

Original Research Article

Various Addiction Patterns and Duration in Head and Neck Carcinoma: An Institutional Experience from Central India.

Vandana Jain^{1,2}, Digpal Dharkar^{3*}, Hamsa Nandini⁴, Shailendra M. Jain⁵, Suresh Verma^{6*}, Prakash H. Shinde^{7*}

¹HOD, Department of Radiation Oncology, Indian Institute of Head and neck Oncology, Indore Cancer Foundation, Rau- Indore, M.P. India.

²Visiting Professor, Department of Radiotherapy, Index Medical College Hospitals and Research Center, Khudel, Indore, M.P. India.

³Oncosurgeon & Hon. Secretary, ⁶Radiation Oncologist, ⁷RSO cum Medical Physicist,

*Indian Institute of Head and Neck Oncology, Indore Cancer Foundation, Rau-Indore, M.P., India.

⁴Fellow Trainee, Malabar Cancer Center, Thalassery, Kerala, India.

⁵Professor and HOD, Dept. of Microbiology, Modern Institute of Medical Sciences, Kanadia, Indore, M.P. India.

Corresponding Author: Vandana Jain

Received: 23/06/2015

Revised: 11/07/2015

Accepted: 15/07/2015

ABSTRACT

Aim of the study: To see the various age groups, gender, sites, disease stage, treatment compliance and quitting their habits after diagnosis and the most importantly various addiction patterns and the duration in carcinoma head and neck patients.

Material and methods: A total of 116 patients (101 males and 15 females) with complete records were analyzed for age, sex, histopathology, associated medical illnesses, various sites with disease stage, various addictions with the duration, patient compliance towards treatment and the continuation or quitting the addictions.

Results: Commonest site in head and neck cancer was oral cavity 84 (72.4%). Most of them were from 40-60 years of age group. 75 (64%) patients reported were in advanced stages III and IV of the disease. Commonest addiction was smokeless tobacco (SLT) in 49 subjects (44.95%). Majority of patients 89 (81.6%) had consumed various addictions for 10 to 30 years. A total of 92 (79.31%) patients completed their treatment and 24 (20.68%) defaulted. 87 (79.8%) patients quit their habit and 22 of them continued the commonest was alcohol and smoking.

Discussion and conclusion: Various addictions alone or in combination is the important risk factor for head and neck carcinoma, the most important is SLT. Targeting the risk population that is the teenage to early adulthood individuals by massive school education programs for health promotion and awareness for toxicity of various addictions will help in decreasing addiction and will indirectly save lives of so many individuals.

Key words: Head and neck carcinoma, risk factors for oral cancers, various addictions.

INTRODUCTION

Head and neck cancers are the sixth most common malignancy and are the major

cause of cancer morbidity and mortality worldwide. In India and South East Asia, oral cancer incidence accounts for 40% of

all the malignancies. [1] India has the dubious distinction of harboring world's highest number (nearly 20%) of oral cancers. Each year approximately one million people in India are diagnosed with oral cancers. [2]

India is the second largest producer and third largest consumer of tobacco in the world. According to GATS India report (2009-10) those using smokeless tobacco (SLT) only (163.7 million) are more than double of those who are exclusively smokers (42.3 million). [3]

MATERIALS AND METHODS

A total of 281 patients were treated at the Institute from Jan. 2012 to Dec. 2012. Out of which 152 (54.09%) were males and 129 (45.90%) were females. Out of 152 males and 129 females 109 and 17 were of Head and neck cancers respectively. A total of 126 biopsy proved patients of Head and neck cancer were reported for radiotherapy/ radiotherapy +chemotherapy treatment at the Institute. This retrospective study is done from the file records to see for age, gender, various sites, stage, histopathology, various addictions and the duration and the patient continued with the addiction during and after treatment as on follow record or quits with the start of the treatment. Patient's compliance (completed treatment or defaulted in between) is also recorded. Associated medical illness if any is also taken into consideration.

Various head and neck cancer sites were grouped in five groups for this study: oral cavity, nasopharynx, Oropharynx, hypopharynx and larynx. As the numbers of patients were more in oral cavity group they were again groped in four subgroups: oral tongue, buccal mucosa, alveolar ridge and other sites (lip, floor of mouth, retromolar trigone, hard palate and angle of mouth). Nasopharynx, paranasal sinuses and nasal

cavity patients are altogether considered in nasopharynx group as number was very less.

Staging was done as per American joint committee on cancer (AJCC) guide line. [4]

Various addictions were recorded in eight groups alcohol, smokeless tobacco (tobacco, pan, supari, gutkha alone or in combination), smoking (cigarette/ bidi), alcohol + smoking, alcohol + smokeless tobacco, tobacco + smoking, alcohol +smokeless tobacco + smoking and no addiction for 10, 20, 30 and more than 30 years.

