروج انتخاب شدند و به صورت تصادفی به دو گروه مداخله و یک گروه کنترل تقسیم شدند. گروه حساسیت زدایی و پردازش مجدد حرکت چشم در ۸ جلسه دوبار در هفته به مدت ۴۵ تا ۹۰ دقیقه در یک اتاق آرام بیمارستان مطابق پروتکل شرکت کردند و گروه مداخله دیگر ۱۰ جلسه ۹۰ دقیقه ای دو بار در هفته درمان رفتاری شناختی دریافت کردند.

گروه سوم (گروه کنترل) هیچ مداخله ای از طرف پژوهشگر دریافت نکردند. داده های مربوط به افسردگی قبل و بعد از مداخله با استفاده از پرسشنامه افسردگی بک که بر اساس مقیاس لیکرت طراحی شده است در همه گروه‌ها جمع آوری شد. برای تجزیه و تحلیل داده ها از نرم افزار SPSS ، آمار توصیفی، آزمون مجذور کای، تحلیل واریانس (ANOVA) و آزمون تعقیبی Tukey استفاده شد.

یافته ها: نتایج این مطالعه تفاوت معنی داری را در میانگین نمرات افسردگی بین گروه های مداخله EMDR و CBT نشان داد (p۰ / ۰۰۱>).نتایج این مطالعه نشان داد که میانگین نمرات افسردگی بین EMDR و گروه کنترل از لحاظ آماری تفاوت معنی داری نداشت (P <۰/۰۵).

نتیجه گیری: هر دو روش EMDR وCBT افسردگی بیماران مبتلا به سکته قلبی را کاهش می‌دهد، اما EMDR موثرتر است. با توجه به تاثیر CBT و EMDR در کاهش میزان افسردگی بیماران دچار سکته قلبی، استفاده از این روش‌ها و آگاهی دادن در این بیماران ضروری به نظر می رسد چرا که می‌تواند در پیشگیری و افزایش کیفیت درمان مبتلایان به این نوع بیماری موثر واقع شود.

کلیدواژه ها: درمان های روانشناختی ، سکته قلبی، افسردگی

The effect of w 3-rich Camelina sativa on the cardiometabolic risk factor in non-alcoholic fatty liver disease: A randomized, controlled trial

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Objective: Non-alcoholic fatty liver disease (NAFLD) is a severe and growing medical problem and plays a direct role in the recently enhanced incidence of cardiovascular disease. As some beneficial effects of omega-3 fatty acids and antioxidants co-supplementation have been reported in NAFLD, the current study investigated the effects of Camelina sativa oil (CSO) as a rich source of omega-3 fatty acids and antioxidants on anthropometric indices, lipid profile, blood pressure (BP) in NAFLD patients..
Methods: This triple-blind, placebo-controlled, randomized clinical trial was performed on 46 NAFLD patients randomly assigned to either a CSO (20 g/day) supplement or placebo for 12 weeks. Both groups received a loss-weight diet. Lipid profile, anthropometric indices, and blood pressure were determined at baseline and at 12 weeks.
Results: At 12 weeks, CSO supplementation significantly decreased weight (-7.65%), body mass index (-5.39%), triglyceride (-12.44%), total cholesterol (-10.81%), low-density lipoprotein cholesterol (-19.52%) and systolic BP (-4.89%) ($p<0.05$). No effect of CSO was observed on high-density lipoprotein cholesterol or diastolic BP. These results were held after adjustment for sex, energy intake, and baseline values.
Discussion: This study revealed that CSO supplementation for 12 weeks causes significant changes in anthropometric indices, lipid profile (except HDL-c), and systolic BP in NAFLD patients. Further investigation is necessary to examine the mechanisms for these effects and to confirm whether CSO is an effective complementary therapy for NAFLD.
Keywords: Camelina sativa, omega 3, lipid profile, NAFLD

Conventional Versus Patent Hemostasis of the Radial Artery after Transradial Coronary Angiography: A Randomized Clinical Trial

