A Study On Evaluating Administration Prevalence And Type Of Cancer In Addicted Individuals In Cancer Patients At Multi-Speciality Hospital

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ABSTARCT:
Pain is one of the most common symptoms in the cancer population, and cancer-related pain is often treated with opioids. Opioid exposure increases the risk of developing an opioid use disorder (OUD). In addition, a cancer diagnosis can have a significant impact on mental health and wellness, and patients may use substances to cope with psychological distress. Drug and alcohol use exists on a continuum and while not all use is problematic, it may have adverse consequences. A cancer diagnosis provides another possibility for patients to engage in services and treatment for their unsafe use and/or addiction. The case study in this article of a patient with cancer and an SUD is an example of the challenges associated with the chronic and relapsing nature of addiction.

INTRODUCTION

Cancer is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body. Cancer can start almost anywhere in the human body. Cancer is a genetic disease that is, it is caused by changes to genes that control the way our cells function, especially how they grow and divide. Genetic changes that cause cancer can happen because of errors that occur as cells divide, damage to DNA caused by harmful substances in the environment, such as the chemicals in tobacco smoke and ultraviolet rays from the sun, they were inherited from parents.
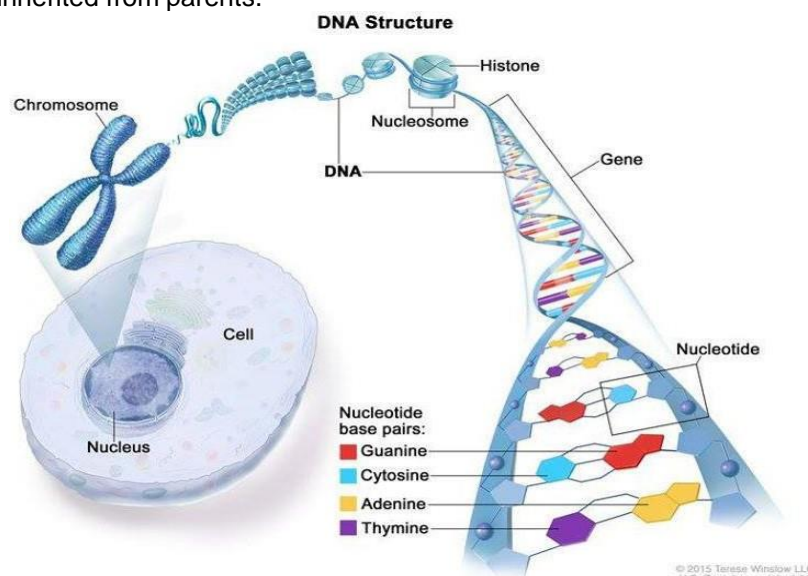
The anticancer drugs either kill cancer cells or modify their growth. However, selectivity of the majority of the

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drugs is limited. Treatment of the malignant diseases with drugs is a rather recent development. The latest innovations target the growth factors, specific signalling pathways, angiogenesis, tumour antigens, etc to introduce a different spectrum of drugs. Cancer chemotherapy is now of established value. In addition to their prominent role in conjunction with surgery, radiotherapy, and immunotherapy in the combined modality. In malignant diseases, drugs are used with aim of:

1. **Cure or prolonged remission**: chemotherapy is the primary treatment that can achieve cure or prolonged remission in *acute leukaemia, retinoblastoma, rhabdomyosarcoma in children and choriocarcinoma, Hodgkin disease, lymphosarcoma etc*

2. **Palliation**: Gratifying results are obtained (shrinkage of evident tumour, alleviation of symptoms) and life is prolonged by chemotherapy in *breast cancer, ovarian cancer, myeloma, prostatic carcinoma, renal carcinoma, malignant melanomas, hepatoma, sarcoma*

3. **Adjuvant chemotherapy**: Drugs are used to mop any residual malignant cells, after surgery or radiotherapy. This is routinely employed now and may achieve apparent cure especially in early breast, lung and colonic cancer.

METHODOLOGY

1) Study site: The study will be conducted in the ONCOLOGY department in the Queen's NRI Hospital.

2) Study design: This is a prospective, non-interventional and observational studies.

3) Study population: 100 population attending oncology IPD and OPD in Queen's NRI Hospital will be recruited into the study with their informed consent.

4) Patient selection: The selection of patients involves the following:

i. Inclusion criteria -

➢ Only those patients who are diagnosed with cancer recruited from oncology IPD and OPD will be included in the study.

➢ Patients of both genders are considered.

➢ Smokers, alcoholics are included in this study.

➢ Patients with co-morbidities are also included in this study.

➢ Patients with > 18 years of age are considered.

ii. Exclusion criteria -

• Pregnancy women and terminally ill are excluded.

• Children and neonates are excluded.

• Patients who are not willing to participate in our study.

• Seriously and mentally ill patients.

5) Study period: The study will be conducted in the Queen's NRI Hospital, Visakhapatnam, for a period of 6 months.

Data collection: A specially designed data collection format was used to collect all the details of information like IP/OP no, Age, Gender, date of admission, date of discharge, Reason for admission, HOPI, Past medical H/o, Past medication H/o, Laboratory tests, diagnosis and Treatment, patient wellbeing, performance status and quality of life.

STATISTICAL ANALYSIS:

Collected data was entered in Microsoft Office Excel 2010 and analysed. Descriptive statistics explained using frequencies and percentages and mode. Chi-square test is used for the variables to test the hypothesis using degree of freedom (2) and level of significance of 0.05 Pearson coefficient is also used to test the correlation between addiction they had and its association with type of cancer caused. Statistical significance was considered at p-value <0.05.