A total 116 patients were considered for this study, 10 patients excluded as some records were incomplete in the file.

RESULTS

A total of 116 patients were analyzed for this study out of which 101 (87.06%) were males and 15 (12.94%) were females. Commonest histopathology reported was Squamous cell carcinoma 114 patients and only two with adenocarcinoma. Associated medical problems were hypertension, diabetes, pulmonary tuberculosis and bronchial asthma as records are shown in table-1.

Table 1. Patient data

Total patients	
Male	152
Female	129
Total head and neck cancer pts.	126
Patients excluded from study	10
Total patients for study	116
Male	101 (87.06%)
Female	15 (12.94%)
HPR	
Squamous cell carcinoma	114
Adenocarcinoma	02
Medical history	
Hypertension	7
DM	6
PTB	1
Bronchial asthma	1

HPR- Histopathology report, DM- Diabetes mellitus, PTB- Pulmonary tuberculosis.

Commonest site in head and neck cancer was oral cavity 84 patients (72.4%)

followed by Larynx 11 (9.48%), Oropharynx 10 (8.64%), nasopharynx 6 (5.17%) and hypopharynx 5 (4.31%). Details of this are shown in table-2.

Table 2. Site and gender wise distribution of patients:

S.no.	Site	Male	Female	Total
1	Nasopharynx	3	3	6 (5.17%)
2	Oropharynx	9	1	10 (8.62%)
3	Hypopharynx	5	0	5 (4.31%)
4	Larynx	11	0	11 (9.48%)
5	Oral cavity (OC)	73	11	84 (72.41%)
Total		101	15	116
Sub groups OC				
	Oral tongue	26	4	30 (25.86%)
	Buccal mucosa	28	5	33 (28.44%)
	Alveolar ridge	11	2	13 (11.20%)
	Others	8	0	8 (6.89%)

Most of the patients were from 40-60 years of age group. The youngest patient was of 27 years male and the oldest was 86 years male. Various cancer sites in different age groups is shown in table-3. Only 8 (6.89%) patients were reported in stage-I, 33 (28.44%) were in stage-II remaining 75 patients were in advanced stages III and IV of the disease which accounts for more than 64% of the patients. Details of this are shown in table-3.

Commonest addiction in head and neck carcinoma was SLT in 49 subjects (44.95%) followed by smoking 16 (14.67%), alcohol + smoking 13 (11.9%), alcohol + SLT 11 (10.09%), SLT + smoking 10 (9.17%), alcohol + SLT + smoking 9 (8.2%), only one subject for alcohol alone and with no addiction 7 (6.4%). The duration of consumption of various

addictions was only 14 (12.845%) patients reported for less than ten years and 16 (14.67%) were for more than 30 years. Majority of patients 89 (81.6%) had consumed for 10 to 30 years. Details of this is shown in table-4 and figure-1

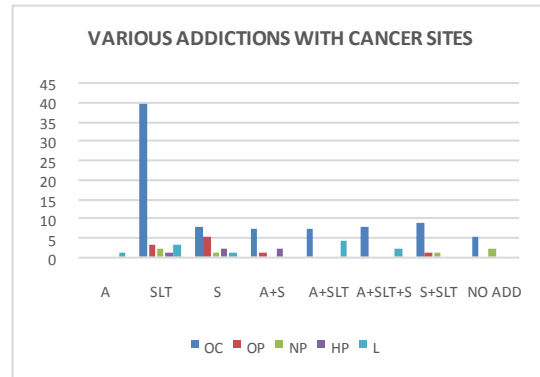


Figure 1: Various addictions with cancer sites.

A total of 92 (79.31%) patients completed their treatment radiotherapy/radiotherapy +chemotherapy. 24 (20.68%) patients defaulted their treatment, mostly because of the advance nature of the disease, in some patients due to family problem or intolerance for the treatment due to continuation of addiction. Out of total 116 patients only seven were not addicted to any addiction. 87 patients quitted their habits for different addictions. 22 of them continued with the addiction and the commonest was alcohol and smoking shown in table-5.

Table 3: Number of patients in various age groups and stage of the disease.

S. No.	Sites	Oral tongue	BM	Alv. Ridge	Others	NP	OP	L	HP	Total
Age	< 30	5	2	1	1	1	1	0	0	11(9.48)
	31-40	6	9	4	3	2	3	1	0	28(24.13%)
	41-50	9	11	3	2	2	2	4	1	34(29.31%)
	51-60	7	7	3	1	1	2	3	1	25(21.55%)
	> 60	3	4	2	1	-	2	3	3	18(15.51%)
Stage	I	2	1	1	1	1	1	1	0	8(6.89%)
	II	13	12	1	0	1	2	2	2	33 (28.44%)
	III	10	13	7	3	2	4	5	2	46 (39.65%)
	IV	5	7	4	4	2	3	3	1	29 (25%)

Table 4: VARIOUS ADDICTIONS WITH DURATION IN DIFFERENT SITES.

