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Review Article **Published Date:-2023-08-28 11:43:18**

Faecal Transplant Therapy: A Promising Treatment Modality for Cardiovascular Diseases

Cardiovascular diseases (CVD) are considered as “lifestyle” diseases and so far “No unified procedure” or medicines are effective in the management of this group of diseases. Researchers and clinicians have indicated that no safe therapeutic window is available in therapeutics at present. Recent research showed that gut microbiota are effective in managing lifestyle diseases therefore we introduced the influence of gut microbiota in the prognosis of the CVDs. Faecal transplant therapy(FMT) has been anticipated to treat many diseases similar to recurrent bacterial Clostridioides difficile infection which has been used worldwide. Recently, FMT was tried on an animal model to treat CVDs, and recent human trials that were tried to manage CVDs in humans by FMT showed encouraging results. The mechanism of action of transplanted bacteria to manage CVDs in the human population is also discussed. In-depth knowledge on the pros and cons of FMT will pave the way to standardize the procedure once the lacuna existing at present in treating CVDs, is paved, this technology will be useful for the masses.

Case Report **Published Date:-2023-08-23 11:36:38**

Pneumopericardium: A Rare Complication of Antireflux Surgery

Pneumopericardium is a rare clinical entity, occurring in the setting of thoracic trauma, malignancies, or mechanical ventilation. Very few cases report pneumopericardium as a complication of gastrointestinal tract surgery. Signs and symptoms may be frustrating, ranging from asymptomatic to chest pain, sepsis, hemodynamic instability, pericarditis, or even cardiac tamponade. Clinical pathognomonic signs of pneumopericardium include pericardial metallic tinkling friction rub and mill wheel murmur. Diagnostic work-up includes electrocardiogram, chest radiography, and, computed tomography imaging. A gastro pericardial fistula should be considered a rare differential diagnosis for acute chest pain in patients with a history of gastroesophageal surgery. Rapid recognition and treatment avoid life-threatening complications. The successful outcome of gastro pericardial fistula treatment depends on both emergency and definitive surgical management. The survival rate with conservative management is poor.

We present the case of a 78-year-old patient suffering from pneumopericardium and pericardial infusion, due to a fibrotic fistula between the Nissen’s valve, occurring 10 years after redo antireflux surgery. Treatment included broad-spectrum antibiotics, and emergency surgery for pericardial drainage, biopsy of the valve’s defect, suture, and omentoplasty.

Retrospective Study **Published Date:-2023-08-14 10:23:25**

Evaluation of Preoperative Cardiology Consultations: Incidence, Characteristics and Implications for Perioperative Management

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Background: This retrospective study examines the importance of preoperative cardiology consultations in optimizing patient care and anesthesia surgical perioperative management.
Methods: The study includes 7,756 patients from the Department of Anesthesiology at Mohammed V Military Teaching Hospital. Out of these, 122 patients were referred to cardiology consultations. Demographics, surgical specialties, reasons for referral, diagnostic tests, and interventions were analyzed.
Results: Referred patients (average age 61.45 years) were mainly over 65 years old, with 59.01% being male. Common surgical specialties seeking consultations were abdominal surgery (30.327%), orthopedic surgery (26.230%), and urological surgery (19.672%). Hypertension, dyslipidemia, and diabetes were prevalent risk factors. Most patients were classified as ASA II (50%) or ASA III (27.04%), with NYHA I (61.5%) or NYHA II (31.2%) classifications. Referrals were due to ECG abnormalities (41.0%), routine evaluation (19.7%), and history of myocardial infarction or previous coronary angiography (39.3%).
Discussion: Preoperative cardiology consultations accounted for 1.57% of all pre-anesthesia clinic patients. They were vital in assessing and managing cardiovascular risks, consistent with previous studies. The impact of these consultations was evident in optimizing patient management through treatment plan adjustments and interventions.
Conclusion: Preoperative cardiology consultations play a crucial role in identifying and managing cardiovascular risks, contributing significantly to patient care and improving perioperative management. Further research should evaluate long-term outcomes and cost-effectiveness across different patient populations.