ETHICAL CLEARANCE:

Ethical permission to conduct the hospital-based study was obtained from Institution Ethics Committee before the commencement of the study. Subject confidentiality was maintained during and after the data collection.
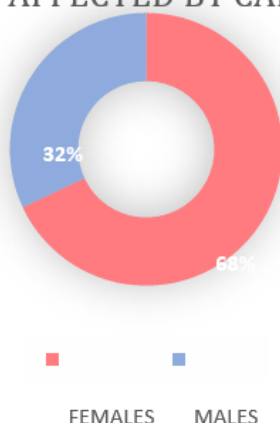
RESULTS AND DISCUSSIONS
RESULTS:

A total of 100 patients were included in this study which was conducted in the Queen's NRI hospital. And among the 100 patients, 68 (68%) females were affected by different types of cancers and 32 (32%) males were affected by different types of cancer.

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GENDER WISE CLASSIFICATION THOSE WHO
ARE AFFECTED BY CANCER

FEMALES   MALES

Among cancer patients, the addicted males were high when compared to females.
In this study of 100 patients a total of 34 (34%) patients were addicted (17 males and 17 females).
In this study of 100 patients, 32 (32%) males were affected by cancer and among them 17 (17% out 100 patients) males had different kinds of addiction, which means a total of 53.125% of males who had different addictions were affected by cancer. And 68 (68%) females were affected by cancer and among them 17 (17% out of 100 patients) females had different kind of addiction, which means a total of 25% of females who had different kinds of addictions were affected by cancer.
By using the chi square test the hypothesis is tested and the obtained result is as follows:

HABITS	FEMALE	MALE	TOTAL
ADDICTED	17	17	34
NON-ADDICTED	51	15	66
TOTAL	68	32	100

Association of addiction in causing cancer:

H_0 = Addiction = not associated in causing cancer H_1 = Addiction ≠ not associated in causing cancer From given data:

HABITS	FEMALE	EXPECTEDVALUE -1	MALE	EXPECTEDVALUE -2	TOTAL
ADDICTED	17	23.12	17	10.88	34
NON- ADDICTED	51	44.88	15	21.12	66
TOTAL	68		32		100

$\chi^2 = \Sigma (O - E)^2 / E$; E = RT x CT / N E_{11} = 34 x 68/ 100 = 23.12
E_{12} = 34 x 32/ 100 = 10.88
E_{21} = 66 x 68/ 100 = 44.88
E_{22} = 66 x 32/ 100= 21.12
Calculation of χ^2 :

O	E	O-E	$(O-E)^2$	$(O-E)^2/E$
17	23.12	-6.12	37.45	1.62
51	44.88	6.12	37.45	3.44
17	10.88	6.12	37.45	0.83
15	21.12	-6.12	37.45	1.77

$\chi^2 = \Sigma (O-E)^2 / E$
= 1.62 + 3.44 + 0.83 + 1.77 = 7.66
Calculated χ^2 = 7.66
V= (c-1) (r-1) = (2-1) (2-1) = 1;
Therefore, tabulated or critical value of χ^2 (at α=0.05) = 3.84
Since the calculated value is greater than the tabulated value, at a level of significance 0.05. Therefore, the

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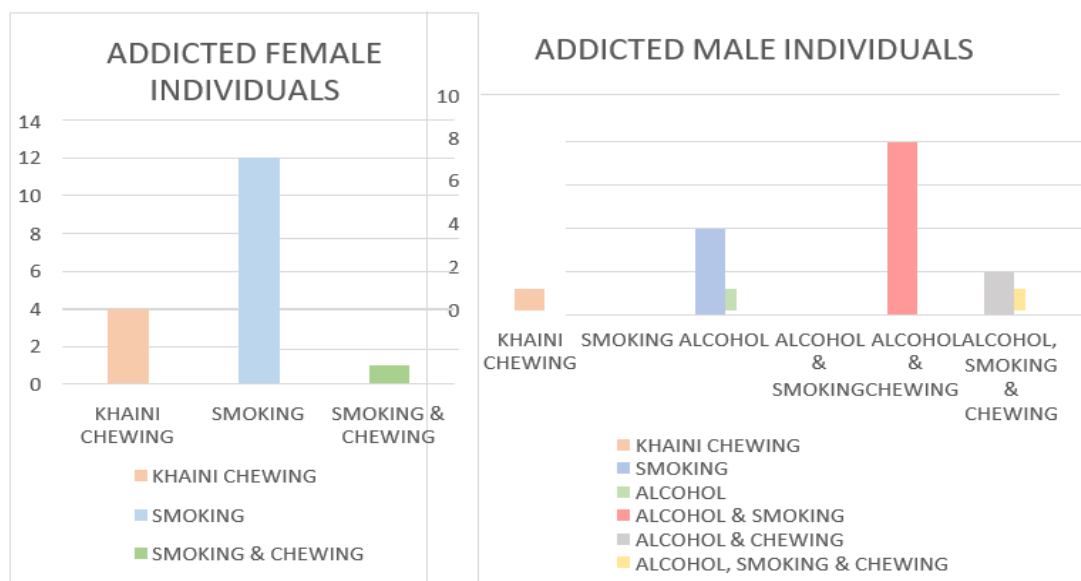
alternate hypothesis is accepted. Hence there is significant association of addiction in causing cancer

