



# An Observational Study of Risk Factors and Quality of Life in Cancer Patients

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Received: 10 Mar 2019 / Accepted: 9 Apr 2019 / Published online: 1 Jul 2019

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## Abstract

**Aims and objectives:** To study the occurrence, morbidity, mortality in various cancers and assess risk factors, quality of life in cancer patients. **Materials and methods:** An observational study has been conducted for a period of 6 months from January 2018-june 2018. Necessary information was collected from the patient records, laboratory data, communication with the patients and their care takers through direct access and on telephone. Modified and translated (local language) FACT-G questionnaire was used to collect the data from the patients. **Results:** Out of 350 cases, reproductive cancers were most commonly seen representing 55.1% followed by gastrointestinal cancer (22%). To study mortality only 213 cases were considered out of which highest mortality rate was seen in cervix cancer (20.8%) followed by stomach (16.6%). **Conclusion:** cervical cancer is the most common cancer in women and has highest mortality rate. It is anticipated that incidence and mortality rate of cervix cancer will continue to increase. Women with higher gravidity and first full term pregnancy before the age of 17 years need to be aware of the potential risk factors.

## Keywords

Cancer, Epidemiology, Risk factors, Quality of life

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## INTRODUCTION:

Cancer is the uncontrolled growth of abnormal cells anywhere in a body. These abnormal cells are termed cancer cells, malignant cells, or tumor cells. These cells can infiltrate normal body tissues. Many cancers and the abnormal cells that compose the cancer tissue are further identified by the name of the tissue that the abnormal cells originated from (for example, breast cancer, lung cancer, colon cancer). Frequently, cancer cells can break away from this original mass of cells, travel through the blood and

lymph systems, and lodge in other organs where they can again repeat the uncontrolled growth cycle. This process of cancer cells leaving an area and growing in another body area is termed metastatic spread or metastasis.

Cancer is the major cause of morbidity and mortality in developing and developed countries. In India, it is estimated that 14.5 lakh people are living with the disease, with over 7 lakh new cases being registered every year and 5,56,400 deaths which are said to be cancer related. An estimated 71 % of all cancer

related deaths are occurring in the age group between 30 to 69 years [1].

Breast cancer is the most common and cervical cancer as the second most common cancer in women in India. Breast cancer accounts for 27% of all cancers in women in India, with the incidence rising in the early thirties and peaking at ages 50-64 years. Cervical cancer accounts for 22.9% of all cancer cases in women. It generally affects the 21-67 age group. The main risk factors for breast cancer include early menarche, use of OC pills, obesity, late post-menopausal, first pregnancy at >30 years of age[2] and for cervix cancer include full term pregnancy before 17, HPV infection, OC pills, more than 3 children[3].

Chemotherapy is one of the approaches for the treatment of cancer. The chemotherapeutic agents are highly complex and cancer patients are a susceptible population with little tolerance to their effects. The magnitude of adverse effects caused by the chemotherapeutic agents is severe which in turn cause decrease in quality of life of the cancer patients.

Early detection of cancer is possible with suitable screening tests and knowledge regarding the signs and symptoms of cancer. Increased incidence of cancer is due to the lack of awareness regarding the cancer among Indian population or due to improper screening tests in the diagnosis of cancer. There is a need for counselling of the patients and their caretaker regarding the cancer and providing psychological and moral support.

## MATERIALS AND METHODS

This is an observational study conducted in oncology department for a period of six months. A total of 350 patients from surrounding region of Warangal were considered and the patient information was collected.

### Study site:

St. Ann's general and cancer hospital, Kazipet.

### Study design:

Observational study

### Study period:

6 months

### Study criteria:

#### Inclusion criteria:

1. Patients diagnosed with cancer and receiving treatment in oncology department.
2. Patients who are able to respond to the questions.
3. Patients who received at least two cycles of chemotherapy.
4. Patients who received at least 5 days of radiation therapy.

#### Exclusion criteria:

1. Pregnant women
2. Patients data without Histo-pathological examination reports.
3. Patients who did not respond to the telephone calls for survival rate have been excluded for this specific parameter.