Case Report **Published Date:-2023-08-01 16:46:09**

Transcatheter Aortic Valve Implantation in Two High-Risk Patients with Low Coronary Ostial Heights Using the Novel Balloon-Expandable Myval Valve

The treatment of severe aortic stenosis by transcatheter aortic valve implantation (TAVI) is challenging in patients with high-risk coronary anatomy that is predisposed to iatrogenic or delayed coronary obstruction. Hence, the evidence on performing TAVI with adequate coronary protection with or without deploying a stent needs to be accumulated. We report two cases of TAVI performed in patients with low coronary heights, wherein a “wire only” strategy was used to provide coronary protection along with the implantation of a novel balloon-expandable Myval THV. The first patient underwent a valve-in-valve TAVI, while the second patient underwent the replacement of a native bicuspid Type 1A valve. This case series presents two high-risk TAVI cases wherein a guide extension catheter and a supportive coronary guidewire provided sufficient coronary protection. None of the cases required any rescue revascularization and no incidences of a new pacemaker implantation were reported.

Case Report **Published Date:-2023-07-24 14:09:05**

Sudden Cardiac Death in a Neonate Due to Bilateral Absence of Coronary Artery Ostium

Introduction: Congenital heart disease is a leading cause of neonatal mortality linked to birth defects. Despite the widespread availability of prenatal screenings, detection rates remain low. Accurate early detection of these lesions is pivotal to reducing neonatal morbidity and mortality.
Methods: In this case, we present a neonate who experienced sudden cardiac death due to a rare, undiagnosed congenital cardiac anomaly - the bilateral absence of coronary artery ostium.
Discussion: This case highlights the importance of prenatal detection of congenital cardiac anomalies. While fetal echocardiography is frequently utilized, it only identifies CHD in 36-50% of cases. This is attributed to inadequate imaging procedures, varied operator skills, and regional discrepancies. Early detection of severe CHD is essential for specialized treatment, thereby mitigating neonatal health risks and improving survival rates.
Conclusion: Prenatal detection of CHD, especially coronary anomalies, continues to pose significant challenges. There is a pressing need to establish and enforce standardized protocols for fetal echocardiography aimed at these anomalies. To enhance care and improve outcomes, a joint effort between academic institutions and community centers is encouraged.
Learning Objectives:
- Congenital coronary artery anomalies are a significant cause of sudden cardiac death in children.
- The absence of a coronary artery ostium is known to be associated with other congenital heart diseases, particularly pulmonary atresia with an intact ventricular septum. However, isolated coronary disease has also been reported in this case.
- Prenatal echocardiography is a valuable tool for diagnosing congenital heart disease. However, certain limitations may be encountered when diagnosing coronary artery anomalies.

Short Communication **Published Date:-2023-07-12 10:10:17**

Noninvasive Cuffless Blood Pressure Monitoring. How Mechanism-Driven and Data-Driven Models Can Help in Clinical Practice

Continuous noninvasive cuffless blood pressure (BP) monitoring is essential for early detection and treatment of hypertension. In this paper, we provide an overview of the recent advancements in cuffless BP sensors. These include contact wearable sensors such as electrocardiography (ECG), photoplethysmography (PPG), contact non-wearable sensors such as ballistocardiography (BCG), and contactless sensors such as video plethysmography (VPG). These sensors employ different measuring mechanisms such as pulse arrival time (PAT), pulse transit time (PTT), and pulse wave analysis (PWA) to estimate BP. However, challenges exist in the effective use and interpretation of signal features to obtain clinically reliable BP measurements. The correlations between signal features and BP are obtained by mechanism-driven models which use physiological principles to identify mathematical correlations, and data-driven models which use machine learning algorithms to analyze observational data to identify multidimensional correlations. On the one hand, applying mechanism-driven models to non-linear scenarios and incomplete or noisy data is challenging On the other hand, data-driven models require a large amount of data in order to prevent physically inconsistent predictions, resulting in poor generalization. From this perspective, this paper proposes to combine the strengths of mechanism-driven and data-driven approaches to obtain a more comprehensive approach, the physiology-informed machine-learning approach, with the goal of enhancing the accuracy, interpretability, and scalability of continuous cuffless BP monitoring. This holds promise for personalized clinical applications and the advancement of hypertension management.

