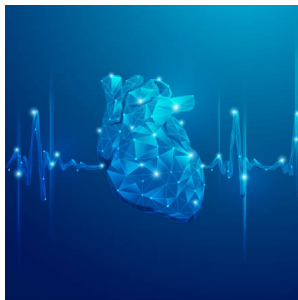


Keynote Forum September 19, 2022

Cardiology 2022



6th INTERNATIONAL CONFERENCE ON
**CARDIOLOGY HEART DISEASE
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Kanae Tsuno

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Peripheral coronary artery circulatory dysfunction in remote stage kawasaki disease patients detected by adenosine stress 13N-Ammonia myocardial perfusion positron emission tomography

Coronary peripheral circulatory disturbances in the remote stage of Kawasaki disease have been reported. In this study, of the 50 patients in the remote stage of Kawasaki disease who underwent coronary perfusion evaluation using adenosine-loaded 13N-ammonia positron emission tomography, 28 patients who did not have stenosis of $\geq 75\%$ in the left coronary artery underwent an evaluation for myocardial flow reserve (MFR) of the left anterior descending artery (LAD) and left circumflex artery (LCx). Clinical findings were compared between patients with normal (≥ 2.0) and abnormal (< 2.0) MFRs. In the group with an abnormal MFR in the LAD, the responsiveness of the coronary vascular resistance to adenosine load decreased even in the LCx (3.50 ± 1.23 vs. 2.39 ± 0.25 , $p = 0.0100$). In the group with an abnormal MFR in the LCx, the responsiveness of the coronary vascular resistance in the LAD also decreased (3.27 ± 1.39 vs. 2.03 ± 0.25 , $p = 0.0105$) and the age of onset of Kawasaki disease tended

to be younger in the group with abnormal MFR in the LAD and LCx. We found that the peripheral coronary circulation was extensively impaired in the remote stage of Kawasaki disease, suggesting that an early onset of Kawasaki disease may affect the peripheral coronary circulation in later years.

Recent Publications

1. Coxsackievirus B5 Aseptic Meningitis in Infants in Chiba Prefecture, Japan, in 2016
2. Interleukin-1beta Inhibition Attenuates Vasculitis in a Mouse Model of Kawasaki Disease

Biography

Kanae Tsuno has graduated Nippon Medical School in March, 2013. She belongs to the department of pediatrics in Nippon Medical School Hospital and also works as a graduated school researcher.

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Scientific Tracks & Sessions September 19, 2022

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Cardiovascular Disease | Heart Failure | Heart Disorders | Coronary Artery Syndrome | Interventional Cardiology | Hypertension



Chair
Kanae Tsuno
Nippon Medical School | Japan

Session Introduction

Title: Down regulation of interferon gamma activation by macrophage antioxidant 7,8-Dihydroneopterin

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Title: A diuretic planner for management of diuretics in Heart Failure and fluid overload

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Title: Investigation of the molecular mechanisms underlying the antiatherogenic actions of kaempferol in human THP-1 macrophages

Maha Majeed Ayoub | King Abdulaziz University | Saudi Arabia

Title: Impacts of opium addiction on patterns of angiographic findings in patients with coronary artery syndrome

Shirin Sarejloo | Shiraz University of Medical Sciences | Iran

Title: Incidence and predictors of radial artery spasm during left Heart catheterization

Muhammad Waqas Mazhar | Armed Forces Institute of Cardiology | Pakistan

Title: A pre-experimental study to assess the effect of respiratory exercises on selected respiratory parameters among post operative coronary artery bypass grafting patients

Atul Lawrence | Rattan Professional Education College | Punjab

Title: Link between Insomnia and Hypertension

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**Down regulation of interferon gamma activation by macrophage antioxidant
7,8-Dihydroneopterin**

