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Research Article

COPD IN CHRONIC SMOKERS

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ABSTRACT
The present Cross sectional study with a comparison group was carried out to evaluate pulmonary function tests VC, FEV1 FEF25-75 we PEFR. In chronic smokers, these values were with the value obtained in mild and moderate chronic smokers of the same age group.
The study includes 25 mild smokers 25 moderate smokers 25 chronic smokers. On comparison, it was found that there was highly significant (P, <0.001) decline in FVC, FEV1, PEFR. The values of respiratory parameter go on decreasing with increases in number of exposure to smoke.

Keywords: *Pulmonary Functions, Smokers, Forced Vital Capacity, Forced Expiratory Volume. In First Second, Peak Expiratory Flow Rate, Vital Capacity History*

INTRODUCTION
Smoking whether active or passive is a well known risk factor for general health. There are more than 4000 individual substances isolated from cigarette smoke which include nicotine carbon monoxide, volatile, Aldehydes, Hydrogen Cyanides etc. Smoking is also the major cause of chronic bronchitis and emphysema and interferes with oxygen uptake transport and delivery.

MATERIALS AND METHODS
This study included 100 male subjects between 19-58 years of age. They were further divided into-25, mild smokers, <5 pack year. 25, moderate smokers <5-10 pack years. 25, chronic smokers. >10 pack years. 1 pack year = 20 Cigarettes/Day for one year was considered. A detailed history of smoking was taken. 1 type of smoke inhaled, Bidi, Cigarette bid 3 numbers of bids, cigarettes smoked per day. The protocol of the study was approved by the ethical committee of our institute. Persons having asthma or chronic infection of lungs having persistent cough treated recently for any respiratory illness were excluded. The subjects were drawn from amongst the staff and students of the institute and residents of the city. Pulmonary function test values FVC, FEV1, FEF 25-75%, pefr, were noted. The date collected was analyzed and compared with the available literature the ventilator tests were carried out with a computerized Spiro meter. Meds Spiro it was designed to be used with electromechanical pneumonia tech volume differential method. Its overall accuracy is within +-1% its range for volume is 0 to 10 Liters and for flow is 0-20 liters per sc. and its range body surface area was calculated using Dubois formulae.

Observations

Table 1. Showing Antropometric Values Between control group (non smokers) & smkers (Mild , Moderate & chronic).

	No	Non-Smokers (Group I)	No	Smokers (Group II)	P-Value
Age (years)	25	34.56+10.64	25	31.36+8.31	N.S.
			25		N.S.
			25		<0.05
Eight (CMS)	25	168.68+9.96	25	163.84+13.38	N.S.
			25	163.84+9.44	N.S.
			25	163.52+11.58	N.S.
Weight	25	65.04+11.80	25	63.08+13.02	N.S.
			25	59.28+10.29	N.S.
			25	59.08+13.12	N.S.
BSA	25	1.74+0.17	25	1.68+0.22	N.S.
			25	1.64+0.16	<0.05
			25	1.66+0.19	N.S.

Table 2. Comparison of respiratory parameters between non smokers 25 mean+SD & smokers mild 25 , moderate 25 chronic 25 mean + SD

	No	Non-Smokers (Group-I)	No.	Smokers (Group II)	P-Value
FVC (Litres)	25	3.22+0.64	25	2.93+0.70	N.S.
			25	2.76+0.51	<0.01
			25	2.46+069	<0.001
FEV1 (Litres)	25	2.98+0.64	25	2.78+0.68	N.S.
			25	2.27+0.05	<0.01
			25	1.90+0.48	<0.001
PEFR	25	4.18+1.67	25	7.08+1.63	N.S.
(L/sec)			25	5.66+2.23	<0.01
			25	4.38+1.68	<0.001
FEF 25-75%	25	4.18+142	25	3.95+1.45	N.S.
(L/sec)			25	3.59+1.34	<0.01
			25	2.25+1.37	<0.001
FEV1/FVC	25	93.60+6.31	25	94.56+6.91	N.S.
			25	87.00+12.21	<0.01
			25	78.98+15.64	<0.001
MVV (L/min)	25	110.24+46.61	25	109.68+36.39	N.S.
			25	77.60+27.67	<0.01
			25	67.60+29.33	<0.001