PREVALENCE OF AFFECTED MALES AND FEMALESWHO HADADDICTIONS
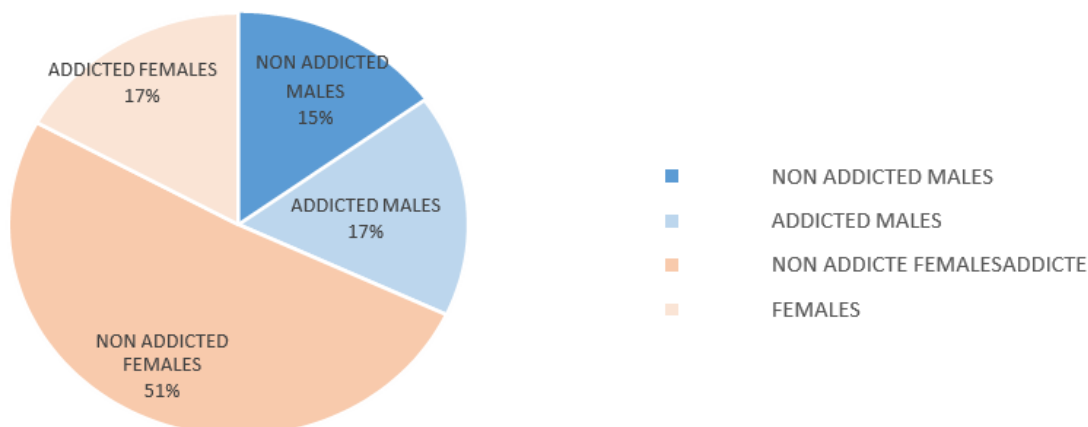
EFFECT OF ADDICTION ON PREVALENCE OF CANCER IN MALES AND FEMALES
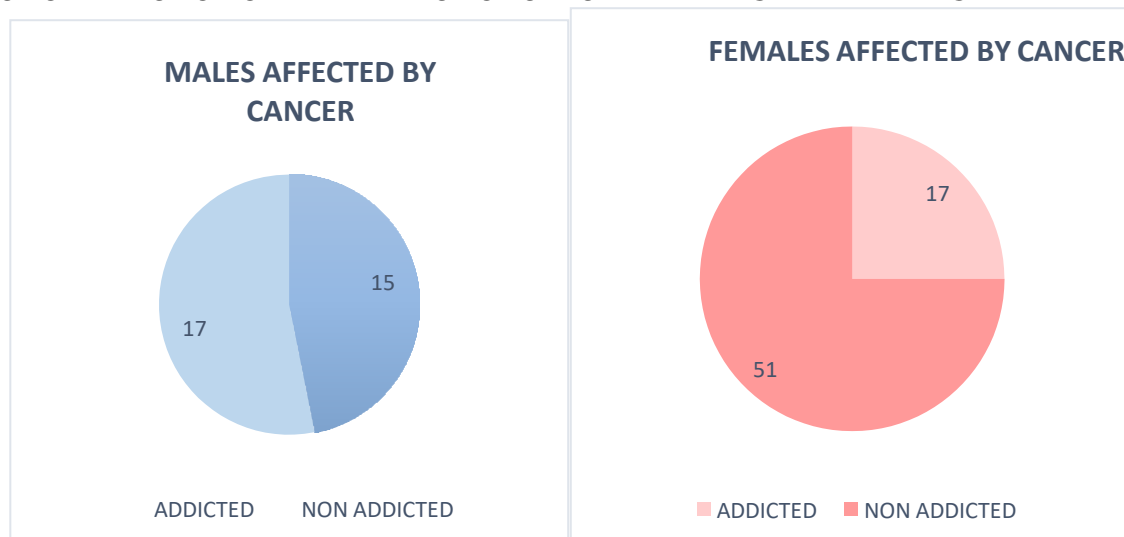
And out of the affected females some had addiction to khaini chewing, some were addicted to smoking and some to both smoking and chewing. And out of affected males some had addiction to smoking, some to alcohol, some to chewing, some to alcohol and smoking, some to alcohol and chewing, and some to alcohol, smoking & chewing.

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PREVALENCE OF TYPE OF CANCER IN ADDICTED INDIVIDUALS

In India many people are affected by cancer. And addiction is one of the important risk factors that is thought to be the reason for occurrence of cancer. Different types of cancers occur in population, but due to addiction, people are more prone to oral cavity and throat cancers. In a sample of 100 patients, there are 17 (17%) male patients and 17 (17%) female patients who have different addictions. Hence total addicted persons affected by cancer comprises 34% (34 patients out of 100).

