

ECG AND ECHOCARDIOGRAPHIC FINDINGS IN COPD AND THE CORRELATION OF RIGHT VENTRICULAR DYSFUNCTION WITH THE SEVERITY OF COPD

ABSTRACT

BACKGROUND

COPD is one of the most important cause of morbidity & mortality throughout the world. It is characterized by respiratory symptoms & airflow limitation which is due to alveolar & airway abnormalities. Pulmonary arterial hypertension affects the function of right ventricle leading to cor pulmonale & has a poor prognosis.

AIMS AND OBJECTIVES

To study the electrocardiography & echocardiography findings in COPD & compare the results of clinical, ECG, ECHO findings in detecting the right ventricular dysfunction & correlate with disease severity.

MATERIALS & METHODS

This study is conducted at Kanyakumari Government Medical College Hospital. It is a Prospective Observational study with a sample Size of 100 patients for 10 months. All patients underwent PFT & diagnosis of COPD is made based on WHO GOLD criteria. They are subjected to ECG, Chest X-ray & ECHO for evidence of right ventricular hypertrophy, right ventricular dilatation & pulmonary hypertension.

RESULTS

COPD is more common in smokers with male to female ratio of 6.14:1 & is more common in the 5th & 6th decade. The major symptoms were breathlessness & chronic cough with expectoration. Majority of patients (74%) had severe & very severe COPD by spirometry. Clinical Evidence of RV failure was seen as increased JVP (36%), parasternal heave (30%) pedal edema (32%), ascites (9%), loud & palpable P2 (35%). By chest X-ray, hyperinflated lung fields & increased bronchovascular markings were the most frequent changes. 53% of the patients had ECG evidence of RVH & it correlated significantly with the severity of disease. Overall

incidence of cor pulmonale was found in 59% by echocardiography & is highly significant ($p < 0.001$).

CONCLUSION

Cor pulmonale is a common complication of COPD & detection of cor pulmonale in early stage is important for therapeutic & prognostic implication. The diagnosis of cor pulmonale in COPD patients is 36% by general physical examination, 30% by chest X-ray, 45% by ECG & 59% by 2D echocardiography. By physical examination, CXR & ECG collectively, diagnosis of cor pulmonale in COPD patients is 51% while by 2D ECHO alone is 59%. It is recommended to carry out physical examination, chest X-ray & ECG where ECHO is not available. Echocardiography is more sensitive & better than other modalities for early detection of cor pulmonale & better management of cases.

KEYWORDS : COPD, Cor pulmonale, Spirometry