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Background: Transradial coronary catheterization has already become popular in clinical practice. Radial artery occlusion (RAO) is an infrequent but discouraging complication of transradial access. Despite this complication is usually asymptomatic and clinically silent, it limits future transradial access. It seems that the presence of anterograde flow in the artery during hemostasis (patent hemostasis) plays a preventive role for arterial occlusion.
Objectives: The aim of this study was to compare conventional versus patent hemostasis after transradial coronary angiography regarding the access site complications especially RAO.
Methods: The present study was designed as a prospective randomized, parallel, open-label clinical trial which was conducted on consecutively adult patients scheduled to undergo a diagnostic or therapeutic transradial coronary procedure at Bu-Ali Sina and Mehregan Hospitals (Qazvin, Iran) based during 3 months' period between March 2021 and May 2021. The number 200 patients divided randomly into two groups, including conventional hemostasis group and patent hemostasis group. The incidence of RAO at discharge were evaluated in both groups as the primary endpoint, and we considered other access site complications as the secondary endpoints.
Results: The mean age of the patients was 61.60±10.45 (range 34-86) years, and gender distribution (male/female) of the patients was 119/76. The baseline characteristics were similar in the two study groups. RAO at discharge in patent hemostasis group with a frequency of two cases (2.02%) was significantly less than conventional hemostasis group with a frequency of nine cases (9.37%) (P= 0.02). Furthermore, demographic, clinical, and procedural variables were not found to be associated with RAO.
Conclusion: Our study clearly demonstrated that patent haemostasis is highly effective in reducing radial artery occlusion after Transradial coronary catheterization
Keywords: Coronary artery disease, Transradial angiography, Radial artery occlusion, Patent hemostasis

A novel method in the simultaneous combination of vein stem cell injection and the Enhanced external counterpulsatuion machine in implantation of stem cells into the heart at the end of systolic phase and estimating tissue engineering modeling in changing type of stem cell by repeating the cycle

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Background: Since heart disease is a critical medical condition today, non-invasive methods have rarely been adopted around the world, particularly in Iran. There are a wide variety of techniques proposed so far for replacement and the type of heart stem cells. However, researchers have not yet achieved a heart treatment protocol consistent with the blood distribution system.
This paper intended to combine cell therapy and an external counterpulsation by inserting stem cells to the right spot simultaneously with diastolic and systole phases while avoiding any disruption in the heart's function.

Method: There is currently a medical device known as enhanced external counterpulsation, which is used in non-invasive cases. The pneumatic cuffs begin to inflate simultaneously with the end of diastole from the distal point to proximal of lower limbs and then the pelvis region. I attempted to replace these cells through an innovative technique, where there is no need for laser stimulation or catheter to remove femoral arteries and transplant to the heart, Contrary to previous procedures, the new technique will not give rise to any complications and does not require stimulants prior to implantation of stem cells. This technique can also be promising in invasive conditions. The new device will be capable of injecting and replacing stem cells, requiring a lower budget with a single sensor detecting the second sound of heart and aortic valve.

Results: The injection of adult stem cells in the femoral vein is synchronized with the heart function. In the newly proposed system, the stem cells are developed through replication and are no longer repulsed by the cardiac system. Moreover, injection of stem cells by the new device can help strengthen myocardial muscles when the cuff stresses the femoral vein. This can also lead to future medical breakthroughs for heart patients. In addition to the movement of cells in the peripheral blood, the new technique can facilitate the vein growth and shear stress, while enhancing the cardiac output.

Conclusions: This paper intended to combined cell therapy and an enhanced external counterpulsation by inserting stem cells to the right spot with diastolic and systole phases that will improved the type and function of stem cell with circulation in the body and show us new idea.

Keywords: non-invasive, pneumonic cuff, femoral vein, myocardial muscle, shear stress, systolic phase, diastolic phase

Survival rate and predictors of mortality in patients hospitalised with heart failure: a cohort study on the data of Persian registry of cardiovascular disease (PROVE)

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Objectives Heart failure (HF) has a high rate of hospitalization and mortality. We examined its risk factors, survival rate and the predictors.

Methods: In this prospective cohort study, demographic, clinical and treatment data of 1223 patients hospitalized with HF were extracted from the Persian Registry Of cardio Vascular diseasE (PROVE)/HF registry. Survival rate and HR and their association with other variables were assessed.

