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BRONCHOGENIC CARCINOMA;
SMOKING HABITS IN PATIENTS.

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ABSTRACT... Background: The Connection between smoking and lung cancer is now generally accepted. The objective of this study was to observe smoking habits among different histological types of bronchogenic carcinoma. **Setting:** Bahawal Victoria Hospital, Bahawalpur. **Period:** April 2000 to March 2003. **Methods:** This was a simple descriptive study comprising of 30 consective histopathologically / cytologically confirmed cases of bronchogenic carcinoma that were admitted in different medical units of Bahawal Victoria Hospital, Bahawalpur. History regarding smoking was taken in detail including type of smoking, quantity of tobacco smoked and duration of smoking in years. Smoking patterns were observed with their age, gender, living conditions and type of bronchogenic carcinoma. **Results:** Among eighteen cases of squmous cell carcinoma, history of smoking was present in all males. Only one female who belonged to a village was non- smoker. Cases with small cell carcinoma were six in total and all were males with five smokers, three urban areas and two rural areas. Only one was a non- smoker with a rural background. Three females and one male had adenocarcinoma. One male from city and one female from a village were smokers, while remaining two females were non-smoker and lived in urban areas. Two men suffering from large carcinoma were smokers residing in urban areas. **Conclusion:** Cigarette smoking is present in 87% of all bronchogenic carcinoma especially with squamous cell, and large cell varieties. The involvement of smoking cases of adenocarcinoma has been found to be the least common.

Key words: Bronchogenic, Carcinoma, Smoking, Smoking history.

INTRODUCTION

The incidence of lung cancer is increasing as life expectancy rises[1]. It is the most frequent cause of death by cancer, with more than 90,0000 new cases per year[2]. The casual relationship between smoking and lung cancer is now generally accepted[3]. More than 90% of cases of bronchogenic carcinoma in men and 80% of casa among woman are smokers. In Hong Kong, mortality from lung cancer has been rising sharply, and the rise is expected to continue[4]. The prevalence of lung cancer is increasing in Pakistan due to wide spread smoking epidemic; due to the massive media advertisement and promotional activities by the tobacco industry. There is a dose response relationship between the number of cigarettes smoked and year of exposure

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and a cohabiting non-smoker's risk of lung cancer[5].

Various histological changes in the bronchial epithelium have been reported in association with chronic smoking and lung cancer. However, bronchoscopic assessment of these changes is invasive, expensive, and subject to significant variability.

Squamous cell carcinoma is the predominant cell type in elderly patients. Majority of them are males with a positive history of smoking in more than 98% patients. On the other hand, adenocarcinoma is not as strongly associated with smoking as is squamous- cell carcinoma; however, its association with smoking is generally not disputed (still >75% are associated with smoking). The association with smoking in cases of small- cell tumor is very strong (more than 90%.)[6] . We carried out this study to check such association in our patients in a tertiary care hospital in southern Punjab.

PATIENTS AND METHODS

A descriptive study was designed to investigate smoking pattern in 30 consecutive histopathologically / Cytologically proven cases of bronchogenic carcinoma. All of these patients were admitted in different medical units of Bahawal Victoria hospital, Bahawalpur. A detailed proforma was designed to know the personal details including the patients' age, gender, address, and history of smoking, quantity of cigarette smoked and the duration of smoking in years. Later this smoking fashion was observed among different types of bronchogenic carcinomas. Patients who had been diagnosed earlier at some other centers were not include in our study. Similarly patients who presented with secondaries in the lungs or with lymphomas and mesotheliomas were excluded from the study. All results were presented in tabulated from and their percentage were calculated.

RESULTS

Out of thirty patients in our study, 26 (86.66%) were found to be smokers and 4(13.33%) were non smokers (Table No.I).

Table-I. Frequency of smoking with age and gender among cases of bronchogenic cancer

Age of patients		Gender		Smoking	
Decade	n (%)	M	F	S n (%)	NS n (%)
Fifth	2 (6.66)	2	--	2 (6.66)	--
Sixth	13 (43.33)	11	2	11 (36.66)	2 (6.66)
Seventh	9 (30.00)	8	1	8 (26.66)	1 (3.33)
Eight	4 (13.33)	3	1	3 (10)	1 (3.33)
Ninth	2 (6.66)	2	--	2 (6.66)	--
Total	30 (100)	26	4	26 (86.66)	4 (13.33)

n = number of cases, % = percentage, M = males, F = Females, S = smokers, NS = non=smokers

Moreover smoking was most common among males 25 (96.15%), While only one female was found to be smoker (table No.II). Among the smoker, 64.44% were exclusively cigarette smokers while 36.66% smoked Huqqa as well as cigarette. Smoking was as common in the male patients belonging to village of cities while 50% of females of rural environment were non-smoker (Table No.II). Two urban subjects smoked cigarette as well as Huqqa while 100% of the rural smokers smoked cigarette plus Huqqa.

