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Risk Factors of Urinary Bladder Cancer: An Epidemiological Study

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Abstract

An epidemiological study of Urinary bladder cancer was conducted on 106 patients with sex ratio 100♀♀: 265.5♂♂. The mean age at diagnosis was 56.65±1.338 years. Mean age at diagnosis for male patients (56.70±1.65 years) and female patients (56.5±1.2128 years) shows not much difference. Highest percentage (33.02%) of patients was seen in age group 60-69 years. Age at diagnosis ranged from 30 years to 95 years. Of the total patients of urinary bladder cancer 2 (1.89%) patients showed positive family history of malignancy who were male while no female patients with positive family history was recorded while 104 (98.11%) had sporadic occurrence of disease. As regards socioeconomic status, urinary bladder cancer patients belonging to skilled manual worker class, working as drivers, transporters, carpenters, factory workers and house wives (incase of female patients) were higher in number (33.02%). Among male patients low paid government employees (15.09%) show the highest percentage of malignancy. Highest percentage of carcinoma of urinary bladder is observed in the patients who had not attained school education 52 (49.06. The rural dwellers 59 (55..66%) were higher than urban dwellers 47 (44.34%) but the difference between the two was not significant ($P<0.1$). Patients coming from first cousin marriages were in highest number (34.90%). The co-efficient of inbreeding (F) calculated for urinary bladder patients is 0.024. Urinary bladder cancer patients who use tobacco (cigarette smoker and naswar eater) 58 (54.72%) were higher in number than those who did not use tobacco 48 (45.28%). Male smoker patients 38 (35.85%) were greater than female smoker patients 1 (0.94%). Distribution of urinary bladder cancer patients among different sub-ethnic groups (surnames) showed highest percentage in Pathan (21%) and lowest in Gujar (4.72%).

Introduction

The bladder is a hollow organ in the lower abdomen, which stores urine. The Bladder has a muscular wall that allows it to get larger and smaller as urine is stored or emptied. The wall of bladder is lined with several layers of transitional cells. Most cancers are named for the part of the body or type of cells in which they begin. About 90 percent of bladder cancers are transitional cell carcinomas, cancers that begin in the cells lining the bladder. In some cases, the transitional cells carcinoma spreads through the lining of the bladder and invades the muscular wall of the bladder. This is known as invasive bladder cancer. Invasive cancer may grow through the bladder wall and spread to the nearby organs. Bladder cancer cells may also be found in the lymph nodes surrounding the bladder. If the cancer has reached these nodes. It may mean that cancer calls have spread to the other lymph nodes and to distance organs, such as the lungs. The cancer cells in the new tumor are still bladder cancer cells. The new tumor is called metastatic bladder cancer rather then lung cancer because it has the same kind of abnormal cells that we found in the bladder (NIH Publication No. 97-1559, 2000).

The first sign of bladder cancer may include blood or pus in the urine. Painful and frequent urination, and possibly a burning sensation when urinating. A late sign may be a large mass felt upon examination (Nasu *et al.*, 1996). Bladder cancer is the sixth most commonly diagnosed malignancy in the United State, Approximately 53,200 new cases were expected to be diagnosed in 2000 (Greenlee *et al.*, 2000). The world health organization estimates that, globally, approximately 170,000 new cases of bladder cancer occur each

