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AN OBSERVATIONAL STUDY IN MALE CANCER PATIENTS OF TELANGANA REGION

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ABSTRACT
Cancer death rates are the best measure of progress against cancer. In India, most of the population does not have access to a well-organized & well regulated cancer care system. A Prospective observational study was conducted in two private hospitals in Telangana state, in a period of six months. Patients with Head & Neck cancers & who were admitted to the department of Oncology were enrolled in the study. A Total of 103 cancer patients were found to be suffering with Head & Neck cancers. Staging describes the extent or spread of the cancer at the time of diagnosis. Proper staging is essential for optimizing therapy & assessing prognosis. Most of the patients were in stage IV due to lack of awareness & literacy. Many of them were suffering with Squamous cell carcinoma and were on mixed diet. Treatment regimen of cisplatin & 5-flurouracil are given. Commonly used treatment modality was chemotherapy & radiation therapy. Treatment was given as per NCCN Guidelines. Majority of the metastasis cases were reported at the lung region.

KEYWORDS: Cancer, Metastasis, Chemotherapy, Radiation therapy, NCCN Guidelines.

INTRODUCTION
Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells. If the spread is not controlled, it can result in death. Cancer is caused by external factors, such as tobacco, infectious organisms, unhealthy diet and internal factors, such as inherited genetic mutations, hormones, and immune conditions. These factors may act together or in sequence to cause cancer. Ten or more years often pass between exposure to external factors and detectable cancer. Treatment includes surgery, radiation, chemotherapy, hormone therapy, immune therapy and targeted therapy (drugs that interfere specifically with cancer cell growth).[1] Cancer is the second leading cause of death globally and accounted for 8.8 million deaths in 2015. During the last 20 years, India has emerged as a fast growing economy with changes in lifestyle-related behavior partially responsible for the increasing cancer burden.[2] As per WHO, 20 million new cancer cases were diagnosed worldwide with nearly 6, 00,000 new cases and 30,000 deaths occurring globally each year.[3]

MATERIALS AND METHODS
This study was conducted in two private hospitals in Telangana region. It is an observational study done for eight months. Inclusion criteria include patients diagnosed with cancer and receiving treatment in oncology department, patients who are able to respond to questions, who received at least two cycles of chemotherapy, who received at least 5 days of radiation therapy. Exclusion criteria include pregnant women, <20 years and >90 years, patients without Histo-pathological examination reports, who did not respond to the telephone calls for survival rate. Data was obtained from sources like patient case records, laboratory data, direct communication with patients (Questionnaire) and their care takers. Parameters such as demographics data, laboratory parameters (Histo-pathological reports, complete blood picture and results of radiology techniques) were collected and evaluated. Data collected is kept confidential and used exclusively for research.

RESULTS
Distribution based on head and neck cancer:- A Total of 103 Head and Neck cancer cases were reported, most commonly seen cancers are Carcinoma of Oral cavity (33 %), and least commonly seen cancers are Carcinoma of Floor of Mouth (10 %).

Type of cancer	Number of patients	Percentage
Carcinoma of Oral cavity	35	33.9%
Carcinoma of oropharynx	12	11.6%
Carcinoma of Tongue	24	23.3%
Carcinoma of Buccal mucosa	22	21.3%
Carcinoma of Floor of mouth	10	9.7%

Age wise distribution:- Most of the patients are in the age group of 41-50 years.

S.No	Age group (Years)	Number of patients
1	20-30 years	11
2	31-40 years	13
3	41-50 years	43
4	51-60 years	15
5	61-70 years	14
6	71-80 years	6
7	81-90 years	1

Distribution based on occupation status:- Most of the patients are daily wagers (96 %) compared to Farmers (6.1 %).

Type of occupation	Number of patients	%
Daily wager	96	94.8 %
Farmer	07	6.1 %

Distribution based on social habits:- Of 103 patients, 64 % were both alcoholic and Tobacco users.

Social History	Number of patients	Percentage
Alcoholic	15	17.9%
Tobacco	19	13.3%
Alcoholic +Tobacco	56	64.1%
Betel nut	3	4.6%

Distribution based on dietary habits:- Of all the patients many are with mixed diet.

Dietary Habits	Number of patients	%
Vegetarian	47	45.6
Mixed diet	56	54.3

Distribution based on staging:- Most of the patients are detected in the fourth stage. Staging is done according to TNM.

Staging	Number of patients
IB	2
IIA	1
IIB	4
III	5
IV	20

Distribution based on cell type:- As most of the carcinomas are confined to the epithelial layers of the cell, squamous cell carcinomas are most commonly seen when compared to Adenocarcinoma.

Cell type	Number of patients	Percentage
Squamous cell carcinoma	78	64.1%
Adenocarcinoma	25	35.8%

Distribution of patients according to chemotherapeutic agents Cisplatin & Fluorouracil are most commonly used chemotherapeutic drugs.