**Source of data:** patient records, laboratory data, direct communication with patients and their care takers.

**Parameters to be considered:** demographics of patients and laboratory parameters which includes histo-pathological study, complete blood picture and results of radiology techniques. The data collected is kept confidential and used exclusively for research purpose only.

#### Designing of data collection form:

Appropriate data collection form was designed to collect, document and analyse the data. Data collection form included the provision for collection of information related to demographic details (name, age, sex, address), physical condition, psychological status, social activities and financial information of the patient. Risk factors for breast and cervical cancer in women were assessed by taking information on menarche, menopause, use of OC pills, no. of children, age at first childbirth.

#### Study procedure:

- Necessary information was collected from the patient records, laboratory data, communication with the patients and their care takers through direct access and on telephone.
- Modified and translated (local language) FACT-G questionnaire was used to collect the data from the patients.
- Questionnaires are filled by interacting with the patients.
- All the required information was collected in appropriately designed data collection forms.

## RESULTS AND DISCUSSION

Cancer is a major life-threatening disease worldwide. Approximately 14.1 million patients were newly diagnosed with cancer and 8.2 million people died from cancer in 2012 world-wide. The global burden of cancer is expected to grow rapidly due to aging population and westernized lifestyles [4]. Cancers with the highest incident rate are Breast, Stomach, Prostate, Colorectal and Esophagus cancer [5]. In our study we found many cases of reproductive cancers (55.1%), gastrointestinal cancers (22%), Head and Neck cancers (13.1%), lung cancer (5.7%) and endocrine cancers (4%) respectively. The highest cause of mortality in this population was Stomach,

Breast, Esophagus, Lung and Colorectal cancer, respectively [5]. The mortality in our study differed slightly, highest mortality rate was found in cervix cancer, stomach and breast may be due to lack of awareness.

Breast cancer was the most common type of cancer among women [6] and we also observed the same. However, the majority of breast cancer patients were in 50-60 years of age group in our study whereas, it was much younger age in other studies. (Elgailiet *al.*, and Sandhuet *al.*). Early menarche, OC pills, age at first childbirth have a significant relationship with the breast cancer [2], whereas in our study we cannot conclude anything as very few patients were found who used OC pills or had an early menarche.

In India, cervical cancer is the most common cancer in women followed by breast cancer, accounting for 26.1-43.8% of all cancers in Indian women [7]. Our study also showed the similar incidence (31.6%). The mean age was 40-50 years. One study (F.T Zoharaet *al.*, 2017) states that the warning signs for cervical cancer were vaginal bleeding between periods(26.4%), blood in stools/urine(20.4%), menstrual periods that are heavier or longer than usual(17.6%) and vaginal bleeding after menopause(9%), where as our study results indicated the most commonly seen warning signs to be vaginal bleeding after menopause(74%), menstrual periods that are heavier and longer than usual(26%). Lowest level of education and annual family income, HPV infection, use of OC pills, use of intrauterine devices, short interval between menarche and first intercourse, first full term pregnancy before 17 years, women with higher gravidity (> 3 pregnancies), higher number of vaginal deliveries, one or more miscarriages and history of infertility are the significant risk factors for cervical cancer[3] we found some of those factors contributing to cervical cancer in our study like higher gravidity in 28% patients and first full term pregnancy before 17 years age in 53% patients.

Gastric cancer is the most commonly encountered cancer with the incidence rate of 18.8% [1] whereas, it was 5.7% in our study. The mortality rate was 15.5% in [5], whereas it was 16.6% mortality in our study. The factors that contributed to mortality could have been late diagnosis, lack of awareness regarding signs and symptoms and screening test. NCCN guidelines for stomach cancer by [8], states that upper GI endoscopy and CT abdomen as basic diagnostic tests for the stomach cancer.