year, two third of them are occurring in developed countries and three quarter in males (Gerald 1996). International, the incidence of bladder cancer varies about 10-fold (Parkin *et al.*, 1992). The highest incidence rates for bladder cancer are found in industrialized countries such as the United States, Canada, France, Denmark, Italy, and Spain. Rates are in England, Scotland, and Eastern Europe. The lowest rates are in Asia and south America, where the incidence is only about 30% as high as in the United States (Miller et al., 1996). Approximately 80% of newly diagnoses cases in both men and women occur in people aged 60 years and older (Greenlee *et al.*, 2000). Among men, the highest rates are in white' non-Hispanics (33.1 per 100,000). The rates for black men and Hispanics men are similar and are about one half the white non-Hispanic rate (Miller *et al.*, 1996). For women, the highest rates are also in white non-Hispanic and are about twice the rate for Hispanics. Black women, however, have higher rates then Hispanic women are (Miller *et al.*, 1996). The incidence of bladder cancer increases dramatically with age among men approximately two to three times higher then those aged 55-68 years, and about 15 to twenty times higher then those aged 30-54 years (Miller et al., 1996). Bladder cancer is more then 2.5 times more likely to be diagnosed in men than women (Greenlee; 2000). Females are approximately twice as likely as males to die from the disease as greater percentage of females are diagnosed at more advanced stages than men (Fleshner et al., 1996 and Kiemeney et al., 1994). In addition to relative delays in diagnoses among women, other factors contributing to the higher death rate may include the higher portion of non-transitional cell cancer histologies that occur in women; the relative thinness of the elderly adult female bladder (perhaps permitting more rapid extravesical spread); possible difference in the relative proportion of higher grade transitional cell carcinomas between men and women; and the older median age at presentation in women than men (.Mansson et al., 1993). Several populations with a variety of exposures appear to be at higher risk for developing bladder cancer. By far the greatest known environmental risk factor in the general population is cigarette smoking, with individuals who smoke having a fourfold to sevenfold increased risk for developing bladder cancer than individuals who have never smoked (Morrison 1976 and Burch et al., 1989). The most important known risk factor for bladder cancer is cigarette smoking; cigarette smokers develop to the three times more often than nonsmokers. Risk is reduced with cessation of smoking, but a relatively small decrease in incidence is seen for the first 5 to 7 years after cessation. Even after 10 years, the risk of an individual developing bladder cancer is still almost twice that of an individual who has never smoked (Clavel *et al.*, 1989). It is estimated that about 50% of these cancers in men and 30% in women are due to smoking. Occupational exposures may account for up to 25% of all urinary bladder cancers (Miller *et al.*, 1996). Among the chemicals implicated in smoking-induced bladder cancer are amino-biphenyl and its metabolites (Hoffmann *et al.*, 1969). Several studies have indicated that specific genotypes and phenotypes of many enzymes and their activities, particular in the liver and urothelium, associated with susceptibility to smoking-induced bladder cancer and bladder cancer induced by other aryl amines, particularly in industrially exposed populations (Risch *et al.*, 1995; Horn *et al.*, 1995; Bell *et al.*, 1993; Lower *et al.*, 1979; Cartwright *et al.*, 1982 and Hanke and Krajewska 1990). As early as 1985, workers in the dyestuffs industry showed a high risk of bladder cancer that was later associated with exposure to certain aromatic amines, a class of compounds used to make dyes (Silverman et al., 1992a). Two of these chemicals, benzidine and 2-naphthylamine, are now known to be potent bladder carcinogens in humans (Case, 1954). Dominique et al. (1999) in their cohort study found smoking was a strong risk factor, They found an inverse relation between total fluid intake and bladder cancer incidence in an other study Dominique et al. (1999) found no significant association between total fruit and vegetable intake, however they observed that high intake of cruciferous vegetables, such as broccoli, may substantially reduce bladder cancer risk. Although occasional familial clusters have been anecdotally reported (Fraumeni, Thomas, 1967; 1974 and McCullough et al., 1975) and bladder cancer (as well as upper tract transitional cell carcinoma) is part of the lynch family cancer syndrome II, (Lynch, 1990) there is no evidence that tendencies towards developing bladder cancer are inherited (Kiemeney et al., 1996). The present study is being carried out to find out the incidence of urinary bladder cancer in Pakistani population and its possible risk

factors like, environmental factors, biological factors and or genetic factors. It is also conducted to know the prevalence of disease in different sub-ethnic groups of Pakistani population.

Material and Methods:

The research data were collected form Nuclear Medicine Oncology and Radiotherapy Institute, Islamabad (NORI), Center for Nuclear Medicine and Radiotherapy, Quetta (CENAR) and Bahawalpur institute of Nuclear Medicine and Oncology (BINO). The study is based on 106 patients of Carcinoma of Urinary Bladder (CaUB) in which 77 were male and 29 were female patients. The Institutes were visited from March 2000 to April 2001. Information was collected on the questionnaire by interviewing the patients or their close relatives. The data collected on urinary bladder contained their surname, age at diagnosis, age at present age at marriage, genetic relationship of husband and wife, husband's parents, wife's parents. to ascertain the marriage type. Family history of the patient includes information about the presence of CaUB in patient's first-degree relatives, second degree relatives and third degree relatives. Information of any other disease in the patients or in his/her relatives was also recorded. Sporadic cases were also recoded. Parental genetic relationships were categorized as occurring in the families, first cousin (1C), first cousin once removed ($1^{1/2}$ C), Second cousin (2C), distant relatives (DR), beradri (BR) and unrelated (UR) marriages. Occupation was grouped in the following categories after Population Growth Survey Federal Bureau of Statistics, Division, Government of Pakistan Islamabad 1988.

As regards education attained at school, college and university level was recoded. Those who did not attend school were categorized as none levels of education. Patients life style/habit was recoded like use of tobacco (smoking, cigarette and hukka) naswar, tobacco+naswar and diet like use of meat (animal fats), vegetables, pulses, rice etc.

Pedigree of patients were drawn at least up to three or more generations. The pedigrees were analyzed to ascertain the possible mode of inheritance, i.e. recessive, dominant, X-linked or some probably complex inheritance of these cancer types. The statistical analysis for this study include percentage, mean standard error and chi-square test for comparison. Mean co-efficient of inbreeding were calculated by following Wright's (1992) method.

Results:

The number of the patients diagnosed, as Urinary Bladder Cancer patients is 106 (53%) in the sample. Of which male were 77 (72.64%) and female were 29 (27.36%). Sex ratio was 100♀♀:265.5♂♂. The female patients are highly significantly less in number compared to male patients ($\chi^2_{(1)}$= 21.72; P<0.001). The mean age at present was 59.09±1.33 years and mean age at diagnosis was 56.65±1.338 years. The patients were interviewed an average after 2.44±0.274 years of their diagnosis.**(Table 1 Fig. 1)**

Mean age at present of male patients was 58.94±1.60 years and mean age at diagnosis was 56.70±1.65 years. Male patients were interviewed an average age after 2.246±0.266 years of their diagnosis. The mean age at present for female patients was 59.48±2.39 years and mean age at diagnosis of female patients was 56.517±2.218 years. The female patients were interviewed an average after 2.96±0.71 years of their diagnosis (Table 17; Fig.17). Patients of carcinoma of urinary bladder were diagnosed for three categories i) Transitional Cell Carcinoma (TCC) ii) Squamous Cell carcinoma (SCC) and iii) Adeno Cell Carcinoma (ACC). **(Table 2; Fig2)** Transitional Cell Carcinoma (TCC) patients are 88 (83.02%) while Squamous Cell Carcinoma (SCC) patients are 12 (11.32%) and Adeno Cell Carcinoma (ACC) patients are six (5.66%).