And in males out of 17 addicted patients, 12 of them were affected by oral cavity and throat cancer, i.e., 70.58 % of the addicted males were affected by oral cavity and throat cancer. And in this study out of all the males (32 patients) who had cancers, 20 of them were suffering from oral cavity and throat cancers. And among the male patients, 60% of the oral cavity and throat cancer was found to be because of the addictions they had.
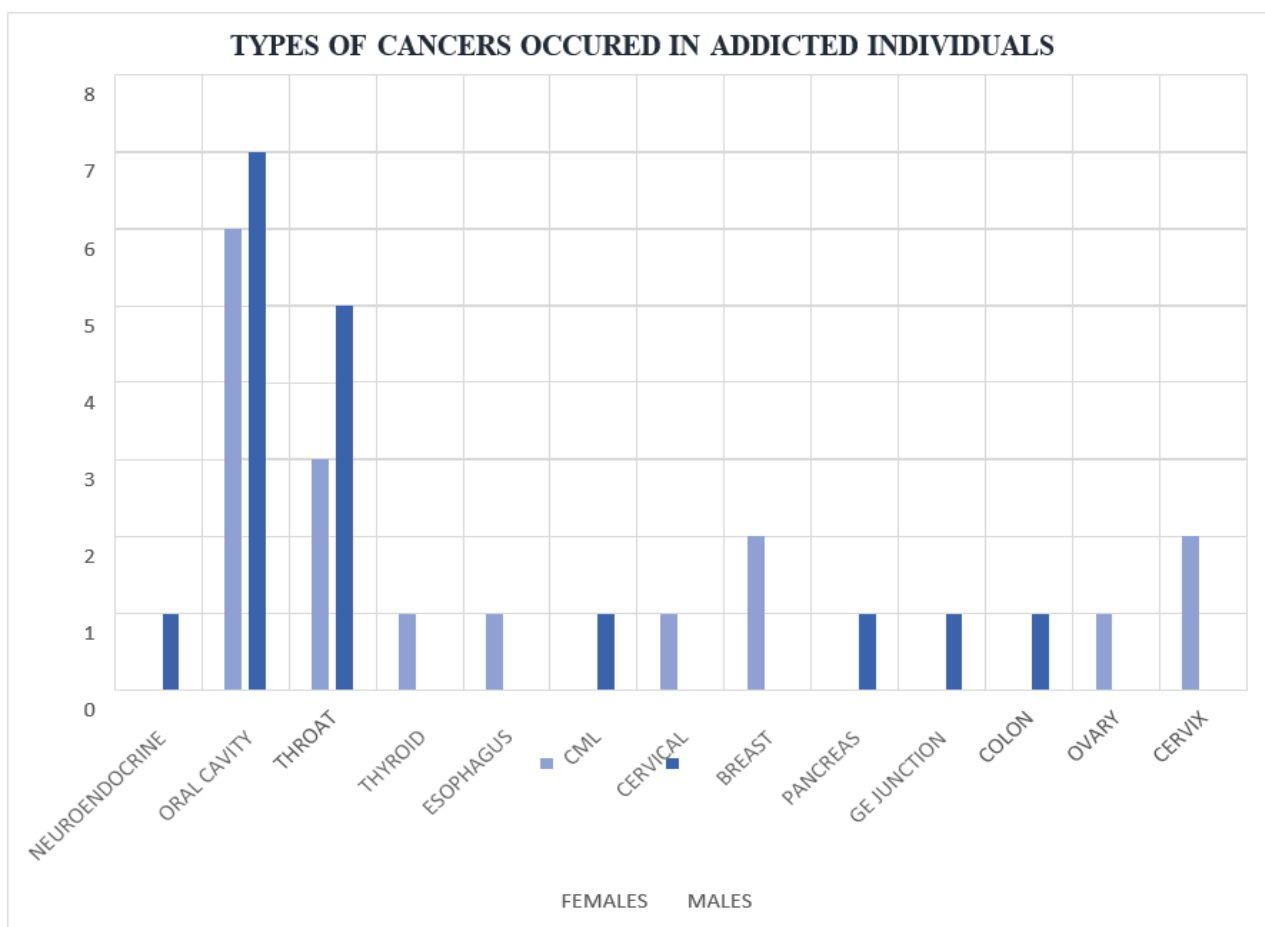
And in females out of 17 addicted patients, 9 of them affected by oral cavity and throat cancer, i.e., 52.94% of the addicted females were affected by oral cavity and throat cancer. And in this study out of all the females (68 patients) who had cancers, 13 of them were suffering from oral cavity and throat cancers. And among the female patients, 69.2% of the oral cavity and throat cancer was found to be because of the addictions they had.

THROAT CANCER INCLUDES:	ORAL CAVITY INCLUDES:
• HYPOPHARYNX	• TONGUE
• AE FOLD	• CHEEK
• POST CRICOID	• BUCCAL MUCOSA
• SUPRAGLOTTIS	• HARD PALATE
• PYRIFORM FOSSA	• FLOOR OF MOUTH
• LARYNX	• GB SULCUS

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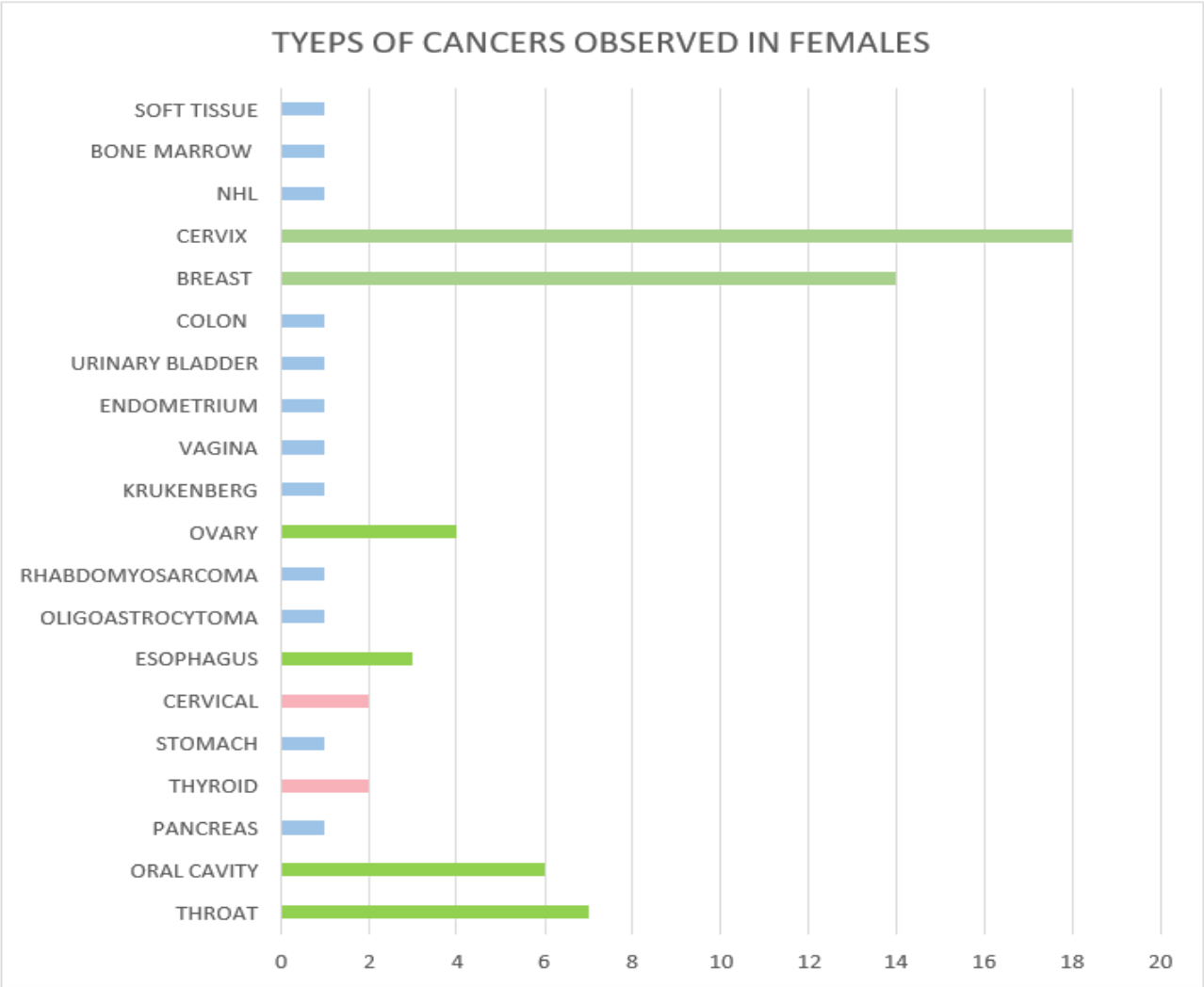