Chemotherapeutic agents	Number of patients
Cisplatin +Fluorouracil	92
Fluorouracil	5
Cisplatin	6

Distribution based on treatment modality:- Combination of chemotherapy and Radiation therapy are most commonly used treatment regimens.

Treatment type	Number of patients
Surgery	5
Chemotherapy	8
Radiation therapy	2
Chemo radiation therapy	88

Distribution based on surgical profile.

Surgical profile	Number of patients
Mandibuloctomy	12
Hemiglossectomy	7
Wedge or W shaped excision	9
Modified fan flap	3

DISCUSSION

According to Anil.K. Chaturvedi *et al,* oral cancers are among the most common cancer worldwide with an estimated 4, 00,000 incident cases and 2, 23,000 deaths during 2008.[4] These include cancers of oral cavity, pharynx, and larynx. Estimated numbers of chemical compounds in cigarette smoke are 7,357. Around 70 compounds with confirmed carcinogenic activity (nicotine, acetaldehyde, N-nitrosamines, 1, 3 butadiene, benzene, acrolen, aromatic amines and poly aromatic compounds) are present in cigarette smoke.[5] In our study, Head and neck cancer were predominantly seen with incidence rates of 61.1 %. The age groups prone to suffer with Head and Neck cancers are more in 41-50 years age group & least in 71-80 year patients. It is because of the social history of the patient like chewing tobacco and alcohol which are common risk factors for developing Head and neck cancers. Due to the intake of tobacco and alcohol, the entire regular aero digestive tract epithelium may be exposed to these carcinogens.[6] In general, patients undergoing surgery for resection of the primary tumor should undergo dissection of the ipsi lateral side of the neck that is at greatest risk factor for metastasis. Patients with advanced lesions involving the anterior tongue, floor of mouth or lip that approximate or cross the midline should undergo contra lateral submandibular dissection as necessary to achieve adequate tumor resection followed by intensity modulated radiation therapy, which is similar to NCCN guidelines. In our study, the total numbers of patients with surgery were five & the surgical management of regional lymphatic is dictated by the extent of tumor at initial tumor staging and was done as per the NCCN guidelines.[7]

Squamous cell carcinomas (SCC) constitute more than 90 % of all oral cancer. Other malignant tumors can arise from the epithelium, connective tissue, minor salivary glands, lymphoid tissue, and melanocytes or metastasis from a distant tumor.[6] A variety of premalignant lesions have been associated with development of SCC. The more common premalignant lesions including leukoplakia, erythroplakia, oral lichen planus, and oral sub mucous fibrosis have varying potential for malignant transformation. WHO (2005) classifies premalignant lesions according to degree of dysplasia into mild, moderate, severe and carcinoma in situ.

Leukoplakia is a clinical term defined as a "white patch or plaque that cannot be characterized clinically or pathologically as any other disease". This lesion is usually associated with smoking and alcohol use. The prevalence of leukoplakia worldwide is about 2 %. Dysplastic changes are seen in only 2–5 % of patients.[8]

Risk factors for malignant transformation include presence of dysplasia, female gender, and long duration of leukoplakia, location on the tongue or floor of mouth, leukoplakia in non-smokers, size greater than 2cm, and non-homogeneous type. In addition to lifestyle alteration to avoid tobacco and alcohol use, excision constitutes the only definitive modality for accurate diagnosis and treatment.

Erythroplakia is a "bright red velvety patch that cannot be characterized clinically or pathologically as being caused by any other condition". Surgical excision is recommended as these lesions have higher malignant potential than leukoplakia and are commonly associated with dysplasia and carcinoma in situ.[8]

Non-squamous cell carcinomas
Of the oral cavity cancers, minor salivary gland carcinomas represent less than 5 % of the oral cavity cancers. They frequently arise on the hard palate (60 %), lips (25 %) and buccal mucosa (15 %) Mucoepidermoid carcinoma is the most common type (54 %), followed by low-grade adenocarcinoma (17 %) and adenoid cystic carcinoma (15 %).[8] Despite easy self-examination and physical examination, patients often present with advanced stage disease. A comprehensive head and neck exam is mandatory in patients with suspected oral cavity cancer. Visual inspection and palpation allow an accurate impression of the extent of the disease, third dimension of tumor, presence of bone invasion, or skin breakdown. Appropriate documentation with drawings and photographic records of the tumor are useful in staging, decision-making and further follow up.[9]

The clinical TNM stage should be recorded at first encounter and modified as evaluation progresses. The initial workup consists of diagnosis by biopsy. Accessible lesions may be adequately biopsied in the clinic using punch forceps, core needle or fine-needle aspiration. Some patients will require examination under general anesthesia (EUA) in order to access posteriorly located lesions, or to complete a physical exam limited by pain and truisms.