Of 77 male patients TCC were 63 (81.82%) and of 29 females TCC were 25 (86.20%). No female was recorded as ACC in this sample. Mean age at present in TCC patients was 59.90±1.41 years and mean age at diagnosis

was 57.52±1.42 years. They were interviewed an average after 2.579±0.32 years of their diagnosis. Mean age at present in case of SCC patients was 55.58±4.67 years and mean age at diagnosis was 53.83±4.75 years. On average they were interviewed after 1.75±0.42 years of their diagnosis. Mean age at present in case of ACC patients (n=6) was 54.16±7.33 years and mean age at diagnosis was 52.33±7.033 years. They were interviewed an average after 1.83±0.66 years of diagnosis

Table. 3, 4 (Fig. 3, 4) give the distribution of urinary bladder cancer patients in different age groups. **Table. 3 (Fig. 3)** shows the distribution of age at present of urinary bladder cancer patients in different age groups. The maximum age at present in male patients observed was 95 years and minimum was 30 years and Maximum age at present in female patients was 87 years and minimum age at present was 40 years. The highest number in case of male patients (n=24; 22.64%) was observed in present age group of 60-69 years. In the same age group (60-69) highest percentage (n=11; 10.28%) was observed of female patients. Over all in total bladder cancer patients maximum percentage (n=35; 33.02%) was also observed in the present age group of 60-69 years.

Table 4. (Fig.4) shows the distribution of age at diagnosis of urinary bladder cancer patients in different age groups. The maximum age at diagnosis in urinary bladder cancer patients was observed 90 years and the minimum age at diagnosis was 24 years. In case of females, maximum age at diagnosis was 80 years and minimum age at diagnosis was 35 years.

In all bladder cancer patients maximum percentage (n=34; 32.07%) was observed in the age group60-69 years. In this age group (60-69years) male were 22.64% and female were 9.43%. Compared to female patients a higher percentage of male patients (11.32%) was diagnosed for carcinoma of urinary bladder between <30 to 39 years of age. A higher percentage of females was diagnosed for urinary bladder patients at an age ranging from 40 to 49 years (7.55%) compared to <30 to 39 years (0.94%).

Table. 5 (Fig. 5) shows the distribution of urinary bladder cancer patients in different parental relationships. The highest number (n=37; 34.90 %) of patients comes from the first cousin (1C) marriages. The patients with unrelated (UR) marriage relationship are next higher group diagnosed (n=27; 25.47 %) for this cancer type. In first cousin marriage relationship male patients (n=26; 24.53 %) out number the female patients (n=11; 10.38 %). The co-efficient of inbreeding (F) calculated for urinary bladder cancer patients (n=106) is F=0.024. Co-efficient of inbreeding for male patients (F=0.024) and female patients (F=0.0247) shows no difference in values. Percentage inbreeding in parents of all patients is 47.17%. Inbreeding in parents of male patients is 48.05% and in that of female patients is 44.17%.

In the urinary bladder cancer patients there were two (1.89%) families with positive family history with one first degree affected relative. While sporadic cases were 104 (98.11%). There was no female patients with positive family history **(Table 6; Fig.6).**

The mean age at diagnosis of the patients with positive family history (n=2) was 50.44±10.60 years and mean age at diagnosis of patient's first-degree relatives with same disease was 62.00±1.77 years. The mean age at diagnosis of sporadic cases (n=104) was 56.84±1.345 years.

Other diseases in the relatives of urinary bladder cancer patients are listed in **(Table 7; Fig. 7).** Most of patient's relatives were suffering from Asthma (n=25; 23.58%), Tuberculosis (n=24; 22.64%), and Ischemic heart disease (n=19; 17.92%).

Levels of education attained by the urinary bladder cancer patients are listed in the **(Tables. 8, Fig. 8).** The highest percentage (n=52; 49.06%) of patients was those who did not attain school education. The next higher number is of those who attained education at school level (up to matric) (n=42; 39.62%). Urinary bladder cancer male patients (n=37; 34.62%) with school level education were higher than female patients (n=5; 4.72%) with same education level.

Socio-economic status of carcinoma of urinary bladder patients is given in **(Table 9; Fig 9).** The highest number (n=35; 33.02%) of patients are employed as skilled-manual workers occupying such jobs as production

related workers, drivers, transporter, carpenter, and housewives, in case of female patients. Female patients were engaged in skilled manual in a higher number (25.47%). Low paid employments for the next higher category in the case of male patients (15.09%).

Table. 10 (Fig. 10) shows distribution of the urinary baldder cancer patients among different sub-ethnic groups (surname) recorded in this study.

Percentage of the patients was calculated where each surname has a representation of at least five patients. All those surnames, with less than five patients were grouped as "others".

