Research Paper

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Study of Electrocardiographic and Echo Cardiographic Profile of Chronic Obstructive Pulmonary Disease Patients

Medical Science

KEYWORDS :

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ABSTRACT

BACKGROUND=Chronic Obstructive Pulmonary Disease presents as an immense and a serious global public health problem all over the world.Most of the increased mortality associated with COPD . Electrocardiography and Echocardiography provide a rapid, non-invasive,portable and an accurate method to evaluate the effective functioning of the cardio-vascular system.

AIMS& OBJECTIVE= To study the various changes on Electrocardiography & electrocardiogram with its correlation with severity of chronic obstructive pulmonary disease.

MATERIAL & METHO=DThis study was conducted during the period from November 2012 to October 2013. It included Ninety Five (95) adult indoor patients, with COPD. The diagnosis of COPD was made as per the guidelines by Global Institute for Chronic Obstructive Lung disease (GOLD) .All of the patients had undergone clinical examination and the investigations including 2D ECHO & ECG.

RESULT=in this study44% of the patients had ECG evidence of right ventricular hypertrophy .Incomplete RBBB was found in 18.18% of the patients with RVH. 48% of the patients in the study had P pulmonale.Also, Pulmonary hypertension was seen in 56% of the patients in the present study54% of the patients had echocardiography evidence of corpulmonale.

CONCLUSION=Statistically significant correlation with severity was found in the incidence among ECG and Echocardiography findings.

AIMS AND OBJECTIVES

1. To study the various changes on Electrocardiography in patients with Chronic Obstructive Pulmonary Disease.
2. To assess the cardiac functions by 2D - Echocardiography in Chronic Obstructive Pulmonary Disease patients.
3. To correlate these findings with severity of the disease.

MATERIAL AND METHODS

This study was during the period from November 2012 to October 2013. It included Ninety Five (95) adult indoor patients, with COPD. The diagnosis of COPD was made as perGOLD criteria.

Inclusion Criteria:

Patients with history of cough with expectoration for at least 3 months duration in 2 consecutive years. Patients with history of breathlessness of long standing duration with or without cough.

➢ **Exclusion Criteria:**

Patients with pulmonary pathology like bronchial asthma, bronchiectasis, tuberculosis, pneumoconiosis, restrictive lung disease like kyphoscoliosis. Patients with Rheumatic, Congenital or Ischaemic heart disease.

For all the patients history,clinical examination noted & undergone the following investigations:Chest X-Ray PA , standard 12 lead ECG,2D-echocardiography,spirometry,CBC ,ESR,Urine for routine andmicroscopicexamination,Sputum for Acid fast bacilli and Gramstain,RBS, LFT,RFT.

SEVERITY OF DISEASE ACCORDING TO GOLD CRITERIA IN STUDY POPULATION

DEGREE	STAGE	FEV1 OF PREDICTED	NO OF CASES	PERCENTAGE
Mild	Gold 1	>80%	0	0 %
Moderate	Gold 2	< OR = 80% &>50%	4	4%
Severe	Gold 3	< OR = 50% &>30%	34	36%
Very severe	Gold 4	< OR = 30 %	57	60%

CORRELATION OF ECG FINDINGS WITH SEVERITY OF DISEASES

ECG FINDINGS	GOLD 2 moderate		GOLD 3 severe		GOLD 4 Very severe		p
	no	%	no	%	no	%	
P pulmonale			13	38.8	33	56.7	<0.001
Low voltage complex	2	50	6	16.7	19	33.3	>0.005
Right axis daviation			11	3.3	38	66.7	<0.001
Poor r wave progrssion			9	27.7	21	36.7	<0.001
Incomplete RBBB					7	13.3	<0.001
RVH			11	33.3	31	53.3	<0.001

CORRELATION OF ECHOCARDIOGRAPHIC FINDING WITH SEVERITY OF DISEASE

ECHO FINDINGS	GOLD 2 Moderate (N=4)		GOLD 3 Severe (N=34)		GOLD 4 Very severe (N=57)		X^2	p
	NO	%	NO	%	NO	%		
R.A. DILATATION	2	50	6	16.7	28	50	4.584	0.032
RV DILATATION			4	11	42	73.3	19.284	0.000
RV HYPERTROPHY			6	16.7	21	36.7	2.794	0.095
RV FAILURE					13	23.3	5.426	0.020
IVS MOTION ABNORMALITY			2	5.6	15	26.7	3.817	0.051
PULMONARY HYPERTENSION	2	50	9	27.8	42	73.3	9.145	0.002
COR PULMONALE			7	22.2	44	76.7	15.513	0.000

SUMMARY & CONCLUSION= Statistically significant correlation with severity was found in the incidence among ECG and Echocardiography findings. The incidence of ECG and Echocardiography abnormalities are more common as the disease duration and severity increases.

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