TYPES OF CANCERS MOSTLY OBSERVED

In India there are various types of cancers which occur in the population. In this study we observe various typesof common and rare type of cancers which occur in a sample of 100 patients in Queen's NRI hospital.

Some common type of cancers which are observed in study include throat and oral cavity cancers, cancer of colon, rectum, pancreas, stomach, oesophagus, thyroid, breast, cervix, lymph node etc.
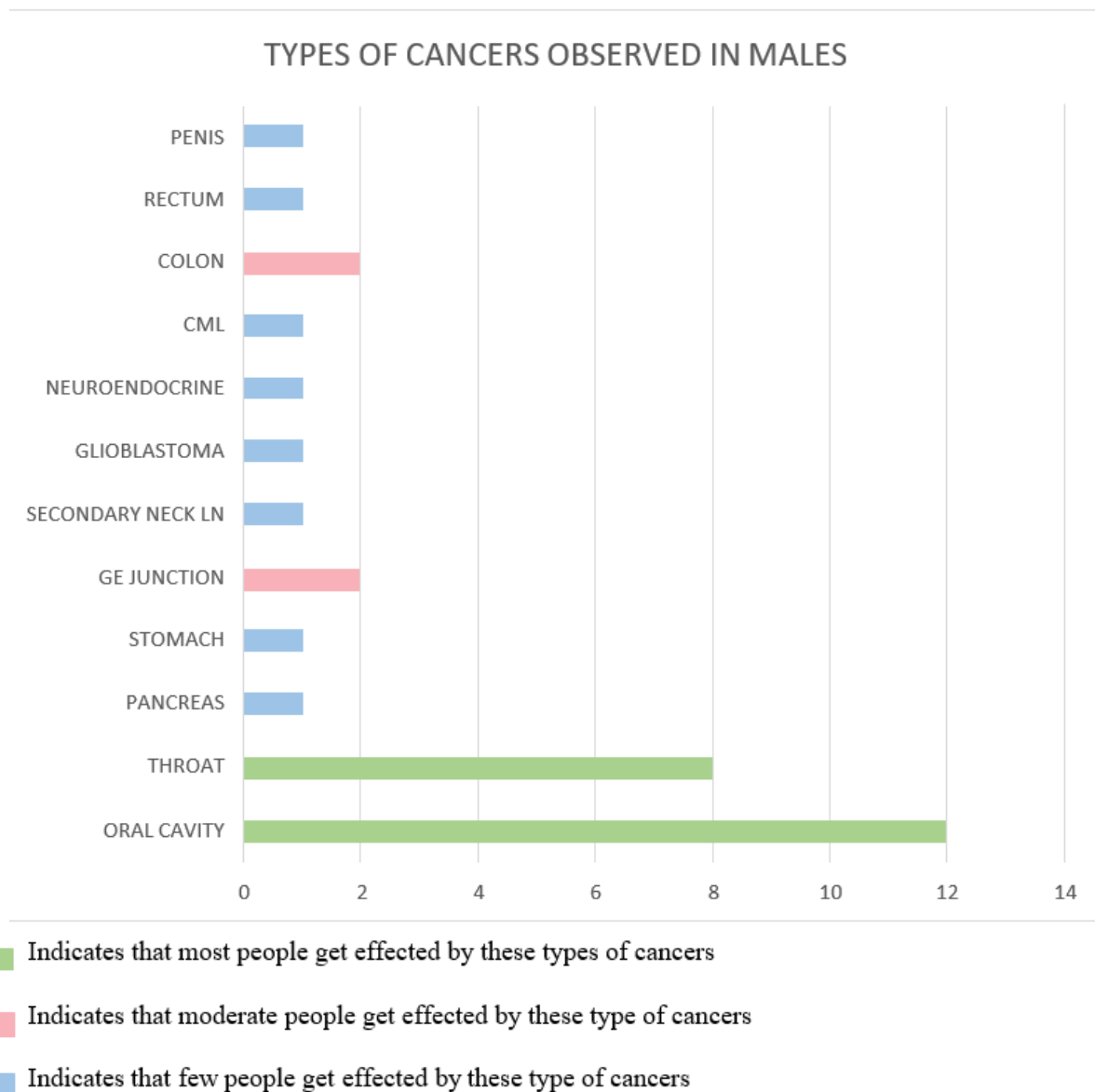
Some uncommon type of cancers which are observed in the study include oligoastrocytoma, rhabdomyosarcoma, krukenberg tumour, glioblastoma multiforme, neuroendocrine tumour etc

The most prevalent cancer in females was cancer of cervix, i.e., 18 female patients were diagnosed by cancer of cervix out of the total 68 female patients. Which means the prevalence of the cancer of cervix is 26.47% and the second most prevalent cancer was breast cancer, i.e., 14 females were diagnosed by breast cancer out of the total68 female patients. Which means the prevalence of breast cancer is 20.59%

And among the males, oral cavity and throat cancer were mostly observed, a total of 20 patients were diagnosed with oral cavity and throat cancer out of the total 32 male patients. Which means the incidence of throat and oral cavity cancer is found to be 62.5% Uncommon types cancers in Queen's NRI hospital were oligoastrocytoma, rhabdomyosarcoma, krukenberg tumour, glioblastoma multiforme, neuroendocrine tumour etc. and their incidence was found to be 5% in a totalof 100 patients' sample.