The highest percentage of urinary bladder cancer patients is seen in Pathan sub-ethnic group (n=23; 21.71%). The next sub-ethnic group with higher number of urinary bladder cancer patients is of Baloch (n=12; 11.32%). The least number of prostate cancer patients was observed in Gujars (n=5; 4.72%). Syed 9.43%), Malik (9.43%) and Awan (9.43%) sub-ethnic groups also have a higher percentage of urnary baldder cancer.

Among sub-ethnic groups high percentage of male urinary bladder cancer patients was observed in Pathan (14.15%), Baloch (9.43%), Syed (7.55%) and Abbasi (6.60%). A highest percenatge of female patients is also seen in Pathan (7.55%) sub-ethnic group only.

Table. 11 (Fig.11) shows the distribution of urinary bladder patients according to their life style (smoking/non-smoking behavior). The over all percentage of non-smokers (n=48; 45.28%) was higher than smokers (n=39; 36.79%) while eleven patients (10.38%) were naswar eaters and eight (7.55%) were both cigarette smokers and naswar eater.

Overall tobacco users (smokers, naswar eater and smokers+naswar eater) were higher in number (n=58; 54.72%) than the non-users (n=48; 45.28%). The chi square ($\chi^2_{(1)}$= 0.94; P<0.10).

In case of male patients cigarette smokers (n=38; 35.85%) were higher in number than non-smokers (n=22; 20.75%). The number of female cigarette smokers was negligible (n=1, 0,94%). Habitual cigarette smokers and naswar eaters male patients (n=55; 51.89%) were significantly higher in number than those patients with no such habit (n=22; 20.75%) ($\chi^2_{(1)}$=4.26; P<0.025).

There seems to be no effect of diet in this study, on the development of carcinoma of urinary bladder cancer. There are two main groups, one is meat eater (34.90%) and the other is vegetarian (35.85%). These two groups do not show any appreciable difference in the number of patients preferring one of these two dietary habits. A small number of patents prefer taking rice (9,43%) or pulses (8.49%). **(Tables 12)**

Urinary bladder cancer patients that fall in the skilled manual class mainly includes production related workers, drivers, transporters, painters, carpenters and housewives, in case females, were living in rural areas (n=19; 17.92%) compared to those who were living in urban localities (n=16; 15.09%). Bladder cancer patients falling in intermediate class were mainly living in urban areas (n=12; 11.32%) while skilled non-manual (n=10; 9.43%) and unskilled (n=9; 8.49%) were dwelling in rural areas. The maximum number (n=10; 9.43%) of male patients working as skilled non-manual jobs were rural dwellers and from intermediate class were urban dwellers (n=6; 5.66%). The maximum number (n=15; 14.15%) of female patients working as housewives (skilled manual) were from rural localities as compared to urban areas (n=12; 11.32%).

Maximum number (n=12; 11.32%) of male patients who did not attain school level education were working as skilled non-manual jobs. The next higher number (n=11; 10.38%) was of those who attained school level education were working on intermediate jobs. In case of female patients maximum number (n=24; 22.64%) was of skilled manual (housewives) who did not attain school level of education.

Male urinary bladder cancer patients holding intermediate government low paid jobs (n=11; 10.38%), skilled manual (n=8; 7.55%) and jobless/retired (n=8; 7.55%) were heavy smokers. In case of female patients holding skilled manual (housewives) (n=24; 22.64%) were non-smokers. Only one (0.94%) female patient holding skilled job was smoker.

In the present study there was no significant difference of incidence of urinary bladder cancer between who attained school level education and who have attained non school education ($\chi^2_{(1)}$ = 0.0378; P>0.995). In the present study highest percentage (n35; 33.02%) is seen for skilled manual workers occupying such jobs as production related workers, transporters, drivers, carpenter, plumbers, bus-conductor, hairdressers and housewives in case female patients, this study agrees with review report reported by Logan (1982). According to him minimum incidence and mortality rates of urinary bladder cancer was observed in the professional class and highest ratios were observed for men in skilled manual class. Among the men the occupations with high ratios for manual workers mortality were chemical workers, plumbers, bricklayers, painters and decorators, general laborers, postmen, bus-conductor, dock laborese, publicans and hairdressers.

In the present study, incidence of urinary bladder cancer in the sub-ethnic group of Pathan (n-23; 21.71%) was highest than any sub-ethic group. In the Western countries urinary bladder cancer in mainly thought to be disease of white men. Miller *et al.*, (1996) reported rates of urinary bladder cancer for black men and Hispanic men are similar and are about one half the white non-Hispanic men. Steinitiz and Costin (1971) reported that on average the incidence of urinary bladder cancer in ethnic group other than white is lesser than half of white of the same sex. With the exception of black females for whom the incidence of urinary bladder cancer is on average three quarters of that of white females.

In the present study overall urinary bladder cancer patients, non-smokers (n=48; 45.28%) were higher than smokers (n=39; 36.79%), but in case of male patients habitual cigarette smokers and naswar eaters patients 55 (51.89%) were significantly higher than those patients with no such habits ($\chi^2_{(1)}$ = 4.26; P<0.05) these results agree, in case of male patients, with the work of Miller *et al.*, (1996) who reported that 50% of urinary bladder cancer in men and 39% in women are due to smoking. In a cohort analyses of incidence of urinary bladder cancer in United State and Denmark (Hoover and Cole, 1971) showed a positive association with consumption of tobacco and incidence of urinary bladder cancer in these countries.

