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EPIDEMIOLOGICAL STUDY ON HEAD AND NECK MALIGNANCIES - A STUDY OF 150 CASES

SankaraNarayanan Gopalakrishnan [a], Praveenkumar[b]

a - Professor and HOD, Dept. of Otorhinolaryngology, Government Kilpauk Medical College and Royapettah Hospital,Chennai,India

b - Resident, Department of Otorhinolaryngology, Kilpauk Medical College, Chennai

ABSTRACT

OBJECTIVE: In the present study we investigate the head and Neck Malignancy cases presenting to the ENT department of our Hospital, and analyze the same to give inputs as to the incidence of head and neck malignancies, the symptoms and stage of presentation, lifestyle and habits as contributory risk factors, identify ENT primary in neck secondaries, histopathological types and selection of best treatment.

METHODS: Prospective analysis of 150 patients with newly diagnosed malignancies of nasopharynx, oropharynx, larynx, hypopharynx and ear.

RESULTS: Most malignancies are common in patients greater than 40 years of age. 88% of cancer occur in males. Oropharynx cancer is the most common cancer in our study, with the commonest subsite as base of tongue. Supraglottic and pyriform fossa tumours are the commonest tumour in laryngeal and hypopharyngeal cancers

respectively. The most common presentation is dysphagia. Synergistic effect of smoking and alcohol is seen in 50% of patients. Most of the cases were seen in stage III and IV except glottis cancer which is predominantly seen in stage I, almost all cases were squamous cell carcinoma.

CONCLUSION:

The results of our study were in conformity with other similar studies. In larynx, Supraglottic was more common as opposed to glottis in certain western studies. Analysis of various factors helps in early diagnosis and management.

KEYWORDS:

Cancer, Head and Neck Malignancy, Larynx, pharynx, Nasopharynx, Neck secondaries.

INTRODUCTION

The rate of ENT malignancies is growing day by day. It contributes to a total of 10% among all malignancies reported with a mortality rate of more than 50% in a period of 5 years in Chennai[1]. It is continuously rising with the ever increasing risk factors. ENT malignancies are one which can be diagnosed clinically to a great extent when compared to others and early diagnosis and choosing correct line of management is of paramount importance in increasing the survival rate.

AIMS AND OBJECTIVES

1. To collect the data about the cases recorded with ENT malignancies over the period of our study.
2. To find out the incidence rate in males and females and the symptoms with which the patients present, along with their stage of presentation.

3. To examine the lifestyle and habits of these people in order to identify the risk factors and etiopathogenesis of these malignancies.
4. To find out neck secondaries as a presentation in various malignancies.
5. To find different histopathological types and differentiation.
6. To select the best treatment option for the patient by means of policy taken in tumour board.

MATERIALS AND METHODS

Study design: Prospective study

Study place: Department of ENT, Kilpauk Medical College and Government Royappettah Hospital, Chennai.

Study period: June 2009 – March 2012

Sample size: 150 patients

Financial support: Nil

- Written informed consent obtained from all participating subjects. Privacy will be ensured.
- Detailed History recorded by means of a questionnaire format. A thorough clinical examination of the patients was done.

1. Primary data were gathered via tick box and interviews. The following data were gathered.
    i. Patients age and sex

    ii. Habits
    - Smoker/Non smoker
    - Tobacco chewing
    - Alcohol consumption
    - Pan chewing / Betel nut

iii. General questions

- Diet
- Symptoms
- Awareness etc..

iv. Histopathological type of malignancies

v. At what stage where they diagnosed

vi. What treatment was given

INCLUSION CRITERIA:

All patients attending ENT department in Kilpauk medical college & Hospital and Government Royappetah Hospital, Chennai who are newly diagnosed with ENT malignancies such as nasopharyngeal tumours, oropharyngeal tumours, laryngeal tumours, hypopharyngeal, ear tumours.

