

Background: Prevalence of acute pulmonary embolism is increasing in general population especially in old population. Prevalence of acute pulmonary embolism in young adults is unknown. The objective of this study was to assess the prevalence of acute pulmonary embolism in young (<40 years) population and to compare the clinical presentation and the therapeutic benefit in regards to age at presentation. **Settings:** A single tertiary cardiac care centre.

Methods: In this study, among 202 patients enrolled, 97 & 105 patients were admitted as young & old patient, respectively. The clinical presentation and course after therapy among them were observed and compared.

Results: forty-eight percent of our study population belongs to <40 years of age. There were no significant differences seen in functional class, hypotension, electrocardiographic & echocardiographic features based on age difference. Clinical improvement after treatment (68% vs 78%, p=0.42) and in hospital death (10% vs 16%, p=0.36) was non-significantly more in older than in young patients. Though the incidence of minor bleeding (14% vs 11%, p=0.68) was non-significantly higher in older group of patients but two patients in this group had intra-cerebral bleed following thrombolytic therapy.

Conclusion: As there were no significant differences in the clinical presentation, therapeutic benefit, and course after therapy and complication, therefore, age should not influence the decision to treat pulmonary embolism patients especially with thrombolytic agents though caution should be taken while treating older patients.

Study of cardiovascular manifestations in hypothyroidism

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Background: In hypothyroidism there is reduced production of thyroid hormone which leads to characteristic cardiovascular clinical features including sinus bradycardia, diastolic hypertension, pericardial effusion, dyslipidemia, cardiomyopathy, congestive heart failure, etc. So far our knowledge goes this study is first of its kind in Upper Assam.

Methods: This study was undertaken in 79 patients with hypothyroidism, diagnosed on the basis of clinical features and thyroid function tests and were taken up for the study after considering the inclusion and exclusion criteria. This was a hospital based observational study.

Results: 79 patients with hypothyroidism were included in the study. The mean age of patients was 42.59 ± 14.15 years and 74.68% were females. The most common symptoms of hypothyroidism in the patients were fatigue (59.49%), followed by lethargy (55.70%). Cardiovascular involvement was present in 68.35% patients. The most common symptom of cardiovascular involvement was effort intolerance (35.44%) followed by chest pain (21.53%). Diastolic hypertension (34.18%) and sinus bradycardia (25.32%) were the most common cardiovascular signs in the patients. Pearson correlation showed a positive correlation between the number of symptoms in the patients and the serum TSH level. Linear regression analysis also showed a significant correlation between serum TSH and serum levels of total

cholesterol, LDL cholesterol and triglycerides (p value <0.05). The most common ECG abnormality was sinus bradycardia and the most common abnormality on Echocardiography was LV diastolic dysfunction (34.18%). Holter monitoring revealed QT prolongation with evidence of non-sustained ventricular tachycardia in 1 patient (1.27%), and Tread mill test was positive in 1 patient (1.27%).

Conclusion: Cardiovascular manifestations are common in hypothyroid patients which may lead to serious life threatening arrhythmias and could gradually progress to preventable overt heart failure.

Pulmonary embolism – A persisant dilemma

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Background: Pulmonary embolism (PE) remains a medical emergency, in massive pulmonary embolism and consequent right ventricular failure, where restoration of pulmonary arterial flow is urgently required, prompt therapeutic intervention is imperative. Thrombolytic therapy has a potential to produce quick thrombolysis, improve hemodynamic instability and eliminate the venous thrombi. Despite the approval of streptokinase, urokinase, alteplase and tenecteplase for thrombolysis in PE, the efficacy of these thromolysis remain unclear due to the high mortality associated with this condition.

Methods and Results: The 120 cases admitted with suspected pulmonary embolism, only 68% (96) patients were thrombolysed, rest 32% (44) were not thrombolysed due to old age, embolisation in smaller lobar vessels and affordability of the patients. Total enrolled patients were 105 males and 35 females of which 72 males and 24 females were thrombolysed. The presenting symptoms of dyspnoea, chest pain, hemoptysis and syncope were found in 140(100%), 7 (5%), 0(0%) and 28 (20%) patients respectively.

According to Well's score for pretest probability of pulmonary embolism, 5 % patients had high probability (Well's score>6), 55% patients had moderate probability (Well's score between 2 and 6) and 40% patient had low probability (Well's score<2). The diagnosis of pulmonary embolism could be confirmed only in 8% patients using CT pulmonary angiography. In others, pulmonary embolism was the most likely diagnosis based on Well's score, abnormal X-ray findings and evidence of right ventricular wall stress on 2D-echocardiography.

The signs of right heart failure documented were raised jugular venous pressure (46%), hepatomegaly (3%) and pleural effusion (5%). The ECG findings included S1Q3T3 pattern (60%), right bundle branch block (15%), and ST-T changes (25%).

The baseline echocardiography findings included evidence of thrombus in pulomony artery (15%), right atrium (5%), dilated right ventricle (95%) and tricuspid regurgitation (55%).

In our study the efficacy of the thrombolytic agents used and the complications associated with them did not show any significant discrepancies. The two hour regimen of streptokinase which was used in patients showed to be quite effective as well.

Conclusion: Because of the high cost and serious bleeding complications that may arise with thrombolytic therapy, thrombolytic treatment should be reserved for patients with massive PE complicated by severe haemodynamic compromise.