Siddarth Raajasekar¹ and Steven Gieseg²

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Human macrophages produce neopterin and 7,8-Dihydroneopterin in response to interferon gamma (IFN- γ) stimulation as a part of their inflammatory process. IFN- γ upregulates cyclohydrolase II to convert GTP to 7,8-Dihydroneopterin and upregulates IDO enzyme to breakdown tryptophan to kynurenine. 7,8-Dihydroneopterin reacts with and neutralises the oxidants superoxide and hyperchlorite with neopterin being the product. Neopterin is extensively used as a marker of inflammation in a range of clinical conditions. 7,8-Dihydroneopterin also down regulates CD36, the receptor responsible for macrophage uptake of the oxidised low-density lipoprotein. On this basis we have examined whether 7,8-Dihydroneopterin has an anti-inflammatory effect by altering the balance of various cytokines within inflammatory sites such as atherosclerotic plaques. Peripheral blood mononuclear cells (PBMCs) were prepared from whole blood by centrifugation over a lymph prep cushion. Cells were incubated in RPMI1640 with 10% human serum and the media was analysed by HPLC for neopterin, 7,8-Dihydroneopterin and Kynurenine.

The addition of IFN- γ to PBMCs caused a significant increase in total neopterin and neopterin formation. PBMCs pre-treated with 7,8-dihydroneopterin showed 70% reduction in neopterin levels in response to IFN- γ stimulation. Kynurenine production was also reduced by 33% after pre-treatment

with 7,8-Dihydroneopterin. Neopterin, the oxidation product of 7,8-Dihydroneopterin had no effect on the interferon- γ induced neopterin production but did reduce kynurenine levels by 80%.

7,8-Dihydroneopterin synthesis in response to interferon- γ is controlled by a feedback mechanism limiting the levels of 7,8-dihydroneopterin release by PBMC. This mechanism may provide an important control mechanism preventing over stimulation of the cells during inflammation.

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Biography

Siddarth is currently in his final year of his PhD. His research is on the inflammatory basis of cardiovascular disease. He has completed his masters in biotechnology from VIT university, Vellore, India.

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A diuretic planner for management of diuretics in Heart Failure and fluid overload

Lance Forbat, Sunil Lobo and Htain Lin

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Hear Failure (HF) is the most common cause of hospitalisation in patients over the age of 65. The main manifestations of the syndrome are symptoms resulting from vascular congestion (fluid overload). The use of diuretics is common in patients with heart failure (HF), to relieve the congestive symptoms. Diuretics are used to achieve and maintain euvolemic state (the patient's 'dry weight') with the lowest possible dose. This means that the dose must be adjusted, particularly after restoration of the dry body weight, to avoid the risk of dehydration, which leads to hypotension and renal dysfunction. Clinical incidences have been raised via Datix reporting with regards inappropriate management in a case of HF that led to profound Hypokalaemia and AKI. Thus, triggering awareness around the clinical requirements for managing such complex Heart Failure patients with the development of local care solutions such as a proposed 'Di-

uretic planner' – This has highlighted the need for a robust, multi-disciplinary Quality improvement project reviewing the effectiveness of a 'Diuretic planner' tool.

References

1. Palpitations: What are they and when should you be referred?

Biography

Lance Forbat has extensive experience in cardiology, with a broad background both in the NHS and private sector. He has experience in developing and providing cardiology services at several hospitals in the UK. Experience in managing all aspects of adult cardiology including angina, heart failure, arrhythmias and pacing. In addition to telemedicine, he aims to bring innovative cardiology services using new technologies, offering true "patient choice".

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Investigation of the molecular mechanisms underlying the antiatherogenic actions of kaempferol in human THP-1 macrophages

Maha Majeed Ayoub

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The major cause of mortality worldwide is cardiovascular disease (CVD) (WHO, 2015). Atherosclerosis, hardening and narrowing of arteries, caused by accumulation of fatty acids and lipids (cholesterol plaques) is a main reason of stroke, myocardial infarction and angina. Present therapies basically use statins like β -Hydroxy β -methylglutaryl-CoA for cardiovascular disease showed less than 70% efficacy and multiple side effects. To evaluate the impact of kaempferol, a natural medication, against an atherosclerotic cell model, we undertook an *in vitro* investigation. The researchers used cytotoxicity assays, Boyden chamber invasion assays and quantitative real-time PCR. Affymetrix microarrays were used to profile the entire transcriptome of kaempferol-treated cell lines and Partek Genome Suite was used to interpret the results. THP-1 macrophages were not cytotoxic to kaempferol. In comparison to the control, kaempferol reduced monocyte migration mediated by monocyte chemoattractant protein 1 (MCP-1) by 80%. MCP-1 (73.71-fold) and intercellular adhesion molecule 1 (ICAM-1, 2.47-fold) expression were both reduced in kaempferol-treated cells, according to qPCR results. For IFN- γ and IFN- γ + kaempferol-treated cells, we found 295

and 168 differentially expressed genes (DEGs), respectively. According to DEG pathway analysis, kaempferol exhibits anti-atherosclerosis and anti-inflammatory characteristics. Kaempferol is an effective and safe therapy for atherosclerosis.