Results: 835 (68.3%) were censored, while 388 (31.7%) patients were deceased. Mean age and frequency of hypotension during hospitalization, tachycardia, pulmonary hypertension and anemia, hypernatremia, heart valve disease and renal disease of the deceased patients was significantly higher than censored patients (15.2vs6.1%, 51.1vs40.1%,24.4vs16.7%, 39.0vs31.8%, respectively, $p<0.05$).ACE inhibitor (ACEI)/angiotensin receptor blocker (ARB) (89.8%vs82.1%, respectively) and beta blocker (BB) (81.1%vs75.5%, respectively) were higher in follow–up in the censored group ($p<0.001$ and 0.02, respectively).
Crude Cox regression analysis identified age, tachycardia, hypotension, anemia, pulmonary hypertension and heart valve disease as predictors of mortality (HR >1) and using ACEI/ARB and BB as predictors of life (HR <1, $p<0.05$). After adjustment, all variables lost their significance, except BB (HR 0.63, $p=0.03$) and tachycardia (HR 1.74, $p=0.01$) and New York Heart Association (NYHA) class IV (HR 1.90, $p=0.04$) became significant predictors.

Conclusions: We found a high mortality rate (31.7%). As NYHA class IV and tachycardia were significant predictors of mortality after adjustment, an effective measure can be treatment of underlying diseases, which deteriorate patients' conditions. Monitoring of medications for at–risk group, especially BB that predicts life, is important.

Key words: Heart failure, disease registry, Survival rate

Evaluation of lipid profile and oxidized low density lipoprotein cholesterol as cardiovascular risk factors in women

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Background: Cardiovascular disease (CVD) is the leading cause of mortality among men and women around the world. The aim of this study was to investigate lipid profile and oxidized low density lipoprotein cholesterol (ox-LDL) as cardiovascular risk factors in women living in the Tabriz petrochemical region, Iran.
Methods: In this cross-sectional study, a sample of 152 women aged 30-55 years was selected from who attended health center in Tabriz and Fasting serum lipid profile and ox-LDL were evaluated.
Results: High serum triglyceride (TG), total cholesterol (TC), low density lipoprotein cholesterol (LDL-C) and low high-density lipoprotein cholesterol (HDL-C) were determined in 32.5%, 25.7%, 17.8% and 56.6% of subjects, respectively. The median of serum ox-LDL concentration was 3181.5 ng/L. In the multiple-adjusted quintile regression analysis, significant relationships were found between serum ox-LDL and age (B = 96.7, P = 0.003).
Conclusion: The high prevalence of high serum TG and low HDL-C as cardiovascular risk factors in the studied women warrants more public health attention. The findings also suggest that aging was associated with high serum ox-LDL that confirms in aging and age-related metabolic disorders such as dyslipidemia, hyperglycemia, insulin resistance and metabolic syndrome enhancement of oxidative stress and superoxide anion lead to LDL oxidation.
Keywords: Cardiovascular risk factors, Women, Lipid profile, Ox-LDL, Petrochemical region

The effect resistant dextrin on the cardiometabolic risk factors in patients with type 2 diabetes mellitus: a randomized-controlled clinical trial

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Background: Type 2 diabetes mellitus (T2DM) is 1 of the most widespread chronic metabolic diseases, an established risk factor for cardiovascular disease (CVD) and is related to disturbed metabolism of lipids and lipoproteins. Resistant dextrin is well studied for its health benefits, enhancing the immune system and improving blood lipid metabolism of pharmacological nutrients. The trial aimed to evaluate the ability of resistant dextrin to modify selected cardiometabolic risk factors in subjects with T2DM.

Methods: A total of 65 female subjects with T2DM were assigned to either the intervention (n = 33) or control (n = 32) groups. Patients were given a 10 g/d of resistant dextrin or placebo, respectively, for 8 weeks. Anthropometric indices, lipid profile, atherogenic indices and blood pressure were measured at baseline and post-intervention.

Results: After the intervention, significant reductions in weight, body mass index(BMI), triglyceride, TC/HDL, LDL-c/HDL-c, Atherogenic index, and systolic blood pressure in the intervention group compared with the control group. Serum total cholesterol, low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), and diastolic blood pressure changes did not show any significant difference between the study groups ($p > 0.05$).

Discussion: Overall, the results showed that supplementation with resistant dextrin might benefit T2DM patients to improve cardiometabolic risk factors. Future prospective randomized clinical trials with longer intervention duration are warranted to obtain a precise conclusion.