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TYEPS OF CANCERS OBSERVED IN FEMALES

Indicates that most people get effected by these types of cancers

Indicates that moderate people get effected by these type of cancers

Indicates that few people get effected by these type of cancers

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TYPES OF CANCERS OBSERVED IN MALES

Chart showing types of cancers observed in males (horizontal bar chart):

- PENIS: 1
- RECTUM: 1
- COLON: 2
- CML: 1
- NEUROENDOCRINE: 1
- GLIOBLASTOMA: 1
- SECONDARY NECK LN: 1
- GE JUNCTION: 2
- STOMACH: 1
- PANCREAS: 1
- THROAT: 8
- ORAL CAVITY: 12

Indicates that most people get effected by these types of cancers

Indicates that moderate people get effected by these type of cancers

Indicates that few people get effected by these type of cancers
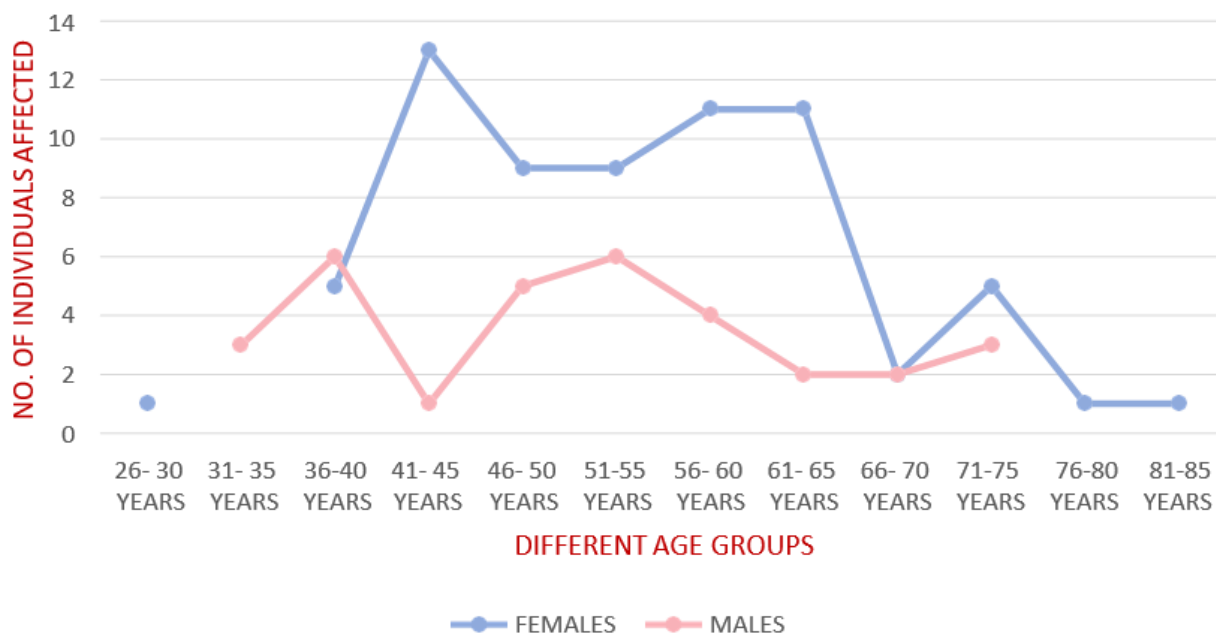
THE AGE GROUP WHICH IS PRONE TO CANCER

In this study different age groups are considered. The children are excluded from the study. Only adults abovethe age of 25 years are considered.

The age group of population which is more prone to cancer is assessed by the following. Among females, 41- 45 years age group is more prone to cancer. And among the males, 36- 40 and 51- 55 years age groups are more prone to cancer.

In both males and females age of 36- 65 years were more diagnosed with cancer.

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THE AGE GROUP MORE PRONE TO CANCER

