

Profile of Tobacco and Non-Tobacco Related Cancer Patterns In Males of Tertiary Care Hospitals in Guntur District, Andhra Pradesh

R. Purnamma¹,

¹Assistant Professor, Department of Community Medicine, Guntur Medical College, Guntur, A.P

Abstracts:

Background: Tobacco use is the single most preventable cause of adult death and disease in the world today this fact has been accepted and is being emphasized by the world health organization and all other agencies concerned with human health in the world. The total number of tobacco users in the world has been estimated at 1.2 billion, which is expected to rise to 1.6 billion during 2020s. There are 100 million deaths had occurred due to smoking in 20th century, with the same trends there will be 1 billion deaths in 21st century. Tobacco use alone accounts for about 40 per cent of all cancers in India. "About 275 million Indians (35 per cent of adult population and 14.1 per cent of children aged 13-15 years) are tobacco users, mainly smokeless tobacco. ⁽¹⁾ Worldwide, the number of deaths caused by tobacco is expected to rise from around 6 million a year now to more than 8 million by 2030, according to the World Health Organisation. According to the Global Adult Tobacco Survey, 26 percent of adults in India consume smokeless tobacco - 33 percent of men and 18.4 percent of women. Smokeless tobacco can cause oral and other cancers, as well as other mouth diseases and heart disease.

Objectives:

- To study patients suffering from tobacco & non-tobacco related cancers in relation to Demographic attributes.
- To study tobacco & non-tobacco related cancer patients in relation to selected Environmental attributes.
- To study tobacco & non-tobacco related cancer patients in relation to life style factors.

Materials and Methods:

Study design: Cross-sectional hospital based study.

Sample size: About 750 male subjects aged between 1-85 years, who were non-institutionalized were included in the study. The sample was taken according to the prevalence (35%) of tobacco-related cancers in India.

Setting: The study was conducted at 1) Government Guntur General Hospital, Guntur 2) Cancer Research centre, Chinakakani 3) Bommidala Cancer Care Centre, Pedakakani of Guntur district.

Period of study: The study was conducted over period of one year from October 2013 –September 2014.

Method of data collection: The data was collected by using a semistructured, pretested questionnaire, from patients attending radiotherapy departments of above study setting after taking their informed oral consent.

Keywords: Tobacco related cancers, Non-Tobacco related cancers, male cancers, Tertiary care hospitals, Guntur.

I. Introduction

Observations:

Table 1: Cancer In Males In Relation To Age

AEG GROUP	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
1-15 years	0 (0%)	0 (0%)	0 (0%)
16-25	21 (84%)	4 (16%)	25 (100%)
26-35	46 (90%)	5 (10%)	51 (100%)
36-45	152 (90.5%)	16 (9.5%)	168 (100%)
46-55	170 (90.4%)	18 (9.6%)	188 (100%)
56-65	165 (92.2%)	14 (7.8%)	179 (100%)
66-75	107 (93.8%)	7 (6.2%)	114 (100%)
76-85	19 (76%)	6 (24%)	25 (100%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The Proportion of Tobacco related cancers are increased with age compared with the Proportion of Non-Tobacco related cancers.

Table 2: Cancer In Males In Relation To Education

EDUCATION	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
ILLITERATES+FUNCTIONALLY ITERATES	361 (94.7%)	51 (5.3%)	412(100%)
LITERATES	319 (86.9%)	19 (13.1%)	338 (100%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The proportions of both Tobacco and non Tobacco related cancers are seems to be significantly increased among illiterate subjects with Yates corrected Chi-square was 9.55(P - 0.00023).

Table 3: Cancer In Males In Relation To Occupation

OCCUPATION	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
UNSKILLED	485 (90.3%)	52 (9.7%)	537(100%)
SKILLED	85 (89.5%)	10 (10.5%)	95(100%)
CLERICAL	50 (100%)	0	50 (100%)
MANAGERIAL	25 (100%)	0	25 (100%)
PROFESSIONAL	12 (70.6%)	5 (29.4%)	17(100%)
UNEMPLOYED	23 (88.5%)	3 (11.5%)	26 (100%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The proportions of Tobacco related cancers are seen to be more among clerical and managerial male subjects compared to other nature of work.