Keywords: Resistant dextrin, Type 2 diabetes mellitus, lipid profile, Blood pressure, cardiovascular disease

Association of Troponin-I Level on Admission with 6-month Clinical Consequences in Acute Coronary Syndrome Patients: A Preventive Approach in Patient Care

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Background: Cardiovascular diseases are the leading cause of mortality worldwide. Therefore, it is important to predict the future consequences of the disease in patients who have recovered. Objectives: We sought to determine the relationship between troponin-I level and 6-month clinical consequences (i.e., re-infarction, death, re-angiography and coronary artery bypass grafting) in patients with acute coronary syndrome (ACS).
Methods: This prospective cross-sectional study was performed among 60 patients with ACS admitted to Ayatollah Mousavi Hospital in Zanjan, Iran. The participants were chosen using the convenience sampling method. Troponin-I level in these patients was initially evaluated. Afterwards, they were followed up for six months in terms of clinical consequences. A checklist was prepared to collect the required data. The receiver operating characteristic (ROC) analysis was conducted to determine the predictive power of high-sensitivity troponin I for the mentioned consequences. Iodine index was calculated to determine the cutoff point for this enzyme in order to predict the consequences.
Results: In general, 66.2% of the participants were male and the mean age was 60.46 ± 12.78 years. We found that 21.2% of the participants experienced one of the four clinical consequences in the follow-up period of 6 months. The sub-curved surface was calculated to be 0.705 for the prediction of consequences. The cutoff point for the prediction of consequences was 32.5; the negative predictive value for the cutoff point was 32.5, which was equal to 89.8%.
Conclusion: Troponin-I has an acceptable predictive power to identify 6-month consequences of ACS. Moreover, considering the negative predictive value of troponin-I, it is recommended to use this biomarker in patients with ACS. In addition, healthcare providers should pay more attention to the follow-up of patients after discharge and design preventive programs.
Keywords: troponin-I, acute coronary syndrome, sensitivity, specificity, preventive

Evaluation of Vasorelaxant Activities of Pyranopyrazole Derivatives in Isolated Rat Thoracic Aorta

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Background: Pyranopyrazole analogs are an important class of compounds because of their comprehensive utilities. They have shown many biological properties including, fungicidal, bactericidal, vasorelaxant, and anti-cancer activities. The present study compared the vasorelaxant activities of 6 pyranopyrazole derivatives with that of nifedipine on rat aortic rings.

Methods: Thoracic aorta rings from forty-two male Sprague-Dawley rats (200-220 g) were suspended Krebs buffer for isometric tension recording. Initially, the isolated aortas were treated with KCl (40 mM), and the increased contractions were recorded. After washing out and maintaining the baseline tension, the tissues were pre-incubated with different concentrations of nifedipine (10^{-10} to 10^{-6} M) or each of the synthetic compounds (10^{-9} to 10^{-5} M) for 20 min and exposed once again with KCl (40 mM). Finally, pIC_{50} (negative logarithm of the required concentrations of the compounds to achieve half-maximal relaxation) and R_{max} (percent of compounds-evoked maximum relaxation at studied concentrations) achieved for each compound was compared with that of nifedipine.

Results: Calculated pIC50 value of nifedipine to inhibit KCl-induced contraction was significantly greater than those of synthetic compounds, and the R_{max} value of nifedipine at studied concentrations was also superior compared to the synthetic compounds.

Conclusion: The results of our study revealed that some of the pyranopyrazole derivatives did have vasorelaxant activity on isolated rat thoracic aorta, and they may provide valuable therapeutic intermediation for the treatment of cardiovascular disease

Keywords: Pyranopyrazole, Thoracic aorta,vasorelaxant activity, nifedipine

The therapeutic effects of chicory seed aqueous extract on cardio-metabolic profile and liver enzymes in nonalcoholic fatty liver disease; a double blind randomized clinical trial