DRUGS WHICH ARE USED IN THE TREATMENT OF DIFFERENT KINDS OFCANCERS

Observational study which was conducted in Queen's NRI hospital, a multispecialty hospital in which different types of cancers are treated. Most types of cancers are treated by the drug cisplatin, which is most commonly used. A study sample of 100 patients were collected and among them for 61 (61%) of patients were treated withdrug cisplatin who were diagnosed with different types of cancer.
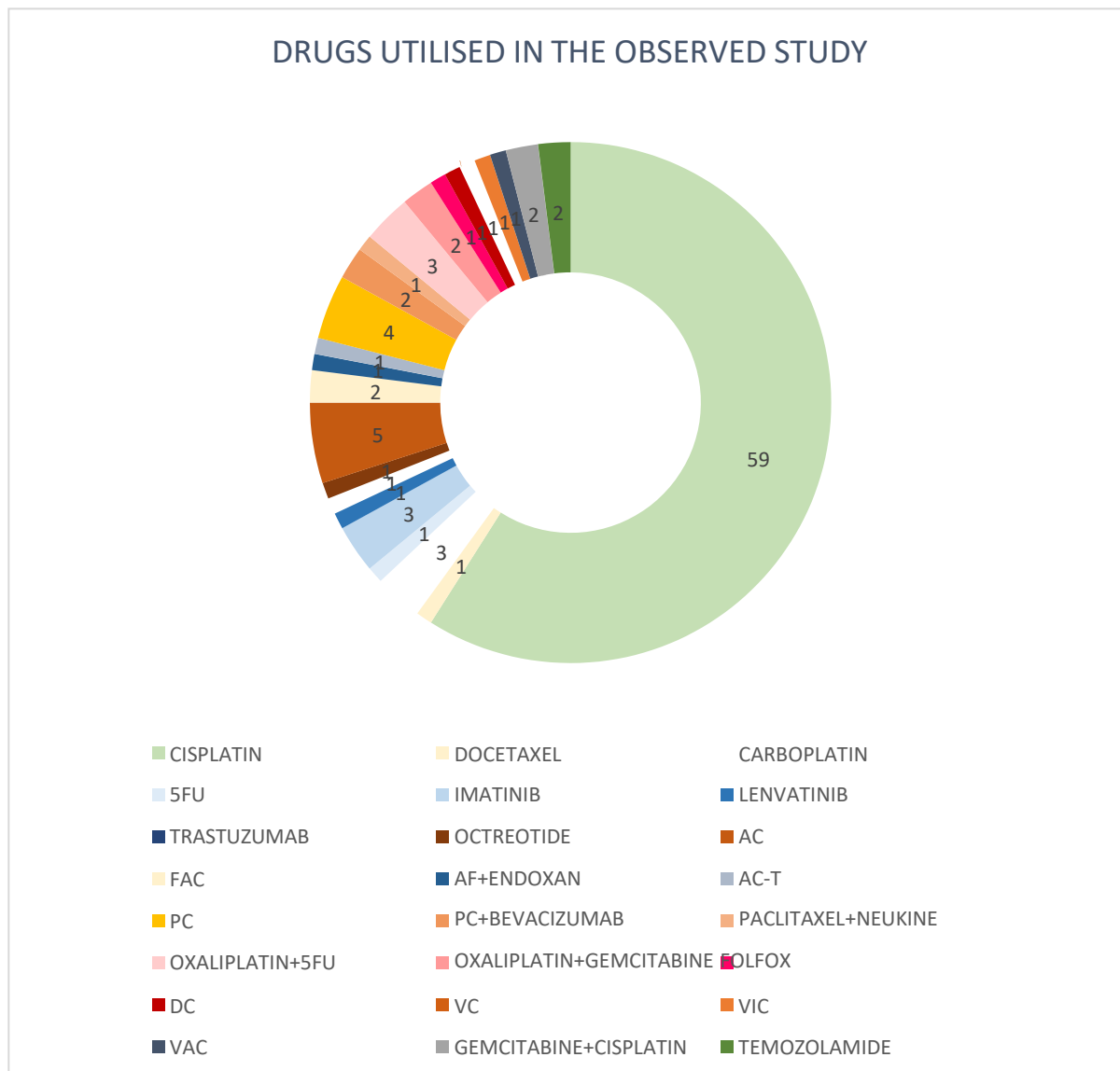
DRUGS & ITS COMBINATIONS	TYPE OF CANCER TREATED
CISPLATIN	Cancer of cervix (16), oral & throat (32), thyroid (1), Oesophagus (2), urinary bladder (1), vagina (1), endometrium (1), cervical (2), GE junction (1), sec.neck lymph node (1), pennis (1).
DOCETAXEL	Cancer of breast (1)
CARBOPLATIN	Cancer of cervix (2), larynx (1)
5 FLUOROURACIL (5FU)	Cancer of colon (1)
IMATINIB	Cancer of stomach (1), bone marrow (1), CML (1)
LENVATINIB	Cancer of thyroid (1)
TEMOZOLOMIDE	Oligoastrocytoma, glioblastoma multiforme (1)
TRASTUZUMAB	Cancer of breast (1)
OCTREOTIDE	Neuro endocrine tumor (1)
ADRIAMYCIN + CYCLOPHOSPHAMIDE (AC)	Cancer of breast (5)
ADRIAMYCIN +CYCLOPHOSPHAMIDE + 5FU(FAC)	Cancer of breast (2)
ADRIAMYCIN + 5FU + ENDOXAN	Cancer of breast (1)
ADRIAMYCIN + CYCLOPHOSPHAMIDE +PACLITAXEL (AC-T)	Cancer of breast (1)
PACLITAXEL + CARBOPLATIN (PC)	Cancer of breast (2), ovary (2)
PACLITAXEL +CARBOPLATIN + BEVICIZUMAB	Cancer of ovary (1)
PACLITAXEL + NEUKINE	Cancer of breast (1)
OXALIPLATIN + 5FU	Cancer of colon (2), stomach (1)
OXALIPLATIN + GEMCITABINE	Krukenberg (1), GE junction (1)
OXALIPLATIN + 5FU + LEUCOVORIN (FOLFOX)	Cancer of rectum (1)
DOCETAXEL + CARBOPLATIN (DC)	Cancer of oesophagus (1)
VINCRISTINE + CYCLOPHOSPHAMIDE (VC)	Rhabdomyosarcoma (1)
VINCRISTINE + CYCLOPHOSPHAMIDE +IFOSFAMIDE (VIC)	Soft tissue sarcoma (1)
VINCRISTINE + CYCLOPHOSPHAMIDE +ADRIAMYCIN (VAC)	NHL (1)