Among Head and neck cancers, larynx cancer is mostly seen [9], whereas in our study we found

tongue cancer followed by oral cancer are the most commonly seen. When we interviewed patients to find out their habits, we could relate that exposure to risk factors such as habit of tobacco and betel nut chewing resulted in their becoming cancer victim. The incidence of oral cancer and tongue cancer was found to be 4% and 3.4% respectively. A majority of oral cancer cases are seen in males than in females in the ratio of 3:1.3 and 2:1 ratio in case of tongue cancer which is similar to [9].

#### Quality of life:

As there is insufficiency of traditional endpoints (which are mainly focused on the biologic and physiologic outcomes) in capturing the effects of interventions on patients' health-related quality of life (HRQoL), a growing interest has emerged during the past decades for assessing determinant factors of patients' HRQoL, especially in chronic diseases.

The quality of life was assessed by FACT-G scale, which is a validated tool to assess QoL in people with cancer, across different nationalities. The FACT-G is comprised of four subscales: physical well-being (PWB; 7-items, score range 0-28), social/family well-being (SWB; 7-items, score range 0-28), emotional well-being (EWB; 6-items, score range 0-24), and functional well-being (FWB; 7-items, score range 0-28). Physical well-being contains questions like lack of energy, nausea, having trouble in meeting the needs of family, having pain, feeling ill, bothered by the side effects of treatment. Social well-being contains questions like getting emotional support from friends and family, feeling too close to partner, family has accepted his/her illness. EWB includes feeling of sadness, being nervous, worry about dying or condition, losing hope. FWB includes ability to work, ability to enjoy life, accepting the illness, sleeping.

Questions were phrased so that higher numbers indicated a better health state. All questions in the FACT-G use a 5-point rating scale (0 = Not at all; 1 = A little bit; 2 = Somewhat; 3 = Quite a bit; and 4 = Very much). Scoring the FACT-G is performed through a simple sum of item scores.

Majority (66%) of the patients had fairly favourable QoL [10,11]. A strong correlation was found between QoL and number of CT cycles which is similar to our study where we found majority of patients had good QoL in all the four domains physical domain(41.8%),social-domain(38.2%),emotional-domain(29.7%),functional domain(34.04%) that is patients needs emotional and family support which is similar to the study.

### 1) Distribution of cancers:

**Table-1:** No. Of cancers Vs types of cancers

S.No.	Cancer	No.of cases	Percentage
1	Reproductive cancers	193	55.1%
2	Gastrointestinal cancers	77	22%
3	Head and neck cancers	46	13.1%
4	Lung cancer	20	5.7%
5	Endocrine cancers	14	4%

A total of 350 cases were collected

### 2) Gender-wise distribution:

#### A) Gender wise data distribution of reproductive cancers:

**Table-2:** Gender wise distribution of reproductive cancers

S.No	Reproductive cancers	No.of cases	Percentage
1	Breast cancer	73	37.8
2	Cervix cancer	61	31.6
3	Ovarian cancer	25	12.9
4	Endometrial cancer	14	7.25
5	Vaginal cancer	9	4.66
6	Vulva cancer	5	2.5
7	Penis cancer	6	3.1

Out of 193 cases, female reproductive cancers are 187 and male reproductive cancers are 6. Breast cancer (37.8%) and cervix cancer (31.6%) are the most commonly seen reproductive cancer in women.

#### B) Gender wise data distribution of gastrointestinal cancers:

**Table-3:** Gender wise data distribution of gastrointestinal cancers:

S.No	Gastrointestinal cancers	Male	Female
1	Stomach cancer	10	10
2	Colon cancer	8	7
3	Rectal cancer	8	3
4	Oesophageal cancer	6	4
5	Liver cancer	7	3
6	Periampullary cancer	2	4
7	Anal cancer	3	2

Total number of GI cancers were found to be 77. There is not much gender variation in the incidence of GI cancers. The risk factors for cancer like changing food habits, eating less natural food and more processed food affect men and women equally.

#### C) Gender wise data distribution of head and neck cancers:

**Table-4:** Gender wise data distribution of head and neck cancers:

S.No.	Head and neck cancers	Male	Female
1	Oral cancer	9	5
2	Tongue cancer	8	4
3	Post cricoid cancer	2	5
4	Larynx cancer	3	3
5	Floor of mouth	4	1
6	Hypopharynx	2	0

Overall head and neck cancers seem to affect men more than women as per occurrence observation in this region.