Table 4: Cancer In Males In Relation To Income

INCOME	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
ABOVE POVERTY LINE	200 (86.9%)	30 (13.1%)	230 (100%)
BELOW POVERTY LINE	480(92.3%)	40 (7.7%)	520 (100%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The Proportion of Tobacco related cancers are seen more among those fall in BPL with Yates corrected Chi-square value 4.78(p=0.028)

Table 5: Cancer In Males In Relation To Family Residence

RESIDENCE	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
URBAN	240 (91.3%)	23(8.7%)	263 (100%)
RURAL	440 (90.3%)	47 (9.7%)	487 (100%)
TOTAL	680(90.67%)	70 (9.33%)	750 (100%)

The Proportion of Tobacco related cancers are seen insignificantly more in non- urban area compared to urban area (Chi-square Test Is 0.08. P Value: 0.7).

Table 6: Cancer In Males In Relation To Fuel For Cooking

FUEL USED FOR COOKING	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
LPG GAS	288 (87.8%)	40 (12.2%)	328 (100%)
FIRE WOOD	320 (94.2%)	20 (5.8%)	340 (100%)
MULTIPLE	72 (87.8%)	10 (12.2%)	82 (100%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The Proportion of Tobacco related cancers are more using firewood followed by LPG gas

Table 7: Cancer In Males In Relation To Diet

DIET	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
MIXED	600 (92.3%)	50 (6.7%)	650 (100%)
VEGETARIAN	80 (80%)	20 (20%)	100 (100%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The proportion Tobacco related cancers were seems to be significantly increased among mixed diet subjects with Yates corrected Chi-square was 14.09 (P - 0.00017).

Table 8: Cancer In Males In Relation To Fiber In Diet

FIBER IN DIET	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
ADEQUATE FIBER	162 (91.5%)	15 (8.5%)	177 (100%)
INADEQUATE FIBER	518 (90.4%)	55 (9.6%)	573 (100%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The Proportion of Tobacco related cancers are taking inadequate fibre with Yates corrected Chi-square was 0.09 (P = 0.76).

Table 9: Cancer In Males In Relation To Smoking

SMOKING TOBACCO HABIT	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
PRESENT	643 (100%)	0 (0)	643 (100%)
ABSENT	37 (34.6%)	70 (65.4%)	107 (100%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The Proportion of Tobacco related cancers are seen more among those having habit of smoking Tobacco with Yates corrected Chi-square was 456.26 (P- 0.0000001)

Table 10: Cancer In Males In Relation To Chewing

CHEWING TOBACCO HABIT	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
PRESENT	298 (100%)	0	298 (100%)
ABSENT	390 (86.2%)	70 (13.8%)	452 (100%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The Proportion of Tobacco related cancers are significantly high among Tobacco chewers. (Yates corrected Chi-square Test was 49.09 with P Value: 0.0000001).

Table 11: Cancer In Males In Relation To Multiple Modes Of Smoking

MULTIPLE MODES OF TOBACCO INTAKE	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
YES	225 (80.9%)	53 (19.1%)	278 (100%)
NO	455 (96.4%)	17 (3.6%)	472 (100%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The Proportion of Tobacco related cancers are seen more among those having habit of multiple modes of smoking Tobacco with Yates corrected Chi-square Test was 47.62. P = 0.000001

Table 12: Cancer In Males In Relation To Alcohol

ALCOHOL CONSUMPTION	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
YES	526 (97.8%)	47 (8.2%)	573 (100%)
NO	154 (87%)	23 (13%)	177 (100%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The Proportion of Tobacco related cancers are seen more among those having habit of Alcohol consumption with Yates corrected Chi-square was 3.13 (P = 0.07).

Table 13: Total List Of Male Cancers

TOTAL MALE CANCERS	TOBACCO RELATED CANCERS	NON-TOBACCO RELATED CANCERS	TOTAL
HEAD&NECK	310 (45.6%)	35 (50%)	345 (46%)
LUNG	119 (17.5%)	8 (11.4%)	127 (17%)
MALE GENITAL TRACT	33 (4.8%)	5 (7.1%)	38 (5.1%)
ALIMENTARY TRACT&LIVER	195 (28.7%)	15 (21.4%)	210 (28%)
SKIN	8 (1.2%)	2 (2.9%)	10 (1.3%)
CML / CLL	3 (0.4%)	0 (0)	3 (0.4%)
HDL / NHL	7 (1.1%)	2 (2.9%)	9 (1.2%)
SARCOMA	5 (0.7%)	3 (4.3%)	8 (1%)
TOTAL	680 (90.67%)	70 (9.33%)	750 (100%)

The present study reveals that Head & neck was more vulnerable to tobacco related d cancers followed by Alimentary Tract & Liver and lung.