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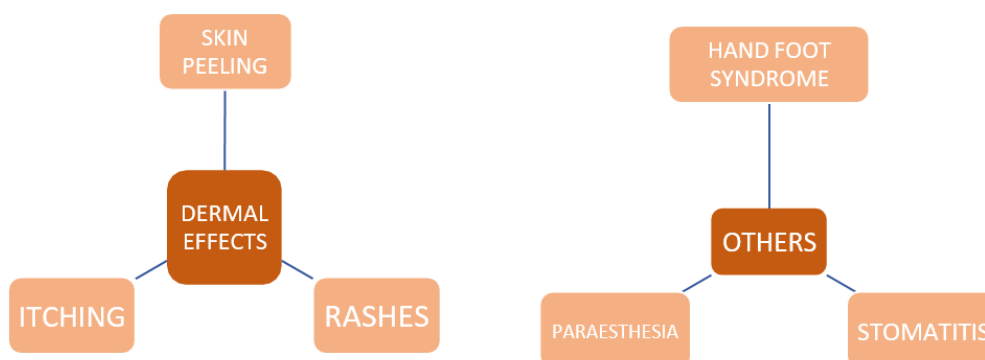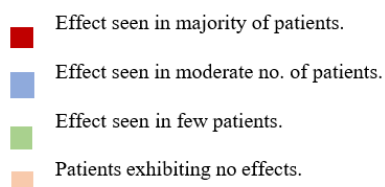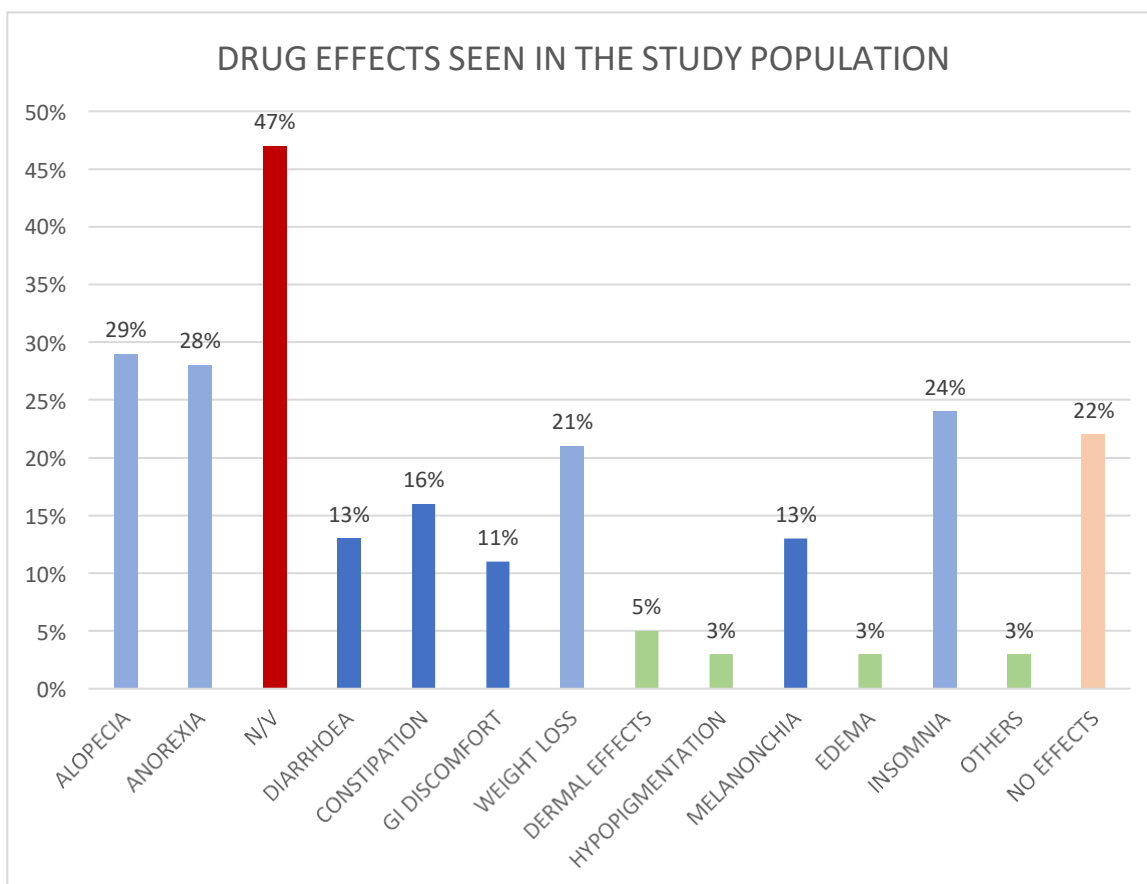|	
GEMCITABINE + CISPLATIN	Ca of pancreas (2)

For several types of cancers single drug regimens have been used like cisplatin, docetaxel, carboplatin, imatinib, Lenvatinib, temozolomide, trastuzumab while for some different have been used like FAC, PC, DC, VAC etc. and their incidence of utilisation by the 100 patients is shown in the above pie chart.

DRUGS UTILISED IN THE OBSERVED STUDY

Legend:
- CISPLATIN
- DOCETAXEL
- CARBOPLATIN
- 5FU
- IMATINIB
- LENVATINIB
- TRASTUZUMAB
- OCTREOTIDE
- AC
- FAC
- AF+ENDOXAN
- AC-T
- PC
- PC+BEVACIZUMAB
- PACLITAXEL+NEUKINE
- OXALIPLATIN+5FU
- OXALIPLATIN+GEMCITABINE
- FOLFOX
- DC
- VC
- VIC
- VAC
- GEMCITABINE+CISPLATIN
- TEMOZOLAMIDE

DRUG EFFECTS SEEN IN CANCER PATIENTS

Various drug effects are seen in chemotherapy patients during the course of treatment. And these effects may be minor or major and some may be life threatening. It is not necessary that every individual undergoing treatment will have these drug effects. Some of the individuals may have very few effects and some may have multiple effects. The drug effect which is seen in majority of patients is nausea/vomiting, and its incidence in total 100 patients is 47% Of all the drug effects occurring in the patients nausea/vomiting has high prevalence, which is 20.70% of all the drug effects. Some drug effects are not commonly seen, and in our study only few patients have been identified with following drug effects such as facial puffiness, hand foot syndrome, stomatitis, paraesthesia etc. and prevalence of each of these effects is 0.4% of all the drug effects.

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DRUG EFFECTS SEEN IN THE STUDY POPULATION

- ■ Effect seen in majority of patients.
- ■ Effect seen in moderate no. of patients.
- ■ Effect seen in few patients.
- ■ Patients exhibiting no effects.

SKIN PEELING — DERMAL EFFECTS — ITCHING — RASHES

HAND FOOT SYNDROME — OTHERS — PARAESTHESIA — STOMATITIS

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