

systolic pulmonary artery pressure, serve as important prognostic indicators for predicting clinical outcomes.

**Conclusion** A comprehensive assessment of these factors can enhance the ability to predict outcomes and tailor treatment strategies for PPCM patients. Close monitoring of these parameters is crucial for improving clinical outcomes and optimizing the management of PPCM.

#### APCU 15 AWARENESS OF HEART ATTACK SIGNS AND SYMPTOMS AMONG PUBLIC IN SABAH HEART CENTRE

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**Introduction** Heart attack, a worldwide phenomenon, remains one of the leading causes of mortality among adults. In Malaysia, it accounts for 17.0% out of 109,155 medically confirmed deaths. This condition can occur suddenly or may be preceded by pre-heart attack symptoms that appear several hours or even days before the event. It is essential for individuals to recognize the signs and symptoms of a heart attack, which include chest pain, light-headedness, fainting, shortness of breath, nausea, vomiting, and fatigue, to ensure they can seek immediate medical attention. This study aims to assess the level of public awareness regarding the signs and symptoms of a heart attack and determine the relationship between this awareness and demographic factors.

**Methods** A quantitative, cross-sectional study was conducted among 113 members of the general public at Sabah Heart Centre. The sampling method used was simple random sampling. Data were collected using a questionnaire and analysed using IBM SPSS version 26.

**Results** This study revealed that the majority of the public (70.8%,  $n = 80$ ) are aware of the signs and symptoms of a heart attack. However, there is a notable lack of awareness regarding discomfort in the jaw, neck, and back, sudden lethargy, and sudden loss of vision in one or both eyes (all  $< 70\%$ ). A significant relationship was also reported between age and the level of awareness ( $p = 0.009$ ).

**Discussion** Timely reperfusion therapy for heart attack victims is critical to improve survival rates. The results of this study are consistent with previous research, which identified poor awareness of heart attack signs and symptoms as a contributing factor to delayed treatment and higher mortality rates. Notably, respondents were aware that chest pain is a symptom. However, they were less familiar with other key symptoms. This suggests that more effective health education programs are required to raise awareness of the signs and symptoms of a heart attack. Hence, digital platforms and social media are recommended as effective channels to disseminate information related to heart health to all segments of the population.

**Conclusion** Nearly 30% of the respondents exhibited poor awareness of the signs and symptoms of a heart attack. Therefore, efforts to enhance awareness should be expanded through multiple channels, including mass media, community outreach events, healthcare provider education, and digital platforms.

#### APCU 16 A RETROSPECTIVE STUDY OF PERMANENT PACEMAKER IMPLANTATION IN A UNIVERSITY HOSPITAL

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**Introduction** Permanent pacemaker implantation is a common procedure to manage various cardiac rhythm disorders. Understanding the prevalence and the short- and long-term outcomes associated with pacemaker implantation is crucial for optimizing patient care and improves prognosis.

**Objective** This study examined the clinical outcomes and complications associated with the implantation of pacemaker devices in HPUSM.

**Methods** This is a retrospective, single centre study conducted on 151 consecutive patients who had pacemaker implanted between 2014–2024. Sociodemographic factors, clinical characteristics, and complications data were extracted from medical record unit. The chi-square test or Fisher's exact test was performed to evaluate factors associated with complications.

**Results** Majority of patients were between 61–80 years (66.9%), and (62.9%) were males. Hypertension was the most common comorbidity (68.9%), followed by hyperlipidaemia (56.3%), ischemic heart disease (41.7%), and diabetes mellitus (39.7%). Complete heart block was the main indication for pacemaker implantation (55.6%), followed by sick sinus syndrome (34.4%). Dual-chamber pacemaker in DDD mode was the most commonly utilized (92.1%) and majority of RV lead were placed at RV apex (78.1%) and the rest were implanted in the alternate site. The overall complication rate was 12.5%, including lead dislodgement 4%, infection 1.3%, pneumothorax 1.3%, hematoma 0.7%, cardiomegaly 2.6%, and heart failure 2.6%. In the apical group, there were four cases of lead dislodgement, compared to two cases in the alternate site group ( $p = 0.391$ ). Additionally, four patients in the apical group experienced heart failure ( $p = 0.369$ ) and no case of heart failure in alternate site. One case of hematoma was reported in the apical group, and there were two cases of pacemaker infection in the same group ( $p = 0.610$ ). For pneumothorax, one case was observed in each group ( $p = 0.390$ ).

**Conclusion** This study established a pacemaker implantation and follow-up service at our institution, supported by a comprehensive database. The primary indication for implantation was complete heart block. Dual chamber pacing was more commonly used. Elderly male patients with ischemic heart disease and comorbidities required more pacemaker implantations. Alternate site pacing was associated with fewer complications, including lead dislodgement, heart failure, and infection, comparable with evidenced literature, although these findings were not statistically significant.

#### APCU 17 THE CROCHETAGE LADY

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**Introduction** Atrial septal defect (ASD) is one of the most common congenital heart defects diagnosed in adulthood.

Diagnosis is made by echocardiogram; however, this procedure is not widely available, especially in remote hospitals. Various electrocardiogram (ECG) changes, including the Crochetage sign, may give important clues to aid in diagnosis. We report a case of a young woman with a Crochetage sign in her ECG later diagnosed with ostium secundum ASD.