Research Article **Published Date:-2023-06-26 11:48:20**

Early Outcomes of a Next-Generation Balloon-Expandable Transcatheter Heart Valve - The Myval System: A Single-Center Experience From Serbia

Transcatheter aortic valve implantation (TAVI) is one of the most effective treatments for severe aortic valve stenosis (AVS). Different genres and generations of transcatheter heart valves (THVs) are accessible, offering operators an opportunity to choose a patient-tailored device. In this single-center study, we present the outcomes of Serbian patients treated with next-generation Myval THV for severe symptomatic AVS. Myval THV was implanted in all consecutive patients who underwent TAVI at the Dedinje Cardiovascular Institute of Belgrade, Serbia between October 2020 and September 2021. The primary endpoint was device success on day 30. Secondary endpoints included 30-day all-cause mortality, cardiovascular death, stroke, moderate/severe paravalvular leak (PVL), and new permanent pacemaker implantation (PPI). TAVI was performed as per the European Society of Cardiology guidelines. The study comprised thirteen patients, aged 72±13 years with mean EuroSCORE (7.17%) and Society of Thoracic Surgeons (2.72%,) scores who underwent TAVI successfully with 92.3% using the percutaneous approach. Myval THV intermediate and extra-large sizes were implanted in 46% and 15% of patients, respectively. This acute procedure success rate was 100%. The primary composite endpoint of early device success was achieved in all patients. None of the patients had clinically significant aortic regurgitation or moderate/severe PVL. No patient experienced stroke, contrast-induced acute kidney injury, device-related vascular complications, or a new PPI. The all-cause mortality rate at 30 days was 0%. Myval THV system demonstrated a favorable safety/efficacy profile within 30 days post-procedure at a single center in Serbia. This is the first report of my experience with Myval THV from Serbia.

Mini Review **Published Date:-2023-06-24 16:28:33**

The Role of Advanced Imaging in Paediatric Cardiology: Basic Principles and Indications

Tissue Doppler Imaging and Speckle Tracking Echocardiography are newer echo-cardiographic modalities, that assess myocardial and valvular function in congenital and acquired heart diseases in childhood. In addition, cross-sectional imaging including Cardiac Magnetic Resonance (CMR) and Cardiac Computed Tomography has been widely used over the last decade in paediatric cardiology, in order to evaluate intra-cardiac and extra-cardiac anatomy. Cardiac Magnetic Resonance particularly allows detailed analysis of myocardial function, and shunt quantification and has applications even in fetal life. This mini-review summarizes the basic principles of the above-advanced modalities and highlights their main indications and clinical applications in childhood.

Thesis **Published Date:-2023-06-20 16:24:49**

Vitamin D Deficiency and its Correlation with the Severity of Heart Disease in Dilated Cardiomyopathy Patients

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Background: Cardiomyopathy is primarily a disorder of the cardiac muscle that causes myocardial dysfunction and is not the result of disease or dysfunction of other cardiac structures, systemic arterial hypertension and valvular stenosis or regurgitation.
Aim: The present study aimed to determine the prevalence of vitamin D deficiency and its correlation with the severity of heart disease in patients with dilated cardiomyopathy (DCMP).
Method: 70 ECHO-proven DCMP cases were enrolled from the medicine/ cardiology department of LHMC & associated hospitals and ABVIMS & Dr. RML Hospital, New Delhi from November 2019 to October 2021. DCMP patients with ages more than 18 years who were willing to give consent and does not meet any of the exclusion criteria were enrolled in this study.
Results: Mean age of idiopathic DCMP patients was 48.3 ± 15.2. There were more males 48 (69%) than females 22 (31%). The mean ejection fraction was 26.6 ± 7.3, while the mean fractional shortening was 17.6 ± 3.1. Vitamin D deficiency was observed in 90% of patients, among which 68.5% were having moderate vitamin D deficiency and 10% were having severe vitamin D deficiency.
Conclusion: In our study, vitamin D levels were inversely correlated with the severity of heart disease in DCMP patients.

