APCU 01 A TWISTED TALE OF MITRAL VALVE: PUZZLE SOLVED

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10.1136/openhrt-2024-APCU.1

Introduction Myxomatous degeneration is a common aetiology of mitral valve prolapse. It may lead to potential complication such as mitral regurgitation and may resemble other clinical pathologies such as vegetations or cardiac masses.

Case Presentation A 58-year-old man presented with recurrent exertional dyspnoea, reduced effort tolerance and low-grade fever for a year duration. He was not in respiratory distress and the JVP was normal. Peripheral stigmata of infective endocarditis were absent. Cardiovascular examination revealed S1S2 with systolic murmur over mitral region. Chest X-ray portrayed cardiomegaly, ECG showed left ventricular hypertrophy and full blood count showed leucocytosis. The CRP, ESR and procalcitonin were not elevated and there was no growth on the blood culture. Transthoracic and transoesophageal echocardiogram revealed LVEF of 52%. The LVIDs was 5.26cm and LVIDd was 6.49cm. There was severe MR and severely prolapsed AMVL A2 as well as ruptured chordae. Suspicious vegetative lesion was seen at the tip of AML of mitral valve. Coronary angiogram was normal. He was empirically treated as infective endocarditis and referred to cardiothoracic team in view of no improvement in the suspicious mass after two weeks of antibiotics. He underwent mechanical mitral valve replacement. Intraoperatively, thickened mitral valve with prolapsed AMVL and ruptured chordae tendineae at A2 were seen. Histopathological report revealed fibrocartilaginous tissues with myxoid changes over leaflets without evidence of vegetations. The antibiotics were stopped since then. Three months later, his EF improved to 63% with absence of regional wall motion abnormalities. There was no further episode of admission afterwards.

Discussion Mitral valve prolapse is a complication of myxomatous valve disease. The myxomatous process reduce the tensile strength of chordae which lead to its rupture at the point of maximal stress, typically near the attachment of the chordae to the valve leaflets or the papillary muscles. Anterior leaflet is an uncommon location of myxomatous mitral valve. The presence of myxomatous valve may exacerbate incidence of infective endocarditis due to its structural abnormalities and possible nidus of infection.

Conclusion This case report showed the complexities in managing cardiac mass cases, which necessitates a multidisciplinary approach in order to reach accurate diagnosis and optimal management with the best possible outcome.

APCU 02 FACTORS AFFECTING THE OUTCOME OF THROMBOLYSIS IN PATIENTS WITH ACUTE ST-ELEVATION MYOCARDIAL INFARCTION

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10.1136/openhrt-2024-APCU.2

Introduction ST-Elevation Myocardial Infarction (STEMI) accounted for 43.3% of Acute Coronary Syndromes (ACS) in Malaysia in 2019. Malaysia uses thrombolysis, specifically streptokinase, for acute STEMI reperfusion, even though Primary Percutaneous Coronary Intervention (PPCI) is the gold standard. This study investigates thrombolysis results and Primary Percutaneous Coronary Intervention (MACE) risk variables.

Methods This retrospective observational analysis included acute STEMI patients treated with streptokinase for thrombolysis in 2021. Patient demographics, comorbidities, treatment, angiography and echocardiography results, treatment issues, and blood investigation data were collected and analysed using SPSS.

Results Accordingly, 150 patients evaluated had 84% thrombolysis success. Most patients were male (88.7%) and Malay (55.3%), with a mean age of 56.76 years (SD 10.23). Males had greater success rates (OR = 0.287, 95% CI = 0.094–0.872), and patients under 45 had reduced thrombolysis failure rates ($p = 0.001$). STEMI patients with hypertension, CKD, and DM had higher fatality rates ($p = 0.02$, 0.003, and 0.002). Left anterior descending artery infarcts demonstrated a greater thrombolysis success rate, though not statistically significant. Thrombolysis within 4 hours of symptom onset was more efficacious (62.7%, $p = 0.003$). The most prevalent consequences were cardiogenic shock (20.7%) and acute pulmonary oedema (17.3%). In unsuccessful thrombolysis, arrhythmia was more common ($p < 0.001$), and patients had greater risks of death and cardiac arrest (6.7% vs. 2.7%, $p < 0.001$). The cardiogenic shock occurred in 8.7% of failed thrombolysis patients and 13.3% of successful patients ($p = 0.002$).

Discussion Research indicates that effective STEMI thrombolysis in Malaysia is linked to age <45, male gender, and symptom onset to thrombolysis time <4 hours. In particular, thrombolysis failure is strongly associated with female gender, CKD, arrhythmia, cardiogenic shock, and cardiac arrest. Meanwhile, high fatality rates are linked to female DM, hypertension, CKD, and symptom onset to thrombolysis delays above 4 hours.

Conclusion In Malaysia, timely STEMI thrombolysis, particularly within four hours of symptom onset, is crucial for enhancing patient outcomes. Prompt treatment significantly reduces the risk of severe complications and increases the chances of a successful recovery.

APCU 03 ASSOCIATION OF IRON DEFICIENCY WITH CLINICAL SEVERITY AND ATHEROSCLEROTIC PLAQUE BURDEN IN PATIENTS PRESENTED WITH ST-ELEVATION MYOCARDIAL INFARCTION

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10.1136/openhrt-2024-APCU.3

Introduction Iron deficiency (ID) is a well-known factor that worsens symptoms severity in heart failure. Available literatures showed that ID is also associated with worse adverse outcome in acute coronary syndrome (ACS), however data on its impact on clinical severity and relation with atherosclerotic plaque burden especially in ST elevation myocardial infarction (STEMI) remain underexplored.