**Case Presentation** An 18-year-old lady had multiple visits to our centre with intermittent palpitations and dull, aching chest discomfort with progressive exertional dyspnoea over the past three years. She did not experience pedal oedema, orthopnoea, or paroxysmal nocturnal dyspnoea. She was initially treated for gastritis and unstable angina. Upon initial questioning, there were no cardiovascular risk factors or significant family history. Clinical examination revealed an ejection systolic murmur over the left sternal edge with fixed splitting of the second heart sound. She was not cyanosed and was clinically euthyroid. Her ECG on presentation showed sinus rhythm and an incomplete right bundle branch block (RBBB) with a notch near the apex of the R wave in inferior leads, also known as the Crochetage sign. There was right atrial enlargement in her chest radiograph. An urgent echocardiogram was performed in a tertiary centre and confirmed the diagnosis of ostium secundum ASD with pulmonary hypertension.

**Discussion** ASD is a common acyanotic congenital heart disease diagnosed during adulthood. Palpitations and reduced effort tolerance are commonly reported symptoms. Clinical findings include a wide, fixed splitting heart sound with an ejection systolic murmur. The Crochetage sign is an independent ECG finding in ASD, especially in large ASD with shunt. Specificity and sensitivity increase further with the presence of RBBB.

**Conclusion** In a center with limited resources, the identification of the Crochetage sign in a patient's ECG is vital to tailor an appropriate investigation for the diagnosis of ASD.

#### APCU 18 A SYSTEMATIC REVIEW: BARRIERS HINDERING PATIENTS' PARTICIPATION IN CARDIAC REHABILITATION PROGRAMS

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**Introduction** Cardiac rehabilitation (CR) programs are essential for the recovery and secondary prevention of cardiovascular diseases. Despite the proven benefits of such programs, participation and completion rates remain suboptimal. This systematic review aims to identify literatures that systematically analyse and synthesize the factors and barriers influencing patients' participation in cardiac rehabilitation programs.

**Methods** The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) was used. Initial keywords for the precise search were based on the Boolean operators. A comprehensive literature search was conducted across PubMed, ScienceDirect, Cochrane Library, ProQuest, and Scopus databases. Studies on factors and barriers influencing patients' participation in cardiac rehabilitation programs were included in the review. Data extraction and quality assessment were performed independently by two reviewers. The data were assessed for methodological quality using a Critical Appraisal Skills Program (CASP) checklist.

**Results** A total of 10 studies met the inclusion criteria, encompassing a diverse range of populations and settings. Commonly identified factors and barriers include logistical/distance issues, financial issues, time constraints, health status, and transportation issues. Barriers related to the healthcare system, such as inadequate referral processes and insufficient patient education, were also found to be significant.

**Discussion** This review focuses on the barriers influencing patient participation in CR programs regardless of the phase. As the selected studies cover both developing and developed nations, the results of this current study can be generalized across various countries. The most prominent CR barriers are related to logistical, financial, and psychosocial factors.

**Conclusions** Multiple factors and barriers hinder patients' participation in cardiac rehabilitation programs. Addressing these barriers through targeted interventions is vital to enhance patients' engagement and improve the efficacy of cardiac rehabilitation programs. Future research should focus on developing and evaluating strategies to overcome these obstacles.

#### APCU 19 COMBINATION OF MECHANICAL TR WITH ESRF

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**Introduction** Precautions for implanting cardiac implantable electronic devices (CIED) into patients with end-stage kidney disease (ESKD) are more prevalent nowadays. However, concerns about haemodialysis in patients with CIED are rare.

**Case Presentation** A 45-year-old woman with underlying type 2 diabetes mellitus hypertension. She was diagnosed with a complete heart block, which required a permanent pacemaker in 2007, and underwent a box change in 2017. She was further complicated with ESKD, requiring regular peritoneal dialysis since 2019. Unfortunately, she had to convert to haemodialysis in May 2024 due to recurrent peritonitis. The nephrology team referred us as the patient had been oxygen-dependent since starting haemodialysis through internal jugular catheter insertion. Upon review, she had right ventricular failure: oedematous over her lower extremities and had sacral oedema and ascites; a chest drain was inserted for persistent pleural effusion. A loud systolic murmur was heard over the left sternal edge with loud P2. Electrocardiogram shows RV strain pattern. Echocardiography revealed severe tricuspid regurgitation (TR) with a systolic pressure gradient of 80mmHg. 3D echocardiography showed pacemaker wire impinging septal leaflet, causing mechanical TR. Pacemaker interrogation found 99.9% ventricular pacing. Consensus between managing teams and patients was made, and volume control was decided through fluid restriction and haemodialysis to maintain ideal dry weight as guided by a body composition monitor. She eventually developed a hospital-acquired infection, worsening pulmonary hypertension, leading to her demise within 3 months of haemodialysis.

**Discussion** Patients with ESKD have shorter lives compared to the healthy population. A study found higher mortality in the first 5 months for those with peritoneal dialysis switching over to haemodialysis. Our patient developed severe TR and right ventricular failure after starting with haemodialysis