EXCLUSION CRITERIA:

1. Children (0 - 12 years age group)
2. Patients with poor general condition
3. Patients who are not suitable for any kind of cancer treatment.
4. Patients who were previously treated or undergoing treatment or recurrent cases.

RESULTS AND DISCUSSION

In this section we have compared important results of our study with previous National and International studies. Mostly we have drawn comparison with statistical data from Madras Metropolitan Tumour Registry[1], a part of National cancer Registry program, ICMR, who document cancer incidence and mortality.

PEAK AGE INCIDENCE

STUDY	NASO	ORO	LAR	HYPO
MMTR	20 – 40 &40 –60	40 – 60	60 – 80	60 – 80
Present Study	<20 &40 - 60	40 – 60	40 – 80	40 – 60

In both the studies, there is bimodal distribution of nasopharyngeal carcinoma. However in our study, the first peak is < 20 years as compared to 20 – 40 years in MMTR. In our study, patients with laryngeal and hypopharyngeal malignancies presented predominantly in 40 – 60 years of age group as compared to a relatively older age group in MMTR.

In Ray Chowdury's study[7] on topographical distribution of laryngeal carcinoma in 50 patients, laryngeal carcinoma occurred commonly in 40 – 60 years age group.

SEX WISE DISTRIBUTION

STUDY	Sex	ORO	LAR	HYPO
MMTR	M F	89% 11%	88% 12%	71% 29%
Present Study	M F	90% 10%	89% 11%	82% 18%

In nasopharyngeal carcinoma, the male female ratio is 2.4 : 1 whereas in a study conducted by John kong Sangwoo and Andrew van Hasselt, male female ratio is 3:1.

In Ray Chowdury's study (1997), male female ratio in laryngeal carcinoma is 16: 1, whereas in our study male female ratio is 8:1. In Ahmedin Jemal, Rebecca siegel, cancer statistics (2007) study, male female ratio in larynx is 4:1[8].

In our study, in oropharyngeal cancer male female ratio is 3:1, whereas it is 8:1 in MMTR study and 2:1 in cancer statistics (2007) study and Nationwise study of epidemiology of oropharyngeal cancer in Netherlands, Mak kregar, Hilgers(1995)[2].

In our study, male female ratio is 4.6:1 in hypopharyngeal malignancy, whereas 3:1 in MMTR study and 1.7:1 in Pingree and KimDavis study.

SUBSITE DISTRIBUTION

OROPHARYNX

Study	Base Of Tongue	Tonsil	Vallecula	Soft Palate	Others
MMTR	40%	23%	3%	10%	24%
Present Study	51%	31%	10%	6%	2%
Mac Kregar Study(1995)	28% (includes vallecula)	58%	-	10%	4%

In Mac Kregar and Hilgers[2] study, 28% involves both base of tongue and vallecula. There is 4% of posterior oropharyngeal wall growth in this study. However in our present study, we found no cases of primary posterior oropharyngeal wall growth. Tonsil is the most common site of involvement in Mac Kregar study, whereas in MMTR and our study base of tongue growth is the commonest oropharyngeal subsite.

LARYNX

STUDY	SUPRA-GLOTTIS	VOCAL CORD	SUB GLOTTIS	UN SPECIFIED
MMTR	34%	38%	1%	27%

Present Study	50%	44%	6%	-
Lederman(1952)	25%	61%	12%	-
Powel & Robin(1983)	19%	76%	5%	-
Thawley(1991)	40%	59%	1%	-
Chakraborty(1992)	78%	13%	4%	5%
Ray Chowdury's study(1995)	58%	40%	2%	-

In Indian studies like MMTR, Chakraborty, Ray Chowdury and our study, the most common laryngeal cancer is Supraglottis, whereas in Lederman, Powel & Robin and Thawley study, the most common laryngeal cancer is glottis involving vocal cords. In our study, aryepiglottic fold is the most common subsite as in the case of Powel & Robin study. The demerit of Lederman's study is that, he considered suprahyoid epiglottis, AE folds and arytenoids as a part of hypopharynx.