II. Discussion

The present study was undertaken in three tertiary care hospitals of Guntur district of Andhra Pradesh. The study group was comprised of 750 male subjects aged 1-85 years and above, attending the radiotherapy departments in these centers. Out of 750 subjects the proportion of tobacco associated cancers are found to be 90.67% and rest were of non-tobacco related cancers i.e. 9.33%.

The study shown that the proportion of Tobacco related cancers are seems to be increasing along with increasing age when compared to the proportion of non- Tobacco related cancers. Babu Mathew et al (WHO1996) stated that among people aged over 15 years the use of Tobacco occurred in 51% of males. In the present study, the proportion of Tobacco related and the proportion of non- Tobacco related cancer seems to be significantly more among illiterate male subjects. The Vijayakumar V.K et al stated that illiteracy is associated with Tobacco consumption in India. Subramanian S.V et al stated that individuals with no education were 2.69 times more likely to smoke and chew Tobacco than those with Post graduation education. Our study concurs with the findings of above authors. In the present study, the proportion of Tobacco related cancers are seems to be more among clerical and managerial male subjects compared to the other nature of work subjects. In the present study, the proportion of Tobacco related cancers is seen to be more in rural area compared to urban areas. The difference is found to be statistically insignificant. The first National survey had been carried out in 1987-88 for prevalence of Tobacco use in India covering urban as well as rural areas. The figures among men are seen to be 25.7% and 35.3% in urban and rural areas, and among women to be 5.95% and 11.1% in urban and rural areas respectively(Editorial in J of NSSO 1991).The second National survey has been carried out in 1993-94 for prevalence of Tobacco use in India covering urban as well as rural areas seen among men to be 23.2% and 33.6% in urban and rural areas, and among women to be 4% and 8.8% in urban and rural areas respectively (J of NSSO1998).Vijayan V.K et al stated that the prevalence of Tobacco use in 1993-94 was 23.2% in males (any age) and 4% in females (any age) in urban areas and 33.6% in males and 8.8% in females in rural areas. Our study concurs with the findings of above authors.

In the present study, the proportion of Tobacco related cancers are seen more among those utilizing firewood as fuel for cooking purposes compared to the other types of fuel.

In the present study the proportion of Tobacco related cancers are more consuming the mixed diet, when compared to the vegetarian subjects. The difference is found to be statistically significant. Each year in Australia, more than 6000 deaths from colorectal cancers are attributable to the life style factors of poor diet (Cancer Info –30/7/2001). George Anderson stated that vegetarians were 15% less likely to develop colorectal cancer than meat eaters (2002). Peter Boyle et al, stated that increase intake of vegetables decrease the colorectal cancers (2005). Vegetarian diets have been associated with decreased risk for prostate cancers (2003). Our study concurs with the findings of above authors.

Our study also revealed that a significant proportion of Tobacco related cancers were occurring among tobacco smokers. Among the Tobacco users, bidi smokers constitute 40%, cigarette smokers 20% and those using smokeless forms 40%. Rosenquist.K stated that both smoking Tobacco and alcohol consumption are risk factors of oral, Oropharyngeal squamous cell carcinoma. Wasnik KS et al (1998), stated that tobacco chewing (OR=7.98, 95% CI= 4.11-13.58) and Tobacco smoking (OR=2.25, 95% CI= 1.22-3.70) were found to be significantly associated with oropharyngeal cancer. It has been estimated that cigarette smoking is now responsible for more than 1 million premature deaths each year (WHO 1983 TRS No.695).It has been estimated that the control of Tobacco smoking alone would reduce the total burden of cancers by over a million cancers each year (WHO TRS No.731 1986).The most common form of tobacco use, cigarette smoking, demonstrates a very high relative risk--in a recent cohort study (CPS I 1996).

The total burden of lung cancer in any country is directly related to the amount and duration of cigarette smoking (WHO 1975 TRS No.568).The report of the WHO expert committee on smoking control contains information on specific smoking cessation methods such as smoking cessation clinics, nicotine substitute, hypnosis etc (WHO 1976 TRS No.636).

The present study found that out of 750 male cancer patients a considerable proportion of Head and neck Tobacco related cancer subjects were tobacco chewers. The difference between tobacco related cancers with habit of tobacco chewing and other modes of tobacco consumption was statistically significant. The similar results projected in Gupta PC et al (1980) study who stated that an increase in oral cancer incidence in India especially in younger individuals caused by smokeless tobacco products. He also stated that high risk groups include tobacco chewers and smokers. And the WHO published a study on people using tobacco in other forms such as betel quid, people who sleeps with the tobacco quid in the mouth (WHO 1985, Wkly Epi rec) considering smoking and chewing. Which says that the effect of tobacco was analyzed by A total of 59.4% patients either smoked or chewed tobacco.