Observational Study **Published Date:-2023-05-16 14:25:55**

Myocardial fibrosis in aortic stenosis: comparison between clinical data, laboratory, echocardiography, and cardiac magnetic resonance

Introduction: Patients with aortic stenosis often develop hypertrophy and fibrosis, regardless of symptoms. Cardiac Magnetic Resonance (CMR) represents the gold standard for the evaluation of fibrosis despite numerous limitations: cost, availability, atrial fibrillation, claustrophobia, kidney failure or inability to apnea.
Purpose: The aim is to validate the role of echocardiographic parameters, such as Global Longitudinal Strain (GLS), as early markers of fibrosis. Clinical and laboratory data, particularly B-type Natriuretic Peptide (BNP), were also analyzed.
Material and methods: In our study we recruited 33 patients with severe aortic stenosis, correlating echocardiographic values of GLS with the qualitative analysis of Late Gadolinium Enhancement (LGE) and the quantitative analysis of T1 mapping of CMR.
Results: 70% of patients with an alteration of GLS had LGE+. Univariate logistic regression shows that the factors associated with the presence of LGE on CMR are hypertension (p = 0.043), GLS (p = 0.032), and elevated BNP values (p = 0.021); for GLS, Odds Ratio (OR) is 5 so the chance of finding fibrosis on CMR increases 5 times in presence of an altered GLS. The multivariate analysis confirms the association with impaired GLS values (p = 0.033) and hypertension (p = 0.025), but not with elevated Pro-BNP values.
Conclusion: In patients with severe aortic stenosis, the association between GLS, LGE, and T1 mapping can help identify earlier those patients with structural changes caused by the disease, who could benefit from early intervention. It remains to be established how the presence of these alterations has a role in determining the intervention time and the outcome of these patients.

Research Article **Published Date:-2023-05-15 14:14:55**

Security and performance of remote patient monitoring for chronic heart failure with Satelia® Cardio: First results from real-world use

Background: Since 2019, remote patient monitoring (RPM) for patients with chronic heart failure (CHF) has been supported by the European Society of Cardiology. However, real-world data on the use of such solutions has been limited and not primarily based on patient-reported outcomes. The aim of this study was to describe the Satelia® Cardio solution in France within the French ETAPES funding program and assess the security and performance of its clinical algorithm.
Methods: A retrospective observational study was conducted on CHF patients monitored by RPM through Satelia® Cardio. From September 1, 2018, to June 30, 2020, patients were included if they had completed over six months of follow-up. The risk of a possible CHF decompensation was categorized by the system in three levels: green, orange and red. The algorithm security and performance were assessed through the negative predictive value (NPV) of the prediction of hospitalization of a patient within seven days.
Results: In total, 331 patients were included in this study with 36,682 patient self-administered questionnaires answered. Patients were mostly males (70.4%) and had a mean age of 68.1 years. The mean left ventricular ejection fraction (LVEF) was 35.4% (± 12.3) and 73.3% of patients had a LVEF ? 40%. The questionnaire response rate was 90.9%. A green status was generated for 95.3% of answers. There were 4.5% (n = 1,499) orange alerts and 0.2% (n = 74) red alerts. Overall, 92.1% of patients had at least one CHF related hospitalization and 31.7% (n = 105) of these cases were non-scheduled. The NPV at seven days was 99.43%.
Conclusion: Satelia® Cardio is a feasible, relevant and reliable solution to safely monitor the cohorts of patients with CHF, reassuring cardiologists about patient stability.