In the present study rural dwellers patients of urinary bladder cancer (n=59; 55.66%) were higher than urban (n=47; 44.34%) dwellers ($\chi^2_{(1)}$ = 1.36; P<0.1). Kuratsumie and Hueper (1958) observed that the incidence of bladder cancer was higher in the urban areas compared to rural areas. This difference might be due to large proportion of Pakistani population is residing in rural areas whereas in industrialized countries, polycyclic aromatichydrocabon derived from incomplete combustion of fossil fuel, has been suggested as contributing factor for incidence of bladder cancer (Huper and payne; 1960). In the present study no significant effect of diet is observed in the incidence of urinary bladder cancer. Dominique *et al.*, (1999) found no significant association between total fruit and vegetable intake and incidence of urinary bladder cancer morality and per capita consumption of fat and protein that does not agree wit our results. The difference might be due to as per capita consumption of fat and protein in Pakistani population.

Table No.1: Age at Present and age at diagnosis of patients.

Values	Male		Female		Total	
	Age at Present	Age at Diagnosis	Age at Present	Age at Diagnosis	Age at Present	Age at Diagnosis
X±S.E	58.98±1.06	56.74±1.64	59.48±2.35	56.55±2.17	59.12±1.32	56.68±1.33

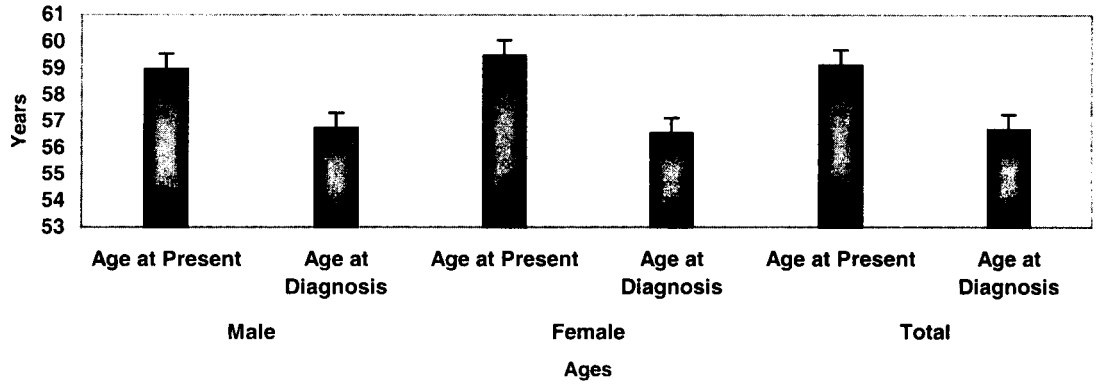

Fig. No.1: Age at Present and age at diagnosis of patients.

Table No.2: Distribution of patients according to Histopathalogy of the disease

	Male		Female		Total	
Histopathalogy	**No. of patients (n)**	**Percentage (%)**	**No. of patients (n)**	**Percentage (%)**	**No. of patients (n)**	**Percentage (%)**
Transitional Cell Carcinoma (TCC)	63	59.43	25	23.58	88	83.02
Squamous Cell Carcinoma (SCC)	8	7.55	4	3.77	12	11.32
Adeno Cell Carcinoma (ACC)	6	5.66	0	0.00	6	5.66

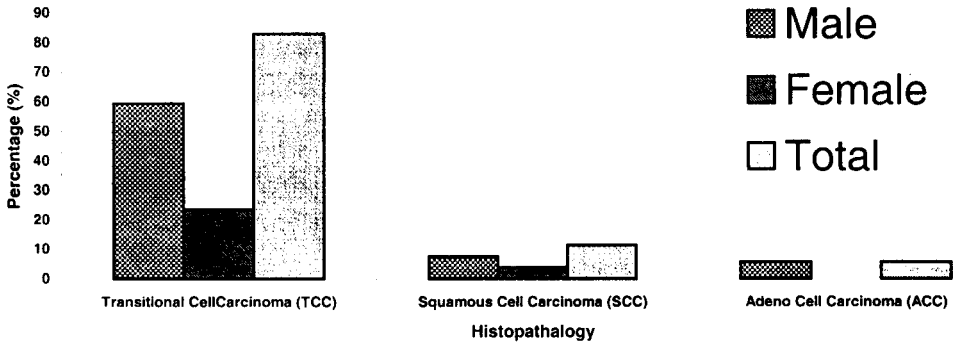

Fig. No.2: Distribution of patients according to Histopathalogy of the disease

Table No.3: Distribution of age at present in-patients in different age groups.