S. No.	A	SLT	S	A+SLT	A+S	SLT+S	A+S+SLT	No addiction	Total
1. ORAL CAVITY (84)								5	
10YEARS	0	2	0	3	1	1	4		11
20	0	18	2	4	5	4	2		35
30	0	16	3	0	3	1	1		24
>30	0	4	2	0	1	3	1		11
Total	0	40	7	7	10	9	8		
2. OROPHARYNX (10)								0	
10	0	3	0	0	0	0	0		3
20	0	0	0	0	0	0	0		0
30	0	0	2	0	1	1	0		4
>30	0	0	3	0	0	0	0		3
Total	0	3	5	0	1	1	0		
3. NASOPHARYNX (6)								2	
10	0	1	0	0	0	0	0		1
20	0	1	1	0	0	0	0		1
30	0	0	0	0	0	1	0		1
>30	0	0	0	0	0	0	0		0
Total	0	2	1	0	0	1	0		
4. HYPOPHARYNX (5)								0	
10	0	0	0	0	0	0	0		0
20	0	1	1	0	1	0	0		3
30	0	0	1	0	1	0	0		2
>30	0	0	0	0	0	0	0		0
Total	0	1	2	0	2	0	0		
5. LARYNX (11)								0	
10	0	0	0	0	0	0	0		0
20	0	1	0	2	0	0	1		4
30	1	0	1	2	0	0	1		5
>30	0	2	0	0	0	0	0		2
Total	1	3	1	4	0	0	2		
Total for all sites	1	49	16	11	13	10	9	7	

TABLE 5: SHOWING TREATMENT compliance AND ADDICTION history.

S. No. AND SITES	Oral tongue	BM	Alveolar Ridge	Others	NP	OP	L	HP	Total
TREATMENT COMPLETD	27	28	10	5	4	7	8	3	92(79.31%)
TREATMENT DEFAULTED	3	5	3	3	2	3	3	2	24(20.68%)
ADDICTION QUITTED	25	27	10	6	3	6	6	4	87(75%)
ADDICTION CONTINUED	3	4	2	2	1	4	5	1	22(25%)

DISCUSSION

The present study was a retrospective and hospital record based study and only histopathologically confirmed patients of Head and neck carcinoma were considered. Male preponderance with oral cancer in this study indicates males were more often involve themselves with various addictions which are a known risk factor for head and neck carcinoma. The most suitable explanation for this would be they are involved more with outward activities which is stressful and to cope up this they indulge themselves with some or the other addictions.

Smokeless tobacco consumption was the topmost addiction, the most logical explanation for this would be one can easily consume at work place and can work without disturbing others. Though this study data does not reflect the community as a whole but reported patient analysis gave good idea of commonest site and major risk factors associated in head and neck cancer.

Addala et al reported higher number of individuals free of risk factors 15.4% male and 32.9% females but in our study this is coming only 6.03% combindly. [1] Use of smokeless tobacco is the commonest addiction reported in this study. Same is reported by Dr. Pankaj Chaturvedi in

editorial. According to global adult tobacco survey of ministry of health and family welfare released in Nov. 2010, nearly 160 million Indians are using smokeless tobacco. In India alarming number of school children and young adults are picking up this habit. [2]

Gupta et al study for Ahmedabad city (Gujarat, India) shows the most important causal factor for oral cancer in India is the use of tobacco (30% with SLT and 50 % with SLT + smoking). [5] In our study only SLT user subjects were higher than the combination.

Ali et al study was for oral submucosal fibrosis, which clearly shows male predominance with mean age of 38.8 years and the commonest addiction reported was Gutkha and tobacco (SLT). [6]

SLT contains carcinogens, tobacco specific nitrosamines, nitrosamine acids, polycyclic aromatic hydrocarbons, aldehydes and metals. [7-8] In India and Indian subcontinents, in addition to other cancers, a major disease consequence of SLT use is oral cancer. [8]

Sinha et al claims for high prevalence of SLT use in India by women that is 25.2% for men and 24.5% for women, but is not so with our study. [9] Tongue and buccal mucosa were the most common sites reported by Iype et al and Malhotra et al, as in our study also. [10-12]

Commonest addiction in the reported group is SLT (44.95%) alone and in combination (27.52%). There are recommendation from various authors [3,5-6] and in national tobacco control program that increase the tax and ban the tobacco products. Both these options will definitely be targeting the risk population that is the teenage to early adulthood individuals, when usually the addiction starts. Massive school education programs for health promotion and awareness for toxicity of help in controlling the severity of addiction but the

most important approach various addictions to be launched for secondary and higher secondary students. Various Government and non-government health individuals have to actively involve themselves to make the individuals in the risk age group aware of healthy lifestyle and the deleterious and fatal effects of various addictions.