According to Liviu *et al,* highest incidence & prevalence of Oral SCC is found in the Indian subcontinent where the risk of developing Oral SCC. It is increased proportionately by social habits such as tobacco chewing, betel quid & arecanut. In our study, the incidence of Oral SCC patients is 90 % which is similar to their study. The mutagenic effects of tobacco, betel quid & alcohol or arecanut are dependent upon dose, frequency, duration of use & are accelerated by concurrent use of two or more of these agents.[12]

Surgery remains the mainstay for the management of oral cavity tumors. Tumor resection should be performed with a clinical clearance of 1 cm vital structures. Elective neck treatment should be offered for all oral cavity tumors. In our study wide excision & tumor resection was done for 5 patients those are with lymphatic spread to distant organs. Adjuvant chemo radiotherapy in the presence of advanced neck disease or positive margins, improves control rates. The number of patients with Chemotherapy & Radiation therapy was 88. Curative resection surgery for cancer of the oral cavity involves resection with tumor with an appropriate safety margin & subsequent reconstruction of the tissues in order to remain function. The size and location of the primary tumor determin the need or otherwise for adjuncts such as temporary tracheotomy & access procedures. Many tumors in the anterior aspect of the oral cavity can be accessed via the transoral route. However, as tumors' are increased in size, become posteriorly placed controlled resection may only be possible by performing either a lingual release or restoring to lip-split & mandibulotomy.[13] There are several options for lip skin incision with some form of Z-Pasty being desirable to both disguise & lengthen the scar, thus preventing post-operative wound contraction & distortion to the vermilion border. The primary aim of surgery in oral cavity cancer is tumor resection with a clinical clearance of ideally 1cm. Close margins mean further surgery or adjuvant radiotherapy.

In our study, Adoption of mohs type technique where the whole resection bed is mapped out is impractical given the size of average intraoral resection. Frozen section of cancellous bone can be used to guide the extent of resection. Cervical lymphadenectomy in the form of elective neck dissection offers improved overall & disease free survival compared with therapeutic neck dissection for tumors <4 mm in thickness. In the oral cavity primary radio chemotherapy is less commonly utilized than other head & neck sites. Concurrent radiotherapy combines platinum based chemotherapy with external beam radiotherapy (ERBT) to 70Gy. Most recognized concurrent chemotherapy regimen is cisplatin 100 mg/m^2 weekly thrice substitution with carboplatin. Patients undergoing chemotherapy, radiotherapy require speech, swallow & dietetic supports in both acute & long term setting. External beam radiotherapy alone can be used to treat the neck prophylactically after excision of a small primary without a neck dissection. Duration of symptoms reoccur at months or years depends upon the individual.

About 8 % of patients with oral SCC are with distant metastases at the time of diagnosis most frequently to lungs. Surgery is the preferred first line treatment of small accessible Oral SCCs. However, advanced stage Oral SCC is usually treated by Chemotherapy, Radiation therapy and surgery. Most commonly used treatment modality in our study was chemotherapy & Radiation therapy. In our study, the radiation dose given for patients with oral cancer was $\geq$ 50 Gy 92.0 Gy / day) which is similar to NCCN guidelines. According to NCCN Guidelines newly diagnosed unrespectable tumors' should be treated with induction chemotherapy (5FU + cisplatin) followed by radiation therapy which is similar to our study.

CONCLUSION
Head & Neck cancers are more prevalent. Chewing tobacco and consumption of alcohol were the frequently seen risk factors for developing Head & Neck cancers. Many of the patients were on mixed diet. Most of the patients were daily wage employees & were from rural background. Histopathological evaluation reveals more cases of Squamous cell carcinoma when compared to adenocarcinoma .The incidence of Head & Neck cancers and to alert those at risk to the benefits of early detection should include education about the risk factors associated with the disease, about the early signs and symptoms of the disease, and about the hazards of delaying medical professional advice. Professional measurement should include the making available of immediate effective and efficient medical treatment, and of screening programmes. Direct inspection using a dental mirror, tongue depressor & guaze is most commonly done. Abstinence from the use of tobacco, betel quid and moderation in the consumption of alcoholic beverages, together with an increase in fresh fruits and vegetables in the diet, may reduce the incidence of Head & Neck cancer. Clinical pharmacist play an ideal role in oncology department by monitoring ADRs, adjusting dosage regimen, understanding the patients perspective towards cancer, their quality of life, life style, social stigma and relatives' response and Patient counselling. Counseling helps the patients to live without fear and uncertainty. Stress management is the vital role, as people with cancer experience high levels of stress while undergoing treatment. Cancer patients with prolonged treatment experience low self-esteem, depression and

even panic attacks. Regular counseling by clinical pharmacist helps the patients to develop coping strategies which enable them to return to normal living.

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