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Introduction: As diabetes and obesity increase worldwide, non-alcoholic fatty liver disease (NAFLD) becomes a more serious public health threat.
Objectives: The aim of this study was to assess the effects of chicory seed aqueous extract on the treatment of NAFLD.
Participants and Methods: The 60 patients with NAFLD who referred to Zanjan Metabolic Disease Research Center between March 2016 and April 2017 were allocated into treatment and placebo groups, randomly. The participants in the treatment group (n=30) were scheduled to consume 8 ml of chicory seed syrup (made by soaking 100 grams of dried seeds in 1 Liter of boiling water) twice daily for a 12-week time period. The patients in control group received identical placebo syrup in the same order. The SPSS software version 22.0 (SPSS Inc., Chicago IL., USA) and the ANCOVA test, chi- square test, independent t-test and paired t-test were used for data analysis. P-value < 0.05 was considered statistically significant.
Results: The BMI, liver enzymes, FBS, HbA1C, fatty liver grading and all the indices of lipid profile decreased significantly in chicory group (all p-values<0.001). The shifting change in fatty liver grading was also significant in treatment group as compared to control group.
Conclusion: The findings of this study support the application of chicory seed in the treatment of NAFLD due to the helpful effects on the metabolic indices of the disease.
Trial registration: Registration of trial protocol has been approved in Iranian Registry of Clinical Trial (identifier: IRCT2016061228411N1; https://en.irct.ir/trial/23063)
Keywords: Chicory, Non-alcoholic fatty liver disease, Cardiometabolic risk factors
Key point
Our study showed that the positive effects of chicory seed syrup on cardiometablolic profile and liver enzymes in patients affected by NAFLD and may be considered as a future therapeutic option.

چاقی مرکزی و عارضه ی قلبی عروقی همراه با آن: یک مطالعه مقطعی مبتنی بر جمعیت

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زمینه و هدف: افزایش شیوع چاقی یک چالش مهم بهداشت عمومی در سرتاسر جهان است. چاقی مرکزی، عامل خطر مهمی برای بیماری‌های مزمن از جمله بیماری های قلبی عروقی است. این مطالعه با هدف بررسی رابطه‌ی بین چاقی مرکزی و عارضه ی قلبی عروقی در شرکت کنندگان ۴۰ تا ۷۰ سال از خرامه در ایران انجام شد.

روش کار: این مطالعه مقطعی بر روی همه ۱۰۶۶۳ شرکت کننده ۴۰ تا ۷۰ سال فاز اول مطالعه کوهورت خرامه انجام شد. بر اساس تعریف(IDF)، دور کمر(WC) در مردان مساوی و بیشتر از cm۹۴ و در زنان مساوی و بیشتر از cm۸۰ به عنوان چاقی شکمی(مرکزی) در نظر گرفته شد. بیماری قلبی عروقی شامل: بیماری های ایسکمیک قلبی(نارسایی قلبی و آنژین)، سکته ی قلبی و سکته ی مغزی می باشد. با استفاده از تحلیل رگرسیونی، ارتباط چاقی مرکزی با عارضه ی قلبی عروقی در سطح معنی داری ۰/۰۵ و با استفاده از نرم افزار Stata ورژن ۱۶مشخص شد.

نتایج: از کل جمعیت مورد مطالعه (۷۳/۵٪)۷۸۴۷ نفر چاقی شکمی(مرکزی) داشتند. در همین مطالعه (۱۱/۴٪)۱۲۲۲ نفر بیماری قلبی عروقی داشتند. شیوع بیماری قلبی عروقی در گروه های سنی متفاوت، اختلاف آماری معناداری را نشان داد($P<0/001$)، به طوریکه بالاترین شیوع مربوط به گروه سنی بالاتر از ۶۰ سال بود. با کنترل مخدوشگرها کسانی که چاقی مرکزی دارند، شانس داشتن بیماری قلبی عروقی ۱۹ درصد بیشتر از افرادی است که چاقی مرکزی ندارند($P<0/026$).

بحث و نتیجه گیری: در این مطالعه در کسانی که چاقی مرکزی داشتند، شانس داشتن بیماری قلبی عروقی بیشتر بود. مطالعات مختلفی نشان داده اند، چاقی مرکزی در مقایسه با چاقی عمومی عامل خطر قوی تری برای بیماری قلبی عروقی است. لذا این مطالعه می تواند به ایجاد مداخلات کارآمد و تمرکز سیاست گذاران نظام سلامت برکنترل چاقی مرکزی و عارضه ی قلبی عروقی مرتبط، کمک کند.