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Biography

Maha Majeed Ayoub is in cell culture unit and experimental biochemistry unit, King Fahd medical research centre, King Abdulaziz university, Jeddah 21589, Saudi Arabia.

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Impacts of opium addiction on patterns of angiographic findings in patients with coronary artery syndrome

Shirin Sarejloo

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Opium, after tobacco, is the most abused substance in the Middle East, especially in Iran. The effects of opium use on coronary artery disease are indeed unclear. This study aimed to assess the association between opium use and angiographic findings in patients with acute coronary syndrome (ACS) diagnosis at Al-Zahra Heart Hospital, Shiraz, Iran.

Methods: In this case-control study, 170 patients admitted for coronary angiography were enrolled from 2019 to 2020. They were categorized into two groups based on their history: "nonopium" and "opium." SPSS (Version 26) was used to investigate the correlation between opioid addiction and the severity of coronary artery disease.

Results: The results of our study reveal that the mean age of the participants was 61.63 ± 9.07 . This study indicated that 49 (28.82%) patients were female and 121 (71.17%) were male. Our findings revealed that three-vessel disease was more frequent in non-opium (40; 47.05%) and opium (45; 52.94%) groups. There was a significant correlation between the severity of the second diagonal artery(D2) and right coronary artery (RCA) involvement and opium consumption. There

was a strong positive correlation between the location of the vascular lesion in the left circumflex artery and opium consumption.

Conclusion: Opium, as an independent risk factor for cardiovascular diseases, can have specific effects on angiographic findings in patients with coronary artery disease. Public health officials and politicians should arrange several programs to increase the general population's consciousness about opioid use and its consequences.

Biography

Shirin Sarejloo is a cardiologist with more than 14 years of experience working as a consultant cardiologist in teaching private and public hospitals in the management of emergency patients including MI, hypertension crisis, DVT, Abd HF. Bleeding tendencies due to warfarin toxicity, Dig toxicity and any arrhythmia management. Performing Coronary angiography, EST, TTE (Echocardiography), Blood pressure and EKG Holter monitoring.

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Incidence and predictors of radial artery spasm during left Heart catheterization

Muhammad Waqas Mazhar

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Objective: To determine the incidence of radial artery spasm and various predictors leading to radial artery spasm during coronary angiography/angioplasty in Armed Forces Institute of Cardiology/National Institute of Heart Diseases Rawalpindi. Study Design: Cross sectional study. Place and Duration of

Study: Department of Interventional Cardiology, Armed Forces Institute of Cardiology & National Institute of Heart Diseases Rawalpindi, from Aug to Nov 2020. Methodology: This study enrolled 272 patients who were to undergo the procedure of coronary angiography/percutaneous coronary intervention either already admitted or came for out-patient procedure. Coronary angiography/percutaneous coronary intervention was done via trans radial approach and the study participants were observed for development of radial artery spasm. The patients were managed according to the department protocol.

Results: The frequency of radial artery spasm was 30 (11%). No statistically significant association was found between radial artery spasm and various predictors such as age, hypertension and diabetes mellitus ($p>0.05$), except female gender ($p<0.05$)

Conclusion: Radial artery spasm is a common complication of trans radial approach for coronary angiography/percutaneous coronary intervention particularly in females undergoing the procedure.

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Biography

Muhammad Waqas Mazhar is currently working at Armed Forces Institute of Cardiology, Pakistan. He also got published many articles in the international journals and attended many conferences.

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A pre-experimental study to assess the effect of respiratory exercises on selected respiratory parameters among post operative coronary artery bypass grafting patients

Atul Lawrence

Rattan Professional Education College, Punjab

Objective: To assess and describe the effect of the Respiratory exercises on selected respiratory parameters among post operative coronary artery bypass grafting patients at Ace Heart and Vascular Institution of Shivalik Hospital, Mohali 2014-15.