HYPOPHARYNX

STUDY	PYRIFORM SINUS	POST CRICOID	POSTERIOR PHARYNGEAL WALL	UNSPECIFIED
MMTR	41%	26%	1%	32%
Present Study	64%	23%	13%	-
Jones & Stell Liverpool study series	45%	40%	8%	-

In all above 3 studies commonest site for hypopharyngeal tumour is pyriform sinus. We have a good number of posterior pharyngeal wall cases. In Jones & Stell Liverpool study series, post cricoids carcinoma cases are almost equal to PF tumours.

The Liverpool series also included cervical oesophagus growth which accounted for 7% of cases.

ASSOCIATION OF SMOKING AND ALCOHOL

Study	S+A+	S+A-	S-A+	S-A-
Hashibe & Brennan study(2007)	70%	16%	10%	4%
Present study	57%	26%	2%	15%

In our study, alcohol as an independent risk factor is seen in 2% of cases as compared to 10% of cases in Brennan study[5]. William J Blot and Joseph K Mc Laughlin (1988) published an article in American association of cancer Research, showing that smoking and alcohol drinking together causes 75% of oropharyngeal cancers[6]. Similar results found in our study.

STAGE OF PRESENTATION

NASOPHARYNGEAL CANCERS	N0	N1
John Kong Sangwoos study	25%	75%
Present study	7%	93%

In both the studies, patients predominantly present with neck nodes.

OROPHARYNGEAL CANCERS	Stage I	II	III	IV	N0	N1
Mac Kregars(1995)	7%	17%	24%	52%	40%	60%
Present study	3%	12%	37%	48%	27%	73%

Mac Kregar, Hilgers(1995)[3] conducted a nationwide study of epidemiology, treatment and survival of oropharyngeal carcinoma in Netherlands. The results of both the studies are almost similar. Most of the oropharyngeal cancers are advanced at presentation.

LARYNGEAL CANCERS	N0	N1
Martin A Birchall study	41%	59%
Present study	78%	22%

As compared to Martin Study, most of the laryngeal cancers in our study presents with N0 neck which becomes important in treatment and survival of the patient.

HYPOPHARYNGEAL CANCERS	N0	N1
Jones % Stell Liverpool series	55%	45%
Present study	44%	56%

Hypopharyngeal cancers are advanced at presentation in most of the studies and carries poor prognosis.

HISTOLOGY – SQUAMOUS CELL CARCINOMA

STUDY	ORO	LAR	HYPO
MMTR	87.5%	89%	91%
PRESENT STUDY	96%	100%	97%

As in the above 2 and many other studies squamous cell carcinoma is the most common type of carcinoma in head and neck malignancies.

CONCLUSION

From our analysis of 150 newly diagnosed cancer cases in our department, we found results from our study were almost similar to many National and International studies. Smoking and alcohol once again proves to be an important risk factor in the etiopathogenesis of head and neck cancer. This habit continues to rise and its incidence is rising among females too. Various programs and counseling are needed to educate the people especially in developing countries about the ill effects of smoking and alcohol. In India, education should also be directed towards untoward effects of betal chewing and pan parag usage, which is commonly associated with oropharyngeal cancers. Preventive measures of these risk factors will play a vital role in reducing the incidence of cancer. Some steps like banning of smoking in public places and displaying warning in cigarette packets and in media about injurious effect of alcohol and smoking is already implemented.

Most of the cases are advanced at presentation. Cancer education should be aimed at screening the patients early, to have an early diagnosis and treatment which will improve the overall 5 - year survival rate. We are able to diagnose many glottis cancers early and most of the cases responded well to radiotherapy treatment. Glottis cancers are one among the very few cancers, having a good prognosis if detected early.

Future studies should analyze the genetic and molecular basis of cancer which can play a vital role in cancer treatment. More and more understanding of the pathogenesis

of cancer will help in the treatment and the future is towards non surgical management of cancers.

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