(TVR). The secondary objectives were total mortality, including cardiac death and non-cardiac death.

Results The study included 244 patients divided into three groups: QFR-guided PCI (n=47), PCI without QFR (n=122), and medical therapy (n=75). Malays predominantly underwent PCI without QFR guidance (36.1%), while the Chinese population was more represented in the PCI with QFR group (49.2%). Hypertension emerged as the most prevalent risk factor across both groups, affecting 79.5% of patients in the PCI without QFR group and 73% in the PCI with QFR group. The QFR-guided PCI group had the lowest incidence of TVF (2.1%) compared to PCI without QFR (7.4%) and medical therapy (8.0%). However, these differences were not statistically significant (P = 0.38). Similarly, no significant differences among the groups were found in the ACS, cardiac death, or TVR rates. All-cause mortality was also lower in the QFR-guided PCI group (0%) compared to the other two groups, but the difference was not statistically significant (P = 0.211). In logistic regression analysis, QFR-guided PCI showed a trend toward reduced odds of TVF OR = 0.25 [95% CI: 0.03–2.15], and ACS OR = 0.39 [95% CI: 0.04–3.56] compared to medical therapy, but these findings were not statistically significant (P = 0.22 and P = 0.40, respectively). The study suggests that while QFR-guided PCI may reduce adverse outcomes, larger studies are needed to confirm these potential benefits.

Conclusions The findings of this study highlight the substantial value of Quantitative Flow Ratio (QFR) in guiding percutaneous coronary intervention (PCI) in indeterminate coronary artery lesions with better target vessel failure outcomes. These results suggest that integrating QFR into routine clinical practice could lead to more effective and targeted interventions, reducing unnecessary procedures and optimizing patient care.

APCU 25 REVITALIZING HEARTS: THE TRANSFORMATIVE EFFECTS OF CARDIAC REHABILITATION ON CORONARY RISK FACTORS

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Introduction Cardiovascular rehabilitation (CR) is a crucial intervention in secondary prevention, aimed at stabilizing clinical conditions and reducing future cardiovascular events. CR is a class 1 recommendation for all patients with coronary artery disease (CAD).

Objective This study evaluates the impact of CR on modifying coronary risk factors in patients who underwent Coronary Artery Bypass Grafting (CABG) or received non-surgical interventions like medical therapy or percutaneous coronary intervention (PCI). CR components include patient assessment, physical activity, counselling, exercise training, dietary guidance, risk factor management, patient education, psychosocial support, and vocational advice.

Materials and Method A retrospective cross-sectional study reviewed medical records from June 2021 to June 2024. Data analysis using SPSS included descriptive statistics, mean ± standard deviation (SD), one-way ANOVA for normally distributed variables, and Chi-square tests for categorical data.

Results The profile of atherosclerotic risk factors were similar between the surgical intervention and non-surgically treated subjects. Significant improvements in coronary risk factors were observed across all patients post-CR. Notably, CABG patients showed substantial increases in normal blood pressure (from 30% to 72% in 2021 and 48% to 92% in 2024) as compared to non-CABG treated group (from 33% to 58% in 2021 and 45% to 82% in 2024). As for normalized lipid profiles (from 32% to 68% in 2021 and 42% to 96% in 2024) for CABG group, as compared to non-CABG treated from 44% to 60% in 2021 and 44% to 84% in 2024. CABG patients showed marked improvement in non-smoking habits (from 44% to 84% in 2021 and 52% to 100% in 2024) as compared to non-CABG treated (from 38% to 78% in 2021 and 48% to 88% in 2024).

Conclusion CR significantly enhances the modification of coronary risk factors, particularly post-CABG, underscoring its role in improving patient outcomes and raising awareness following major surgery.

APCU 26 STRIKING LDL TARGETS: A YEAR-LONG REAL-WORLD EVALUATION OF CARDIOVASCULAR RISK REDUCTION AT HOSPITAL PULAU PINANG

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Introduction Atherosclerotic Cardiovascular Disease (ASCVD) remains a leading cause of global cardiovascular mortality, responsible for 80% of related deaths. Lowering low-density lipoprotein cholesterol (LDL-C) is crucial in mitigating atherosclerotic plaque progression and reducing ASCVD incidence.

Objective The primary objective of this study is to assess the effectiveness of the Cardiovascular Risk Reduction Clinic (CRRC) at Hospital Pulau Pinang in achieving risk-based LDL-C targets in patients receiving LDL-C-lowering therapy (LLT) at baseline, 6 months, and 12 months. The secondary aim is to analyse patterns of LLT utilization, along with patient demographics, education, and lifestyle interventions.

Materials and Method This single-arm observational study utilized medical records of adults aged 18 and above with established ASCVD or ASCVD-risk equivalents and LDL-C levels >1.8 mmol/L. Statistical analyses included McNemar Test for assessing LDL-C goal achievement. Absolute and percentage reductions in LDL-C were assessed through Paired T-tests and One-sample T-tests, respectively, with statistical significance defined at $P < 0.05$.