Methods: Quantitative Experimental research approach., Pre experimental study (pre-test post-test design) was conducted on the effect of Respiratory Exercises on Selected Respiratory Parameters among 30 Post Operative Coronary Artery Bypass Grafting patients. Non probability convenient sampling technique was adopted to recruit samples. The selection and development of tool was based on "Protocol on respiratory exercises, protocol on selected respiratory parameters' assessment, Performa to record selected respiratory parameters".

Result: The effect of selected respiratory exercises on the respiratory parameter was calculated with the help of paired "t" test values and the mean difference of day 1 to day 4 (pre-test and post-test design) was calculated therefore it was found to be significant difference within the pre-test and post-test value.

Conclusion: The conclusion was drawn that the selected respiratory exercises have great impact on the selected respiratory parameters as it was improved the expansion of thorax, tidal volume and Spo₂. The selected respiratory exercises were helpful in speedy recovery and prevent post operative complication of study subjects. It was also found that respiratory exercises decrease the level of pain and adventitious breath sound.

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Biography

Atul Lawrence has completed his M.Sc. Nursing, Medical Surgical nursing in cardio vascular & thoracic nursing. He is working as an assistant professor in rattan professional education college, Mohali, Punjab.

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Link between Insomnia and Hypertension

Neha Haris

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Insomnia is a prevalent sleep disorder that is associated with a multitude of health consequences. Particularly, insomnia has been associated with cardiovascular disease and its precursors, such as hypertension and blood pressure (BP) non-dipping

Blood pressure (BP) varies over 24 hours. During normal sleep, BP typically decreases by 10% or more. Research suggests that disordered sleep, particularly sleep deprivation and obstructive sleep apnea, is associated with increased BP and risk of hypertension. Less is known about the relationship between insomnia and hypertension. Population-based studies have reported an association between insomnia symptoms and both prevalent and incident hypertension, particularly in the context of short sleep duration. Furthermore, a number of mechanisms have been proposed to explain the relationship between insomnia and hypertension. However, few studies have examined these proposed mechanisms and even fewer clinical trials have been conducted to determine if improved sleep improves BP and/or reverses a non-dipping BP pattern. The recent evidence suggests that the increasing prevalence of hypertension might be related both to an increased prevalence of insomnia and to the poor sleep quality/ duration. Additionally, anxiety that often accompanies sleep disorders is associated with increased BP, a known risk factor for cardiovascular events. This indicates that the pharmacotherapy for sleep disorders and insomnia may have beneficial effects on BP. Furthermore, several experimental studies have suggested that certain sleeping pills may decrease BP or SNS activity. However, only a few researchers have studied the association between hypertension and insomnia treatment and the impact of this treatment on BP.

Although long-term sleep loss is often secondary to somatic or psychiatric illness, it appears that insomnia may also play a central role in the pathogenesis of somatic illness and metabolic dysregulation. Insomnia has been particularly associated with cardiovascular diseases and its precursors such

as hypertension and non-dipping blood pressure (BP). Blood pressure physiologically decreases during sleep, a process known as dipping. Studies have shown that day-to-night and nighttime regulation of BP appears to be closely linked with autonomic changes happening during the wake, sleep cycle. This suggests that BP is especially sensitive to sleep disturbances. Hypersecretion of adrenocorticotropic hormone, cortisol and catecholamine has been reported in patients with insomnia symptoms, suggesting the over activation of the hypothalamic-pituitary-adrenal axis and sympathetic nervous system (SNS); which provides a biological basis for the co morbidity of insomnia and hypertension. The recent evidence suggests that the increasing prevalence of hypertension might be related both to an increased prevalence of insomnia and to the poor sleep quality/ duration. Additionally, anxiety that often accompanies sleep disorders is associated with increased BP, a known risk factor for cardiovascular events. This indicates that the pharmacotherapy for sleep disorders and insomnia may have beneficial effects on BP. Furthermore, several experimental studies have suggested that certain sleeping pills may decrease BP or SNS activity. However, only a few researchers have studied the association between hypertension and insomnia treatment and the impact of this treatment on BP. The drugs primarily used for insomnia treatment include benzodiazepines, non-benzodiazepines hypnotics, ramelteon and antidepressants such as doxepin. Benzodiazepines formed the mainline therapy for insomnia for many years. However, associated side-effects and addiction potential has restricted the use of benzodiazepines. Among non-benzodiazepines, zolpidem tartrate is the highly prescribed drug for the short term treatment of insomnia globally. Huang et al., demonstrated that zolpidem tartrate, through improvements in sleep quality, stress status and activation of the SNS, could significantly help the conversion of non-dippers to dippers. However, there is no data regarding the use of zolpidem tartrate in Indian patients suffering from co-morbid insomnia and hypertension. The present study was designed with the objective to obtain in-