RESULTS

There was no significant difference between the mean age height, weight and body surface area of smokers & non-smokers (Table 1)

Intensity wise analysis (Table 2) reveals the value of FEV1 in mild smokers is on the lower side in comparison to the control group and p-value sp calculated to be insignificant. The value of FEV1 of moderate and chronic smokers and the p-value came out to be statistically significant, p<0.001.The above finding are in agreement with findings of under Doormen *et al.*,, Sherrill *et al.*, , Siatkoska *et al.*,, Islam and Sahottenfeld. These studies also reiterate that chronic smoking related charges in pulmonary function are reflected a accelerated decrease in FEV1. The lung functions also showed a decline with increasing number of pack year. During intensity wise analysis of (Table 2) it was studied that the values of FEV1/FVC in mild smokers are lower as compared to the control group and p-value is statistically insignificant. The value of FEV1/FVC in moderate and chronic smokers is much lower in findings are comparable to the findings of same previous studies. In these studies also FEV1/FVC showed significantly greater airway obstruction in smokers as compared to non-smoker. The negative impact of smoking was apparent in most measures but was most progressive in FEV1/FVC ratio.

The present study comprises of 75 mild, moderate and chronic smokers. Intensity wise analysis showed that the value of PEFR in moderate and chronic smokers is lower than the control group and the P-value is statistically significant (p<0.001). The results of the present study are deceasing trends in the values as we proceed from non-smoker to heavy smokers.

Intensity wise analysis shows that the value of FEF25-75% in mild and moderate smokers is less as compared to non-smokers and P-value is statistically highly significant with findings of Marq Minette and walter and Nancy which show a decreasing trend as we proceed from non-smokers to chronic smoker.

Intensity wise show that the value of MVV in moderate and chronic smokers is less than that of non-smokers and the P-value is statistically significant (p<0.001).

The negative impact of smoking in FEV1and FEV1/FVC ratio. Non-smokers in all cases had better lung function values than smokers. Correlation between smoking habits and dyspnoea.

DISCUSSION

Pulmonary function data in smokers indicate narrowing of smaller airways chiefly bronchioles which lead to slowly progressive COPD. Correlation between smoking habits and dysnoea, morning cough and

sputum production was confirmed. It was also established that lung function decreases with increasing number of pack years. Rapidly declining lung function in smokers is predictive of COPD. Air flow limitation is progressive and associated with abnormal inflammatory pulmonary function.

Data in smokers indicate narrowing of smaller airways chiefly bronchioles which lead to showily progressive COPD. It is inflammatory response of lungs to noxious gases or particles oxidative stress induced by smoking also induces COPD. Correlation between smoking habits and dysnoea morning cough, sputum production was confirmed it was also established that lung function decrease with increasing number of pack years rapidly declining lung function in smokers is predictive of COPD. Airflow limitation is progressive and associated with abnormal inflammatory respiratory response of lungs to noxious gases or Particles. COPD leads to affixed narrowing of Airways and destruction of alveoli mainly, in the peripheral parts of lungs.

Conclusion

We obtained significantly lower vales of FEV, FEV1, FEV% expiratory flow rates and MVV in middle aged smoker than their non smoking counter part FEV, FEF decrease more extensively than other flow rates. The chief determinates of flows at low lung volumes are elastics recoil of type lung and resistance of small airways. COPD is widely under diagnosed. Millions of people are walking around to day unaware that they have early stage disease, and simple siprometry is am extremely valuable and simple test that can help people feel better and live longer.

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