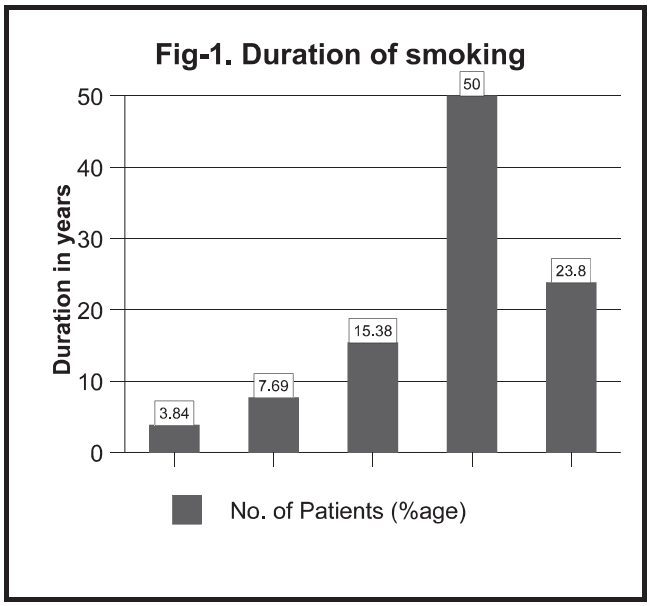
Table-II. Frequency of smoking with living conditions among males and females having bronchogenic Carcinoma (n=30)					
	Smokers		Non-smokers		
	Males n (%)	Females n (%)	Males n (%)	Females n (%)	Total
Urban	17 (56.66)	-	-	2 (6.66)	19 (63.34)
Rural	8 (26.66)	1 (3.33)	1 (3.33)	1 (3.33)	11 (36.66)
Total	25 (83.32)	1 (3.33)	1 (3.33)	3 (9.99)	30
N= number of cases, %= percentage					

All the smokers were smoking for more than 20 years and half of them for the last 25 to 30 years (Fig No.1). The smoker in our study were mostly heavy smokers (30.40%), smoking 16-20 cigarettes per day.(Table No.III)

Table-III. Quantity of Smoking)Duration Varies From 21-45years) (n=26)						
	Types of bronchogenic carcinoma					
No. Of Cigarettes / day For > 20 years		Sq n (%)	Sm n(%)	Ad (%)	La n (%)	Total n(%)
Chain	35 or more	1 (3.84)	-	-	2 (7.68)	3 (11.52)
Excessive	20-30	2 (7.68)	-	1 (3.84)	-	3 (11.52)
Heavy	16-20	7 (26.88)	3 (11.52)	-	-	10 (38.40)
Moderate	10-15	4 (15.36)	1 (3.84)	1 (3.84)	-	6 (23.04)
Light	1-9	3 (11.52)	1 (3.84)	-	-	4 (15.38)
N= number of cases, %=percentage, sq= squamous cell carcinoma, sm= small cell carcinoma, Ad= adenocarcinoma, La= large cell carcinoma						

Our study also discusses the cell carcinoma, 94.44% were smokers while in the cases of small cell carcinoma, 83.33% were smokers. Half of the cases with adenocarcinoma smoked and in those with large cell carcinoma, all (100%) were smokers. (Table No.III & IV).

Table-IV. Smoking in Cases of Various Types of Bronchogenic Carcinoma (n=30)					
Types	Smokers n(%)		Non smokers n(%)		Total n(%)
	Males	Females	Males	Females	
Squamous cell	17 (56.66)	Nil	Nil	1 (3.33)	18 (60.00)
Small cell	5 (16.66)	1 (3.33)	Nil	Nil	6 (20.00)
Aden	1 (3.33)	Nil	1 (3.33)	2 (6.66)	4 (13.33)
Large cell	2 (6.66)	Nil	Nil	Nil	2 (6.66)
N= number of cases, %=percentage, S/N = Smoker/Non smoker					



DISCUSSION

Tobacco use in the form of smoking, chewing and suffering is prevalent is throughout the world as well as in urban areas of Pakistan[7]. The nicotine molecule was produced over 60 millions yeas ago by the ancestral tobacco plant to punish herbivores. Today tobacco smoking punishes the bodies of the most highly developed species on this planet[8].