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sights on the effectiveness and safety of zolpidem tartrate in Indian patients with insomnia and hypertension over a period of 21-days

The focus would be to treat insomnia with short term prescribed sedative-hypnotic drug so that the patient do not get addicted to the pill and he/she gets back to the regular sleep pattern.

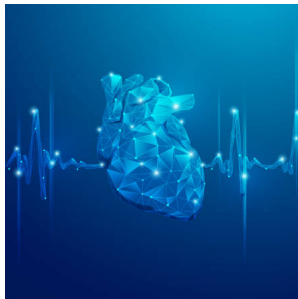
Biography

Neha Haris is a post-graduate student pursuing MSc in Cardiology and Stroke at the university of Hertfordshire, United Kingdom. She received a bachelor's degree in cardiopulmonary perfusion in the year 2017 from Dr. MGR University, India. Thereafter, she started practice in the year 2017 as a clinical assistant in cardiology at Dr Karnik's cardiac clinic. She pursued diploma in nutrition and dietetics in the year 2019 and started my own clinic. She got certified Clinical researcher and She has so far published research on "Link between Early Hypertension and Insomnia" in association with Abbott India limited in the year 2020.

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Young Researcher Forum

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Fractional flow reserve [FFR] guided stenting of left main coronary artery in acute coronary syndrome: A single centre experience

Mahes Ahire

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The present study assesses the clinical outcomes after left main coronary stenting, using clinical evaluation, angiography and Fractional Flow Reserve (FFR). A prospective observational study was conducted on 72 patients undergoing left main coronary artery (LMCA) stenting, transthoracic echocardiography, coronary angiography and percutaneous coronary intervention were done and FFR was recorded. At the end of 6 months, follow up check angiography, FFR study were performed. The stent was placed from LMCA to left anterior descending artery (LAD) artery among 45.83% of patients and 9.72% had from LMCA to Left circumflex artery. The mortality rate was 8.33%. The fractional flow reserve was 0.81 on an average ranging from 0.58 to 0.90. Relatively low incidence of major cardiac event was noted among patients with single vessel disease and ostial LMCA disease.

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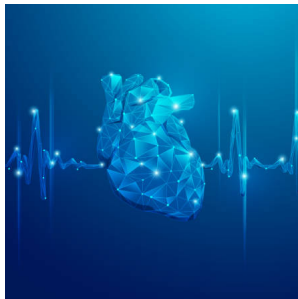
Biography

Mahes Ahire is currently working at SMBT Hospital as a interventional cardiologist. He has completed DrNB in interventional cardiology on 2020. He has completed MD degree in M.P. shah medical college, Jamnagar, India. He has completed MBBS in JMFs A.C.P.M. Medical College on 2010.

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Accepted Abstracts

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An alternative to transvenous lead extraction in selected patients with CIED Infections – A retrospective outcome study

Goutham Meda

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Cardiac implantable electronic devices (CIED) implants are rising in an older, more co-morbid population. The prevalence of CIED infection ranges from 1-4%. Whilst complete extraction of all transvenous hardware is recommended for infected, eroded or pre-eroding CIEDs, this approach is not without risk and may be unacceptable to some patients. Long term data on a more conservative strategy is lacking. We report on our experience of conservative management with pocket revision as a primary strategy in carefully selected patients. Method: A retrospective review of all CIED revision procedures at a large tertiary centre, over a 7-year period was undertaken with a mean follow up of 39 months. Results: 86 patients underwent 96 revision procedures. 7 patients required further revisions and 13 went on to undergo CIED extraction by the end of follow up. Overall mortality at 12 months was 8.1%, increasing to 24.4% at end of follow up. Results: There was no in hospital mortality and all patients were alive at 30 days. Overall, 7 (8%) patients had a repeat procedure (including 1 who underwent 3 revisions) and 13 (15%) went on to undergo CIED extraction in the follow up period. Overall, 7 (8.1%) deaths occurred within 12 months of revision. 21 (24.4%) patients died in the follow up period. A higher proportion of patients presenting with erosion died within 12 months of revision (16.67% vs 4.84%). 25% with an eroded device and 11% with a pre-eroding device undergoing revision required an extraction during the follow up period. There was no in hospital