واژه های کلیدی: چاقی مرکزی، بیماری های قلبی عروقی، مطالعات کوهورت، ایران

Predictive Factors of recurrent heart attack in Patients with Myocardial Infarction: a comprehensive study of various factors

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Background: Myocardial infarction (MI) is one of the most common presentations of coronary artery diseases that the age of its prevalence is decreasing. Survivors of MI are at an increased risk of recurrent MI. This study aimed to determine the frequency of recurrent MI and its Predictive factors in patients with MI.

Methods: This analytical cross-sectional study was conducted on 398 patients with MI that referred to Dr.Heshmat hospital in Rasht as the exclusive heart center in Guilan province (Northern Iran). Convenience sampling was done using a valid 6 part questionnaire including demographic information, patient's desire to improve knowledge, adherence to the Mediterranean diet, patients' awareness of factors predisposing to re-MI, depression status, and adherence to the therapeutic regimen. Data were analyzed by descriptive statistics and analytical statistics in SPSS-V.21, considering the significance level of $P \leq 0.05$.

Results: In Logistic regression analysis by LR method, illness duration (OR=0.97, 95% CI=0.95-0.99), history of receiving education (OR=0.1, 95% CI=0.02–0.7), MI type (OR=0.04, 95% CI=0.01–0.34 and OR=0.006, 95% CI=0.001–0.1, respectively Ant-MI and Post-MI than NSTEMI) and level of patients' awareness of predisposing factors to MI occurrence (OR=7.31, 95% CI=1.17–45.71, moderate level than good level) were identified as predicators of re-MI.

Conclusion: The main achievement of this study request the attention of policymakers and planners that considering the necessity of applying educational programs related to factors affecting the frequency of recurrent MI, which can improve all aspects of people living with MI.

Keywords: Myocardial infarction, Heart attack, Recurrent, Patients

رابطه‌ی میان تظاهرات بالینی سندروم کرونری حاد و سن: مرور روایی

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زمینه و هدف: سندروم کرونری حاد (ACS) یکی از مهمترین چالش های سلامت در سراسر جهان محسوب می‌شود. تظاهرات بالینی، مهم‌ترین معیار تشخیصی در بیماری عروق کرونر است. هدف از این مقاله بررسی رابطه‌ی میان تظاهرات بالینی ACS و سن است.

روش: با استفاده از Mesh، کلیدواژه های Diagnosis, age, Symptom, Acute Coronary Syndromeدر پایگاه های اطلاعاتی Google Scholar, Elsevier, PubMed و springer برای بازه زمانی ۲۰۱۱ تا ۲۰۲۱ جستجو شدند. ۴۳ مقاله یافت شد که پس از بررسی، ۲۱ مقاله جهت نگارش مقاله استفاده شد.

یافته‌ها : علائم این بیماری شامل درد قفسه سینه (شایع‌ترین علامت)، تنگی نفس، تپش قلب، تعریق، سکسکه، ضعف، خستگی و تهوع است که درد و تعریق با سن رابطه عکس دارد، هر چه سن بالاتر می‌رود درد و تعریق کاهش می‌یابد. بیماران جوان، اغلب دارای سابقه خانوادگی، سیگاری یا چاق بوده‌اند. حالی که بیماران مسن بیشتر سابقه دیابت، فشار خون بالا و بیماری قلبی داشتند. نارسایی قلبی و فیبریلاسیون دهلیزی نیز از عوارض شایع در طول بستری در بیمارستانها بوده که بطور چشمگیری با افزایش سن، افزایش داشته است.

بحث: با توجه به این که شدت تظاهرات وابسته به سن در بیماران متفاوت است، باید با در نظر گرفتن این تفاوت‌ها، هرچه سریع‌تر این تظاهرات را تشخیص و سپس اقدامات مناسب را انجام داد. البته سهوا بیمارانی با درد سینه غیرقلبی در بخش قلب بستری شده بودند که توصیه می‌شود با فراهم کردن امکانات مناسب در بخش اورژانس، جهت تشخیص قطعی اولیه، از این امر جلوگیری شود.