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Objective The study aims to assess the prevalence of ID in STEMI patients and its association with clinical severity and atherosclerotic plaque burden.
Material and Method This is a single-centre cross sectional study conducted on patients diagnosed with STEMI between April and May 2024. All the required information including comorbidities, transferrin saturation ratio and ferritin level were collected from electronic medical record. Clinical severity scores were calculated using TIMI and GRACE score. Atherosclerotic plaque burden was calculated using Gensini score.
Results The study included 37 patients and showed ID was prevalent in 78.4% of the study population (n=29). With regards to baseline comorbidities, only chronic kidney disease was found to be significantly different between ID and non ID patients (p=0.02). Chi-square test of clinical severity revealed no significant difference between both groups, TIMI score ID = 4.5 ± 2.7, non-ID = 4.6 ± 3.3, p=0.90 ; and GRACE score ID = 159.5 ± 43.5, non-ID = 172.9 ± 47.9, p=0.33. Additionally, linear regression analysis found no association between iron status and Gensini score (p=1.00).
Discussion The study findings suggest that while ID is common among STEMI patients, it may not significantly impact clinical severity as measured by TIMI, GRACE and Gensini score. However, ID is still important to be managed in STEMI patients as literatures have proven that ID carry poor prognosis in STEMI population. The contrast findings could be due to small sample size and not consider other subtypes of ACS.
Conclusion ID status does not appear to be associated with clinical severity in STEMI patients. Further researches with larger sample size and more robust methodology are required to further understand the link.

APCU 04 ELECTROCONVULSIVE THERAPY-INDUCED GENERALIZED T - WAVE INVERSION

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10.1136/openhrt-2024-APCU.4

Introduction Electroconvulsive therapy (ECT) is a well-established treatment for psychiatric conditions. Although effective, ECT can lead to various cardiovascular effects, such as heart rate fluctuations, blood pressure changes, and electrocardiographic (ECG) abnormalities. One notable ECG abnormality is T wave inversion (TWI), which may signal myocardial ischemia.
Case Presentation We present a case of a 45 year old male with treatment-resistant schizophrenia who developed new generalized T-wave inversion on ECG prior to his third monthly ECT session, despite having a previously normal baseline ECG. He exhibited no symptoms of angina or heart failure. Serial troponin and NT-proBNP levels were normal, and echocardiography revealed normal result. His cardiovascular risk factors included hypertension, active smoking, and a strong family history of ischemic heart disease. An inpatient coronary angiogram was performed revealing normal epicardial coronaries. The lack of clinical, biochemical, and imaging evidence of cardiac pathology led to the diagnosis of ECT-induced generalized T-wave inversion. The patient and psychiatry team were reassured and he was able to continue further ECT sessions without any complications.
Discussion This case highlights the importance of comprehensive cardiac evaluation in patients with unexpected ECG changes during ECT and underscores the need for awareness of ECT-induced cardiac manifestations among clinicians. ECT induces generalized tonic-clonic seizures through brief electrical pulses, leading to autonomic nervous system activation and transient cardiovascular effects. T wave inversion, while sometimes indicative of serious cardiac conditions, can be benign in the context of ECT. Studies suggest that ECG changes, including T wave inversion, are not uncommon during ECT and generally resolve without intervention. However, new onset of acute coronary syndrome or cardiomyopathy has been reported following ECT, emphasizing the need for careful cardiovascular assessment and monitoring, especially in patients with risk factors.
Conclusion T wave inversion during ECT is relatively not uncommon and often transient. Rigorous cardiovascular evaluation and monitoring are essential for the safe administration of ECT, particularly in patients with significant cardiovascular risk factors.

APCU 05 KNOWLEDGE, BELIEFS AND TREATMENT ADHERENCE AMONG PATIENTS WITH HYPERTENSION

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10.1136/openhrt-2024-APCU.5

Introduction This study aimed to determine the relationships between knowledge, beliefs, and treatment adherence among patients with hypertension. Patients with hypertension do not have adequate knowledge about hypertension and poor perceptions of hypertension and treatment adherence.
Methodology This quantitative, descriptive correlation study was conducted in outpatient clinics from January 2018 to March 2018. Self-report data were collected from patients using the instruments of the Hypertension Knowledge-Level Scale (HK-LS), Commonsense Beliefs and Treatment Adherence Questionnaire for Patients with Hypertension (TAQPH) from 356 patients diagnosed with hypertension who were chosen via convenience sampling. The statistical tests that were applied were the Chi-Square test and Logistic Regression.
Results Three hundred and ten patients participated in this study, with a response rate of 87.1%. Overall, patients had high knowledge, beliefs, and treatment adherence to hypertension. Sociodemographic data significantly related to knowledge, beliefs, and treatment adherence to hypertension. Meanwhile, no significance was found between beliefs and treatment of adherence to hypertension.
Discussion About 45.5% of the patients had poorly defined hypertension, especially regarding systolic and diastolic blood pressure. These terms might have been medical jargon that laypersons could not understand. Those who had higher education or were exposed to hypertension health education might be able to read and interpret the information better. Also, the information could be provided by previous hypertension health education or social media. It was possible that income could influence patients' beliefs from different income

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