The study revealed that a significant proportion of Tobacco related cancer subjects were consuming more alcohol than other study subjects. Same was stated by Rothman K.J (1980), in his data indicate that oral cancer can also be caused by high concentrations of alcohols, and that alcohol appears to have a synergistic

effect in tobacco users (WHO 1984). Almost same was published by Kabat G.C et al stating that excessive intake of alcoholic beverages is associated with oesophageal, liver and rectal cancers (Ind Jou EPI, 1986). Similarly Stephen Havas stated that Excessive alcohol consumption is a risk factor for cancers of the oral cavity, alimentary canal and liver (WHO Vol.8; 1987).

III. Conclusions

1. The study group was comprised of 750 male subjects aged 1-85 years and above,
2. Out of them about 90.67% were found to have tobacco associated cancers and rest were of non-tobacco related cancers (9.33%).
3. The study reveals that proportion of Tobacco related cancers were increasing along with increasing age when compared to the proportion of non- Tobacco related cancers.
4. The study shows that a significant proportion of Tobacco related cancers were found to be high among illiterates than the literates.
5. Whereas proportion of Tobacco related cancers are seems to be more among clerical and managerial male subjects compared to the other nature of work subjects.
6. Also a significant proportion of Tobacco related cancers were observed in study subjects than rural study subjects.
7. And a proportion of Tobacco related cancers were more among those who utilizing firewood as fuel for cooking compared to the other types of fuel.
8. Also the proportion of Tobacco related cancers are more among mixed diet consumers when compared to the vegetarian diet consumers.
9. The study revealed that a significant proportion of Tobacco related cancers were occurring among tobacco smokers followed by Tobacco chewers and Other forms of tobacco intake.
10. In the present study a significant proportion of Tobacco related cancer subjects were having a habit of consuming more alcohol than other study subjects.

IV. Recommendations

As per present study the significant risk Factors for Cancers among the study subjects were Smoking, heavy Alcoholism, Tobacco chewing habit and illiteracy rural population. Hence we recommend that.

1. By involving the local bodies the health authorities should create the awareness regarding the risk factors of the various cancers and modes of avoiding them.
2. And strict implementation of already existing laws for prevention of tobacco usage in public areas.
3. Education and counselling of parents in inculcating the good habits among their children.
4. Health professionals including dentists should also play an active role in prevention and control of tobacco induced lesions due to the direct contact with patients who are at increased risk.

References

- [1]. Babu Mathew, Ramani Wesley et al (1996) Cancer Screening by local volunteers, World Health Forum, Vol.17.1996.
- [2]. Dhanunjaya Rao et al (1999) Carcinoma of oesophagus aetiological factors and epidemiology; Journal of the Indian medical association Vol.97.No. 9. Calcutta. September, 1999.
- [3]. Gupta PC, Bhosle RB, Murlu PR et al (1989) an epidemiologic Assessment of Cancer Risk in India. Indian Journal of cancer 1989 June, 63(11:2247-52)
- [4]. ICMR Bulletin (2003).
- [5]. Jayanth K et al (1977) Oral Cancers, Indian Journal of Cancer 35:232
- [6]. Kabat G.C et al (1986) Int.J.Epi 15(4) 494-501.
- [7]. Neufeld KJ, Peters DH, Rani M, Bom S, Brooner RK et al(2005). Regular use of alcohol and tobacco in India and its association with age, gender and poverty. Drug Alcohol Depend 2005; 77:283-91
- [8]. Patel P, Patel V et al(2011) Oral mucosal lesions among residents of a town in North Gujarat. National J Med Res 2011; 1:3-
- [9]. Peter Boyle et al (2000) ABC Colorectal Cancer epidemiology British Medical Journal 2000, 321:805-808.
- [10]. Rosenquist. K. (2005), Risk factors in oral and pharyngeal squamous cell carcinoma Swedish dental journal suppl.2005.
- [11]. Sudhakar S, Praveen Kumar B, Prabhat MP et al(2011) Prevalence of oral mucosal changes in Eluru, Andhra Pradesh (India) - An institutional study. J Oral Health Comm. Dent 2011; 5:42-6.
- [12]. Stephen Havas et al (1987), Prevention of disease, Cancer and stroke the scientific basis World Health Forum, Vol.8.1987 (179:1-66).
- [13]. VK vijayan and Rajkumar et al (1994) Tobacco Sessation in India NCCP 196-211
- [14]. WHO (1983) Tech Rep Ser No.695
- [15]. WHO (1986) Tech.Ser.No.731.