واژه‌های کلیدی: سندرم حاد کرونری، تظاهرات بالینی، سن

Metabolic syndrome and Coronary artery disease

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Metabolic syndrome is a cluster of conditions that occur together, increasing your risk of heart disease, stroke and type 2 diabetes. These conditions include increased blood pressure, high blood sugar, excess body fat around the waist, and abnormal cholesterol or triglyceride levels.
Having just one of these conditions doesn't mean you have metabolic syndrome. But it does mean you have a greater risk of serious disease. And if you develop more of these conditions, your risk of complications, such as type 2 diabetes and heart disease, rises even higher.
Metabolic syndrome is of strong relevance to severity of ACS clinically and angiographically and more acute events in younger Iranian population

Investigating the Effect of Acupressure on the Patients' Anxiety Before Open-Heart Surgery: A Randomized Clinical Trial

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Background: Anxiety is a common complaint of patients before diagnostic or therapeutic invasive procedures, especially before open-heart surgery. The most well-known method to reduce anxiety is the use of sedatives, which have pronounced side effects.
Objectives: The purpose of this study was to determine the effect of acupressure on anxiety in patients undergoing open-heart surgery.
Method: This is a randomized clinical trial study conducted on 90 patients who were candidates for open-heart surgery. The patients were randomly assigned into either intervention or control groups. Acupressure intervention was applied at three real acupoints over two consecutive days in the intervention group. The control group received acupressure on sham points. We used Spielberger State-Trait Anxiety Inventory to assess anxiety in our study.
Results: The results showed that before acupressure, there was no statistically significant difference between state anxiety scores and intergroup traits (p-value > 0.05), and this difference was only significant in state anxiety after the second intervention. State and trait anxiety were significant before and after the intervention in the test group (p-value<0.05), but these changes in the control group did not show a statistically significant difference (p-value > 0.05). After completing the second phase of the intervention at the actual sites, systolic blood pressure (p-value ¼ 0.007) and heart rate (p-value ¼ 0.001) decreased significantly. However, acupressure did not have a significant effect on diastolic blood pressure in any of the groups (p-value >0.05).
Conclusion: Based on the results of this study, the application of acupressure in patients who are candidates for open-heart surgery can reduce their state anxiety.
Keywords: anxiety; acupressure; open-heart surgery

Assessment of the Painful and Anxious Procedures in the Open-Heart Surgical Intensive Care Unit and its Effect on the Hemodynamic Parameters: A Cross-Sectional Study

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Background and Aim: Postoperative anxiety and pain are still a common problem among intensive care patients, especially in the open-heart surgical Intensive Care Unit (ICU). Inadequate pain control can lead to increased sympathetic system activity, increased mortality and morbidity, prolonged hospital stays, and increased hospitalization costs. The aim of this study was to determine the painful and anxious procedures in the open-heart surgical ICU and its effect on hemodynamic parameters.
Methods: This cross-sectional study was conducted on 140 patients who were admitted in three open-heart surgical ICUs from two cardiac surgery hospitals in Shiraz, Iran from 2019 to 2000. Intensity of pain and anxiety were assessed using the Pain -Numerical Visual Scale (P-VNS) and the Anxiety—Numerical Visual Scale (A-VNS), before (as a baseline) and immediately after procedures, change of position, breathing exercises, change of dressing, removal of endotracheal tube, chest tube, venous line, arterial line, balloon pump catheter, and sampling were examined. The systolic and diastolic blood pressure and heart rate were recorded before and immediately after each procedure.
Results: Comparison of the mean pain scores in breathing exercises, change of position and removal of the chest tube and the mean anxiety scores for removing the endotracheal tube before and immediately after the procedure using paired t-test showed a statistically significant difference ($P<0.001$). Changes in hemodynamic parameters were also significant before and immediately after removal of the endotracheal tube and balloon pump catheter, position change and respiratory exercises ($P<0.001$).
Conclusion: Respiratory exercises and removal of the endotracheal tube were the most painful and anxious procedures in the ICU. Many patients still experience moderate to severe postoperative pain in the ICU, despite guidelines that make pain control an important priority in caring for critical patients. Managing pain and anxiety before any procedure can reduce the negative consequences and increase patient satisfaction. Therefore, managing pain and anxiety in ICU requires the use of a multidisciplinary approach. In this regard, it is necessary for health care providers to consider the management of pain as an important priority in ICU patients.
Keywords: Open Heart Surgery, Intensive Care Unit, Pain, Anxiety