This health promotive and preventive approach by various educational and awareness programs would be more effective simultaneously ban and increasing cost of various tobacco products and alcohol will help in decreasing addiction.

Patients with longer addiction history were more reluctant to quit their habits, as well as their treatment compliance was also poor and most of them report in advanced stages of disease.

Patients were able to quit smokeless tobacco used by them in various forms (tobacco, gutkha, supari, pan etc.) with less difficulty as continuation of this gives more local pain. Patients with smoking and alcohol habits were reluctant to quit as this does not give much of local pain while consuming. Alcohol gives sense of wellbeing and to some extent patient feel pain is gone. Duration of consumption of various addictions is recorded in file but actually this is more than what they disclosed.

CONCLUSION

Any addiction alone or in combination is the important risk factor for head and neck carcinoma, the most important is SLT alone or in combination. Targeting the risk population that is the teenage to early adulthood individuals, when usually the addiction starts by massive school education programs for health promotion and awareness for toxicity of various addictions will help in decreasing addiction and will indirectly save lives of so many individuals. In addition to this

increasing tax and banning tobacco products and alcohol will also help.

ACKNOWLEDGEMENT

We thank Dr. Nilesh Pawar, Associate Professor, Department of Microbiology, Index Medical College and research center, Khudel Indore, for his help. We also thank to Mr. Prakash Rawat, Mrs. Rekha Jatavamd Mr. Deepak Rawat for providing technical support for taking out hospital records from medical record section of the Institute.

REFERENCES

1. Addala L, Kalyana PC, Reddy TPK, Anjaneyulu V, et al. Risk factor profiles of Head and neck cancer patients of Andhra Pradesh, India. *Indian journal of cancer*. 2012, 49:215-219.
2. Pankaj Chaturvedi. Editorial, Effective strategies for oral cancer control in India. *Journal of cancer research and Therapeutics*. 2012(2);8: S 55-56.
3. Arora M, Madhu R. Banning smokeless tobacco in India: policy analysis. *Indian journal of cancer*. 2012, 49:336-341.
4. Percy C, Van Holten V, Muir C, editors. *International classification of disease for oncology (ICD-O)*. 2nd edition. Geneva: World health organization 1990.
5. Gupta PC, Ray CS, Murti PR, et al. Rising incidence of oral cancer in Ahmedabad city. *Indian journal of cancer*. 2014, 51 (S1): S67-S72.
6. Fareedi MA, Vinit A, Prasant MC, et al. Oral submucous fibrosis: Comparing clinical grading with duration and

- frequency of habit among areca nut and its products chewers. *Journal of cancer research and Therapeutics*. 2013;9: 471-476.
7. Hecht SS, Carmella SG, Murphy SE, et al. Similar exposure to a tobacco specific carcinogen smokeless tobacco users and cigarette Smokers. *Cancer epidemiology biomarkers prev*. 2007, 16: 1567-72.
8. ARC. Smokeless tobacco and some tobacco specific N-nitrosamines. *IARC monographs on evaluation of carcinogenic risks to humans*. Vol. 89. Lyon, France: WHO. International agency for research on cancer; 2007.
9. Sinha DM, Palipudi KM, Gupta PC, et al. Smokeless tobacco use: A meta-analysis of risk and attributable mortality estimates for India. *Indian journal of cancer*. 2014, 51(1): S73-S77.
10. Sapkota A, Gajlakshmi V, Jetly DH, et al. Smokeless tobacco and increased risk of hypopharyngeal and laryngeal cancers: A multicentric case-control study from India. *International journal of cancer*. 2007, 121: 1793-8.
11. Iype EM, Pandey M, Mathew A, et al. Squamous cell carcinoma of the tongue among young Indian adults. *Neoplasea*. 2001, 3: 273-7.
12. Khandekar SP, Bagdey PS, Tiwari RR. Oral cancer and some epidemiological factors: A hospital based study. *Indian journal of community medicine*. 2006, 31: 157-9.

How to cite this article: Jain V, Dharkar D, Nandin H et. al. Various addiction patterns and duration in head and neck carcinoma: an institutional experience from central India. *Int J Health Sci Res*. 2015; 5(8):130-135.