Age Groups	Male	Female	Total
	No. of Patients (n) (%)	No. of Patients (n) (%)	No. of Patients (n) (%)
<30-39	9 (8.49)	0 (0.00)	9 (8.43)
40-49	10 (9.43)	8 (7.55)	18 (16.98)
50-59	15 (14.15)	5 (4.72)	20 (18.87)
60-69	24 (22.64)	11 (10.28)	35 (33.02)
70-79	13 (12.26)	3 (2.83)	16 (15.09)
80+	6 (5.66)	2 (1.89	8 (7.55)
Total	77 (72.64)	29 (27.36)	106 (100.00)

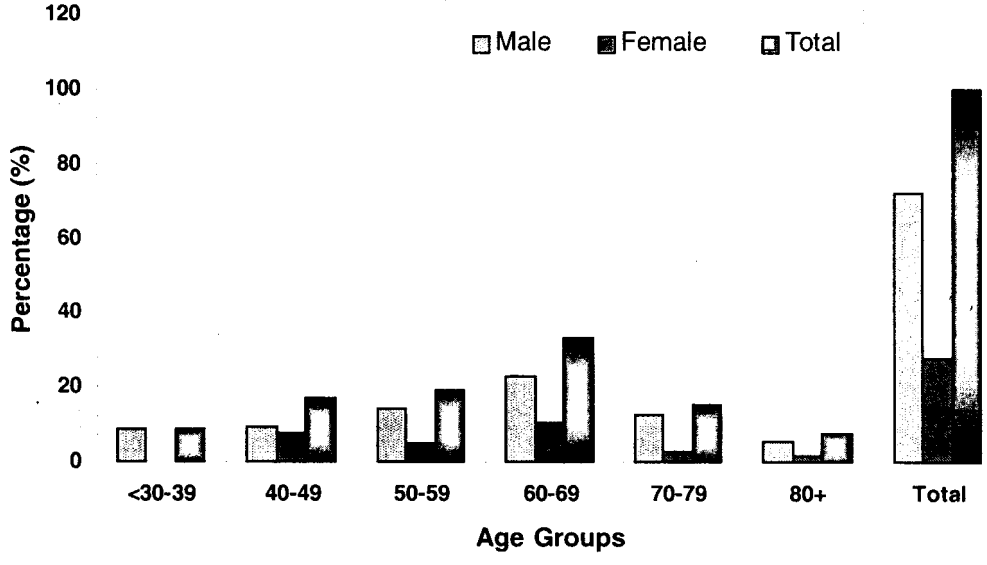

Fig. No.3: Distribution of age at present in-patients in different age groups.

Table No.4: Distribution of age at diagnosis in-patients in different age groups.

Age Groups	Male	Female	Total
	No. of Patients (n) (%)	No. of Patients (n) (%)	No. of Patients (n) (%)
30-39	12 (11.32)	1 (0.94)	13 12.26
40-49	10 (9.43)	8 (7.55)	18 16.98
50-59	17 16.04	6 5.66	23 21.70
60-69	24 22.64	10 9.43	34 32.07
70-79	10 9.43	3 2.83	13 12.26
80+	4 3.77	1 0.94	5 4.72
Total	77 72.64	29 27.36	106 100.00

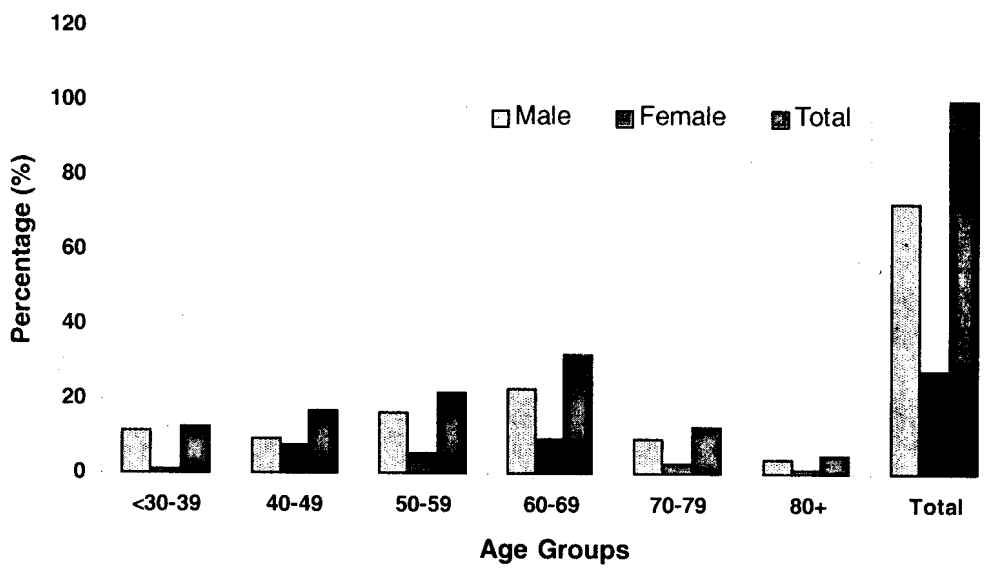

Fig. No.4:Distribution of age at diagnosis in-patients in different age groups.

Table No.5: Distribution of patients in different parental marriage types and their F-Values

Degree of relation	Male			Female			Total		
	n	%	F-Value	n	%	F-Value	n	%	F-Value
1C	26	24.53		11	10.38		37	34.90	
1½C	5	4.72		0	0.00		5	4.72	
2C	6	5.66		2	1.89		8	7.55	
BR	9	8.49		7	6.60		16	15.09	
DR	9	8.49	0.024	4	3.77	0.0247	13	12.26	0.024
UR	22	20.75		5	4.72		27	25.47	
Total	77	72.64		29	2736		106	100.0	

