



Respiratory Medicine

A CORRELATIVE STUDY OF ELECTROCARDIOGRAPHY, ECHOCARDIOGRAPHY AND HEMATOLOGICAL FINDINGS IN CHRONIC OBSTRUCTIVE LUNG DISEASE

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KEYWORDS :

INTRODUCTION

Chronic obstructive pulmonary disease is one of the commonest cause of mortality and morbidity in our country. It is defined as "a **common preventable and treatable disease characterised by persistent respiratory symptoms and airflow limitation that is due to airway and/or alveolar abnormalities usually caused by significant exposure to noxious particles or gases.**" COPD is currently fourth leading cause of death in the world but is projected to be the third leading cause of death by 2020. Advances in understanding the pathogenesis of COPD have the potential for identifying new therapeutic targets that could alter the natural history of this devastating disorder.

AIMS AND OBJECTIVES:

1. To conduct electrocardiography, echocardiography and hematology in COPD patients.
2. To correlate ECG, Echocardiography and hematological findings with severity of chronic obstructive pulmonary disease.

PATIENT AND METHODS:

This study is hospital based cross sectional study done in patients attending OPD, IPD of department of pulmonary medicine of GOVERNMENT CHEST DISEASE AND TUBERCULOSIS hospital, Hanamkonda from April 2018 to September 2019.

1. Detailed clinical history taken in a proforma
2. Special importance given to smoking habit.
3. Physical examination done in patients in detail and findings are recorded in proforma.
4. All patients are subjected to spirometry, ECG, ECHO and complete blood picture.
5. Patients are divided into four groups based on spirometry as follows:
Group 1: MILD-FEV1/FVC<0.7; FEV1 >80% predicted
Group 2: MODERATE-FEV1/FVC<0.7; FEV1 80-50% predicted
Group 3: SEVERE-FEV1/FVC<0.7; FEV1 50-30% predicted
Group 4: VERY SEVERE-FEV1/FVC<0.7; FEV1 <30% predicted
6. ECG and ECHOCARDIOGRAPHIC findings are correlated with severity of COPD.

INCLUSION CRITERIA:

1. All Adult males and females more than 18 years age with known history of COPD giving consent were selected from OPD department of pulmonology, Government CD & TB hospital, hanamkonda.
2. The diagnosis of COPD was made by symptoms, physical examination, radiological examination and lung function tests by spirometry.

EXCLUSION CRITERIA:

1. Patients not given consent.
2. Patients diagnosed as
 - a. Bronchial asthma
 - b. Coronary artery disease
 - c. Lung cancer
 - d. Left ventricular dysfunction
 - e. Significant valvular disease
 - f. tuberculosis.

RESULTS:

Most of the patients are falling between 61-70 years of age, males- 42,

females-12. In our study total number of smokers are 44 and non smokers with biomass fuel exposure are 10. BMI correlation with FEV1 % predicted is weakly significant with a p value **0.122**, pearson correlation of **0.213**, indicating positive correlation with increasing severity of disease i.e., as severity increases there is decrease in BMI. A weak correlation found between Hb%, PCV with FEV1%. But in the individual groups, there is correlation with severity in GOLD A,B,C,D groups. But taking mean of the parameters (HB%, PCV) significance has been decreased. With increasing severity of COPD (FEV%) the values are increasing. The ECG changes are correlating significantly with severity of COPD, both with predicted FEV1% and GOLD A,B,C,D groups with significant p value, pearson coefficient, chi square, mean values for the parameters of ECG (p pulmonale, R/S >1 in V1, R/S <1 in V6, RBBB, RAD). The 2D ECHO changes are also correlating significantly with severity of COPD by measuring severity with FEV1%. All the parameters except right ventricular changes are correlating significantly with GOLD A,B,C,D groups with p value 0.005, 0.89, 0.001, 0.00 for RA, RV, TR, RVSP respectively.

CONCLUSIONS:

Results obtained from our study indicates that the 2D ECHO changes are better correlated with FEV1% predicted than with GOLD A,B,C,D groups.

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