In the sub continent, the British ambassador at the court of the Moghul emperor Akber (1542-1605) introduced the emperor to smoking tobacco. The emperor, taking no habit spread among the people[9]. In addition to cigarettes, tobacco is smoked in unique local ways which include "beedi" (tobacco rolled in dry leaves), and "Huqqa" (Hubble Bubble)[10]. Bidi smoking is an important contributory factor in the development of bronchogenic carcinoma[11].

Smoking is on the rose in Pakistan. A survey done in 1994 showed that the prevalence of smoking in Pakistan's adult population aged 15 years and above was 21.6%. These rates were higher in males (36%) than female (9%)[12]. Out of 47 bands allowable international limits Looking at the growing tobacco industry in this country these figures are expected to be much higher now[13].

The risk of smoking is not just confirmed to persons who smoke but it also affects the individuals who live or work close to the smokers (Passive or Second hand smoking)[10] .

An increased prevalence of smoking as well as passive exposure was observed among medical students especially among final year student[14,15,16].

Cigarette smoking has been clearly and unanimously identified as a cause (about 90%) of all the lung cancers[17,18]. Tar products like polynuclear aromatic hydrocarbons, phenol, catechol, nitrosamines and quinolines arw known to be carcinogenic[19,20].

Although more than 80% of lung cancers are attributed to tobacco smoking/only a fraction of smokers (fewer than 20%) will develop lung cancer in their lifetime[21].

The risk is related number of cigarettes per day, duration of smoking, younger age at the onset of smoking, degree of smoke inhalation, tar and nicotine content of tobacco and use of filter.[22] On an average smoker shortens his life by five each cigarette smoked[19].

The ratio between smoker and nonsmoker patients with lung cancer is 8-20:1 as reported hy Hammund, Doll and Hill and other workers. Memon has already reported similar results in a population similar to ours. The risk is proportional to the number of cigarettes smoked , increasing to 25 times, for those who smoke two packs per day[23]. In our study 86.65% of the cases were found to be smokers making a 6:1 ratio of smokers to non-smokers. Our figure exceeded to those mentioned by Memon MA and Syed ZA being 4.66:1 AND 3.76:1 4.66:1 and 3.76:1 respectively. Shsharyar showed it to be 3.21:1[23]. The ratio of 5.11:1was calculated by Chaudhry M K[24] matched the most to our values.

Surprisingly, in Urban population. All males with bronchogenic carcinoma were smokers while only one female was non-smoker. In rural population 81.81% of patients were smokers and one male as well as one female were non-smokers.

We have also discussed separately the trends of

smoking among males and females. In males 96.15% were smokers, making smoker to nonsmoker ratio of 25:1. In females 25%were smokers, reserving the ratio of smokers to non-smoker to non-smoker and making it 1:3. In a polish study of 20 561 cases, women with lung cancer smoked less intensively and less frequently[25].
Coming to smoking habits, 57.69% of our study population smokers exclusively enjoyed cigarette smoking while 42.31% of the smokers smoked both the cigarettes as well as the traditional Huqqas. Similar smoking habits were observed by Chaudhry M.K[24]. i.e., 42.2% of the smokers smoked both the cigarettes and Hubble Bubble. We observed the smoking habits in different types of bronchogenic with smoking in the cases of squamous cell carcinoma, 94.44% of were smokers, 100% of the cases of small cell carcinoma and large cell carcinoma were smokers. Tobacco smoking was least common when patients of adenocarcinoma were evaluated. Lung cancer incidence rates by birth-cohorts were almost parallel to the smoking prevalence. However, among young women in 1950s birth-cohorts were not parallel to the smoking prevalence, which requires carful monitoring to confirm such findings[26].
In our study population, all the smokers were smoking for more than 2 decades and even one of them was smoking for the last 45 years.

Quantification of smokingis very important when we address the risk factors for bronchogenic carcinoma. Smoking more than cigarettes per day for a period of 20 years increase the risk of developing bronchogenic carcinoma to 40 folds. We have categroized our patients into five groups according to the show classification (JAMA 1985; 253: 2988). Majority of them were heavy smokers (38.40%) followed by moderated smokers (23.04%). Similar findings were observed by Chaudhry M.K[24].

In spite of its limitation like small number of patients, this study for the time reports smoking in cases of bronchogenic carcinoma from Southern Punjab.

CONCLUSION

Cigarette Smoking is frequently observed in the cases of bronchogenic carcinomas. Frequency and intensity of smoking was high among patients suffering from the three most frequent varieties of bronchogenic carcinoma: squamous cell, small cell , and large cell. The trend of smoking among cases of adenocarcinoma has been to be least common.

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