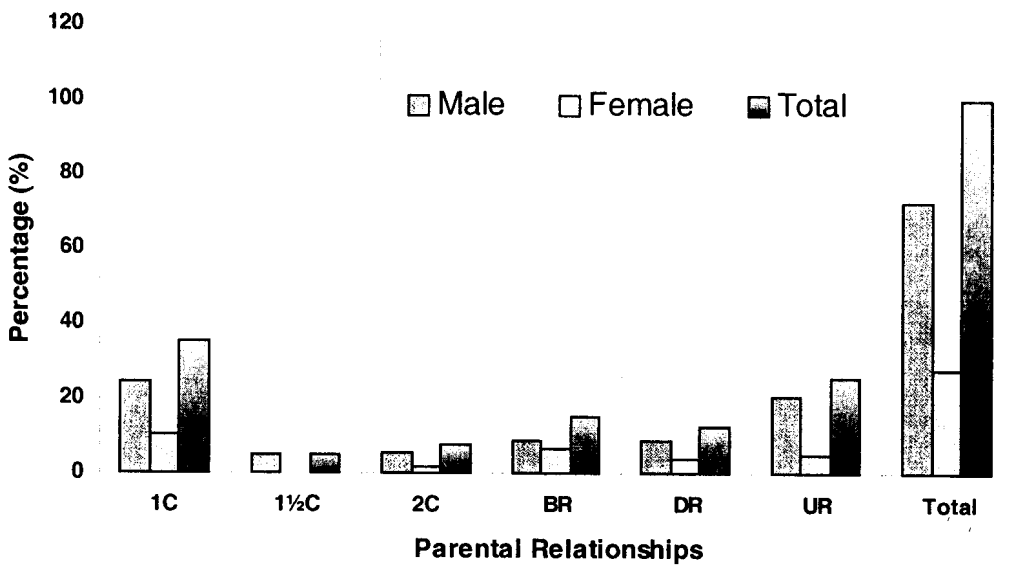

Fig. No.5: Distribution of patients in different parental marriage types and their F-Values

Table No.6: Family History of Patients

Values	Male		Female		Total	
	n	%	n	%	N	%
Family History positive	2	1.89			2	1.89
Sporadic	75	70.75	29	27.35	104	98.11
Total	77	72.64	29	27.35	106	100.00

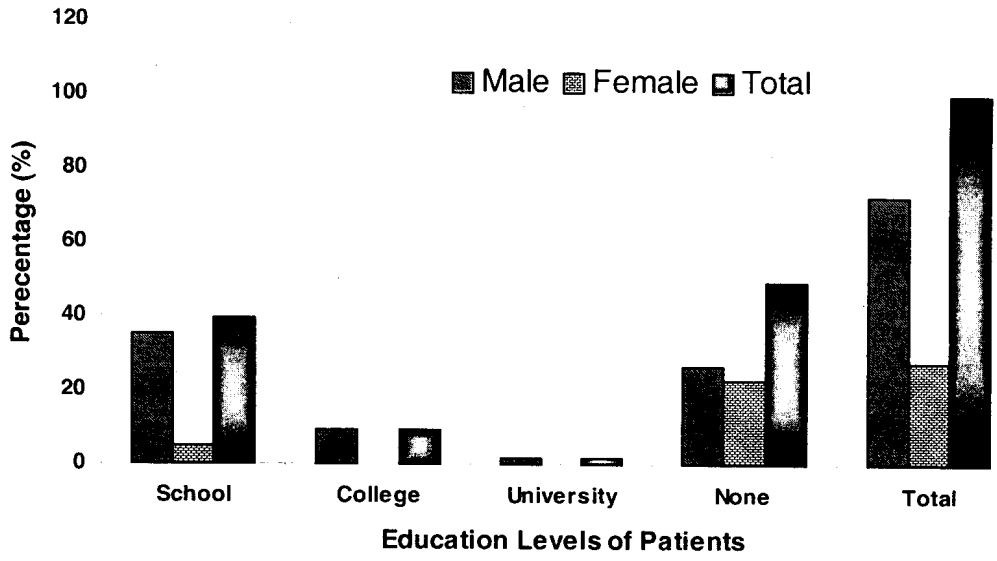

Fig. No.8: Educational status of patients

Table No.9: Occupational status of patients

Occupation	Male		Female		Total	
	No. of patients (n)	Percentage (%)	No. of patients (n)	Percentage (%)	No. of patients (n)	Percentage (%)
Professional and managerial (C-I)	4	3.77	0	0.00	4	3.77
Intermediate (C-II)	16	15.09	2	1.89	18	16.98
Skilled Non-manual (C-III)	15	14.15	0	0.00	15	14.15
Skilled (C-VI)	8	7.55	27	25.47	35	33.02
Partly Skilled (C-V)	11	10.38	0	0.00	11	10.38
Unskilled (C-IV)	11	10.38	0	0.00	11	10.38
Jobless / Retired (C-VII)	12	11.32	0	0.00	12	11.32
Total	**77**	**72.64**	**29**	**27.36**	**106**	**100.00**