mortality and at 30 days all patients were alive in both groups. At 12 months, more patients in the erosion group had died compared to the pre-erosion group (17% vs 5%, $p=0.16$). This trend continued over the medium term follow up (42% vs 18%, $p=0.04$). At the last available follow up, 13 (15%) patients went on to a full system extraction; 6/24 (25%) in the erosion group and 7/62 (11%) in the pre-erosion group. Conclusion: Our data provides important outcome information on an alternative strategy to lead extraction in carefully selected patients where the risk of extraction is perceived to be unacceptable. The absence of systemic infection appears to predict better outcomes than previously reported and over two-thirds of patients remained complication free at 12 months.

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Left ventricular (LV) diastolic dysfunction is a hallmark of Heart Failure with preserved Ejection Fraction (HFpEF)

Yen Chin Koay

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Left ventricular (LV) diastolic dysfunction is a hallmark of Heart Failure with preserved Ejection Fraction (HFpEF), an escalating global health challenge. We demonstrated selective depletion of the oxidized form of nicotinamide adenine dinucleotide (NAD⁺) and the rate-limiting enzyme of the NAD⁺ biosynthetic salvage pathway, nicotinamide phosphoribosyl transferase (NAMPT), in human myocardium with LV diastolic dysfunction. Despite reduced expression of NAMPT protein, we showed that NAD⁺ can be replenished in human myocardium with diastolic impairment ex vivo and the murine HFpEF model. In a murine model of metabolic alteration-driven HFpEF [a combination exposure to high-fat diet (HFD) and L-N G -Nitro arginine methyl ester (L-NAME)], we compared

the benefits of NAD⁺ precursor supplementation versus dietary intervention. We tested NAD⁺ repletion by nicotinamide riboside (NR) supplementation using two clinically-relevant strategies: 1) Prophylactic NR repletion before HFpEF onset and 2) Therapeutic NR repletion after the development of HFpEF. We found that dietary intervention restored myocardial insulin-dependent glucose uptake and glycolysis but did not rescue HFpEF. In contrast, both NAD⁺ repletion strategies prevented or rescued HFpEF, respectively, plausibly due to restoration of myocardial energetics, mitochondrial respiration and upregulation of antioxidant defence.

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Intensive care support required for patients admitted for primary percutaneous coronary intervention (PPCI)

Mohammed Babiker

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Primary percutaneous coronary intervention (PPCI) has proven to be the most effective reperfusion therapeutic strategy compared to other options like thrombolysis. The outcome of ST segment elevation myocardial infarction has significantly improved over last couple of years as the result of PPCI. Despite substantial mortality improvement, there is small number of patients who requires Intensive care support, unfortunately mortality is very high among this group of patients.

Aim/Objectives: To determine requirement for intensive care support for patients admitted to the Cath lab for primary Percutaneous Coronary Intervention (PPCI).

Methodology: Retrospective study of all patients admitted for PPCI who requires different kind of intensive care support between 15th March 2014 to 15th September

2017 were involved.

Result: During study period 434 PPCI were performed and 44 patients were required intensive care support incidence (10.1%). Mortality among those patients was high reaching (56.6%). Most of them died in ICU in (68%) compared to (24%) died in Cath lab. The most common reason for intensive care involvement was cardiac arrest representing (59%) of total patients who requires support.

Conclusion: Patients who require Intensive care involvement pre or post (PPCI) has high mortality rate compared to patient who had uncomplicated (PPCI). This can be used as prognostic indicator for outcome of PPCI in patients who presented with ST segment elevation myocardial infarction who require intensive care support.

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