Results Data were collected from 70 patients (mean age 57.5, SD 11.0), predominantly male (86%), Malay (41%), and Chinese (39%). All patients had ASCVD history, with 67% undergoing cardiac surgery/intervention and 71% having multivessel disease. Common comorbidities included hypertension (74%) and diabetes (36%), while 11% of patients experienced premature ASCVD (first event <40 years old). Follow-up data were available for 60 and 56 patients at 6 and 12 months,

respectively. Significant reductions in mean LDL-C levels were observed at month 6 (−1.8 mmol/L, 44.6%, p < 0.0001) and month 12 (−1.8 mmol/L, 46.7%, p < 0.0001). Achievement of LDL-C <1.8 mmol/L was noted in 53.3% (month 6) and 55.4% (month 12), with similar trends for LDL-C <1.4 mmol/L (26.7% at month 6, 30.4% at month 12). Combination lipid-lowering therapy utilization increased significantly from baseline to 71.4% at month 6 and 80.7% at month 12, demonstrating significant progress in cardiovascular risk management.

Conclusion The CRRC at Hospital Pulau Pinang effectively reduced LDL-C levels over 12 months, demonstrating its role in managing cardiovascular risk through optimized therapy and patient education. Longer-term studies with larger cohorts are warranted to further validate these findings.

APCU 27 UNVEILING THE HIDDEN THREAT: RECURRENT PULMONARY EMBOLISM IN YOUNG ADULTS

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Introduction Recurrent pulmonary embolism (PE) in young adults poses a multifaceted medical challenge, necessitating a thorough exploration of conventional risk factors and emerging predispositions. While typically associated with older populations and comorbidities, PE in younger individuals demands special attention due to its potential long-term health impacts. This review highlights the diverse etiological factors contributing to recurrent PE, including genetic susceptibilities, lifestyle influences, and environmental triggers. By elucidating the unique characteristics of this condition, we aim to improve prevention strategies, enhance diagnostic accuracy, and refine management approaches to alleviate its burden on both patients and healthcare systems.

Case Presentation We present the case of a 30 years old male who experienced sudden-onset palpitations, lower calf pain, and exertional dyspnoea following ankle surgery. Initial diagnostics revealed a massive saddle-shaped pulmonary embolism, necessitating emergency pulmonary embolectomy and subsequent anticoagulant therapy. Despite apparent recovery, recurrent symptoms prompted further evaluation, revealing a secondary embolic event attributed to antiphospholipid antibody syndrome. This case underscores the complexities in managing PE recurrence in young adults, emphasizing the importance of vigilant monitoring and tailored therapeutic interventions.

Discussion Recurrent PE in young adults, particularly in post-surgical scenarios, presents unique clinical complexities exacerbated by predisposing factors such as surgical interventions and underlying autoimmune disorders. Treatment modalities, including surgical intervention and thrombolytic therapy, require careful consideration of risks and benefits. Comprehensive understanding and proactive management strategies are crucial in mitigating recurrence risks and optimizing patient outcomes. This review underscores the imperative for heightened clinical awareness, early intervention, and interdisciplinary collaboration to effectively manage recurrent PE in young adults.

APCU 28 CASE SERIES ON THE MANAGEMENT OF ATRIAL FIBRILLATION IN PATIENTS WITH NORMAL THYROID FUNCTION EXPERIENCING THYROTOXICITY

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Introduction Hyperthyroidism causes circulatory alterations, including elevated heart rate and atrial automaticity, which can result in conditions such as Atrial Fibrillation (AF) and heart failure, ultimately leading to increased mortality rates. Even though euthyroid is achieved through medication, cardiovascular symptoms may persist. Additional research into factors linked to persistent AF is required to decide on the appropriate anticoagulant therapy.

Case Presentation A 66-year-old Malay man with hypertension, dyslipidaemia, and Thyrotoxic Atrial Fibrillation (TAF) due to Grave's disease for five years was presented to the emergency department after two failed radioactive iodine treatments and thyroid gland surgery. He reported periodic palpitations, dyspnoea, and left chest pain. The electrocardiogram (ECG) revealed rapid ventricular AF and uncontrolled elevated blood pressure. Thyroid function tests were normal (T4 = 14.21, TSH = 4.78). The patient was referred to cardiology for assessment and cardiac ablation. In another case, a 34-year-old woman with Graves' disease and AF, despite taking bisoprolol, presented to the emergency department with frequent palpitations and dizziness but no chest pain. Correspondingly, the ECG showed AF. Her thyroid function tests were normal (T4 = 15.21, TSH = 3.56). She was treated for symptomatic AF, and elevated troponin levels prompted a cardiology referral for assessment and cardiac ablation.

Discussion Thyroid hormones affect cardiovascular function, predisposing individuals to AF even after achieving euthyroid. The thromboembolic risk in TAF is mitigated by oral anticoagulants. Treatment for TAF involves antithyroid medications to restore euthyroid and rate and rhythm control. Wong et al., (2017) identified an unexpected relationship between decreased free thyroxine levels and chronic AF. TAF carries a high thromboembolic risk even after achieving euthyroid, necessitating anticoagulants, and ongoing monitoring to prevent a recurrence. In cases of symptomatic AF that do not respond to medication, AF ablation is performed by using catheters to deliver energy (radiofrequency, cryoenergy, or pulsed field) to create lesions that block abnormal electrical impulses and prevent them from triggering AF.

Conclusion The management of AF caused by hyperthyroidism requires collaboration between endocrinology and cardiology specialists. Thus, prompt diagnosis and personalised treatment, including achieving biochemical euthyroid, anticoagulant therapy, and potentially definitive treatment with ablation, can improve prognosis and reduce complications.