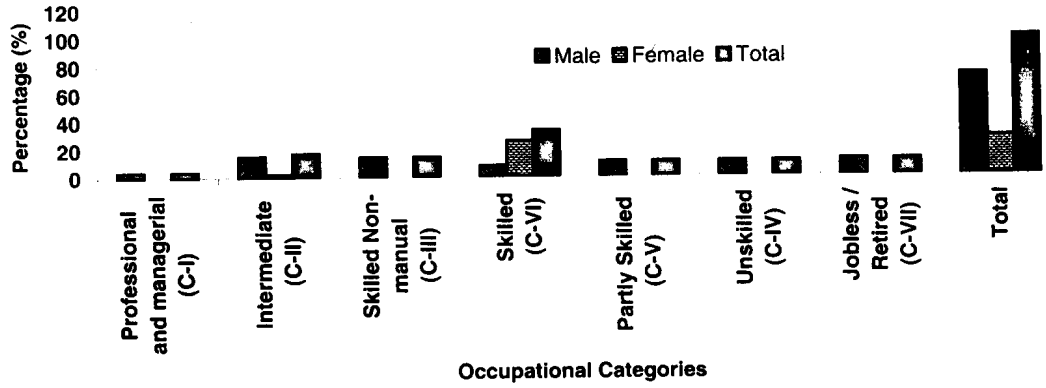

Fig. No.9: Occupational status of patients

Table No.10: Sub-ethnic / Surname distribution of patients.

Surnames	Male		Female		Total	
	No. of patients (n)	Percentage (%)	No. of patients (n)	Percentage (%)	No. of patients (n)	Percentage (%)
Pathan	15	14.15	8	7.55	23	21.71
Baloch	10	9.43	2	1.89	12	1132
Syed	8	7.55	2	1.89	10	9.43
Abbasi	7	6.60	1	0.94	8	7.55
Malik	6	5.66	4	3.77	10	9.43
Awan	5	4.72	5	4.72	10	9.43
Bhatti	5	4.72	1	0.94	6	5.66
Rajput	4	3.77	3	2.83	7	6.60
Gujar	3	2.83	2	1.89	5	4.72
Others	14	13.21	1	0.94	15	14.15
Total	**77**	**72.64**	**29**	**27.36**	**106**	**100.00**

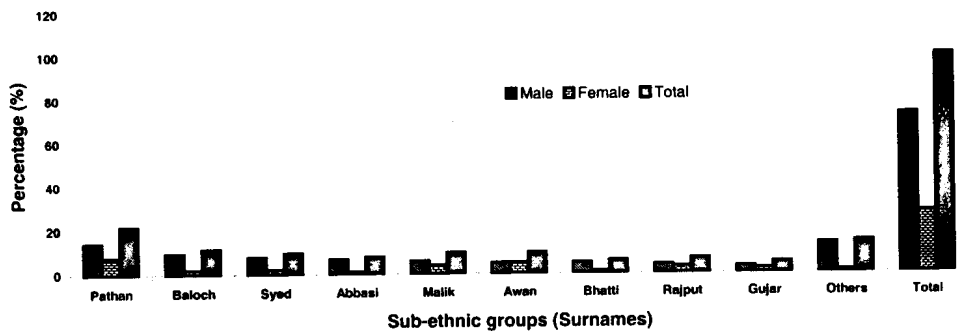

Fig. No.10: Sub-ethnic / Surname distribution of patients.

Table No.11: Life Style (Smoking/non smoking) in-patients.

Life style	Male		Female		Total	
	N	%	n	%	n	%
Smoker	38	35.85	1	0.94	39	36.79
Naswar eater	10	9.43	1	0.94	11	10.38
Smoker and Naswar eater	7	6.60	1	0.94	8	7.55
Non-smoker	22	20.75	26	24.53	48	45.28
Total	**77**	**72.64**	**29**	**27.36**	**106**	**100.00**

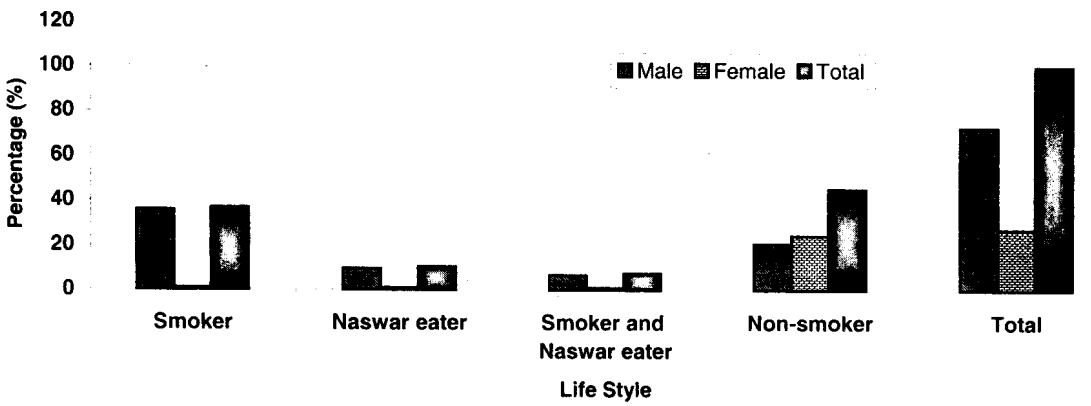

Fig. No.11: Life Style (smoking/non smoking) in-patients.

Table N.12: Distribution of patients according to their diet intake.

Diet	Male		Female		Total	
	n	%	n	%	n	%
Meat (Animal fat)	30	28.30	7	6.60	37	34.90
Vegetables	26	24.53	12	11.32	38	35.85
Rice	8	7.55	2	1.89	10	9.43
Pulses	5	4.72	4	3.77	9	8.49
Others	8	7.55	4	3.77	12	11.32

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