**D) Gender wise distribution of other cancers:**
**Table-5: Gender wise distribution of other cancers**

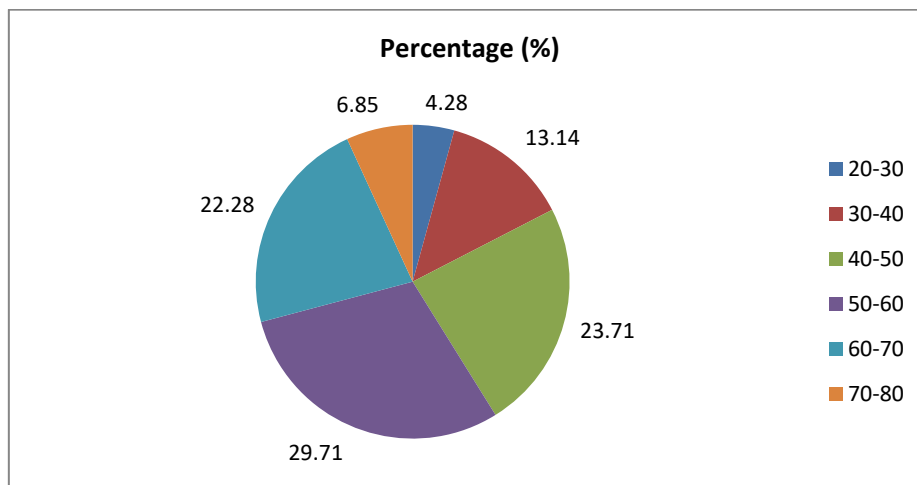
S.No.	Other cancer	Male	Female
1	Thyroid cancer	4	6
2	Pancreatic cancer	2	2
3	Lung cancer	12	8

Among other cancers lung cancer is mostly seen.

**3)Age-wise distribution of cancers:**
**Table -6: Age-wise distribution of cancers:**

S.No.	Age	No. of cases	Percentage (%)
1	20-30	15	4.28
2	30-40	46	13.14
3	40-50	83	23.71
4	50-60	104	29.71
5	60-70	78	22.28
6	70-80	24	6.85

In our study, out of 350 cases many cases were found among the age group of 50-60(29.71%).


**Figure-1: Age wise distribution of cancers**

When cancer patients were categorised age wise most cases were seen in 50-60 age group. The reason could be cancer progression being a slow process for many of the cancers. Young people become victims to fast growing /progressing cancer.

**4)Mortality Vs cancer type:**
**Table-7: Mortality Vs cancer type**

S.No.	Cancer	No. of cases	Mortality	Percentage (%)	Mortality rate
1	Cervix	55	15	27.27	20.8
2	Stomach	15	12	80	16.6
3	Lung	11	10	90.90	13.8
4	Oesophageal / GE	7	5	71.42	6.94
5	Oral	9	6	66.66	8.3
6	Breast	65	7	10.76	9.72
7	Liver	3	3	100	4.16
8	Ovary	10	4	40	5.55
9	Rectal	9	3	33.33	4.16

10	Tongue	12	3	25	4.16
11	Vulva	2	2	100	2.77
12	Colon	6	1	16.66	1.38
13	Periampullary	1	1	100	1.38
14	Endometrial	4	0	00	0
15	Anal	2	0	0	0
16	Vaginal	1	0	0	0
17	Penis	1	0	0	0

In our study, highest mortality rate was seen in cervix followed by stomach , lung cancer.

### 5)Risk factors for cervix cancer:

**Table-8:** Risk factors for cervix cancer:

S.No.	Risk factors	No. of cases
1	Age at first childbirth<17	24
2	>3 pregnancies	13
3	OC pills	3

Out of 55 cases of cervix cancer, 24 patients had their first full term pregnancy before 17 years, 13 patients had more than 3 children and 3 patients used Oc pills.

### 6) Quality of life:

#### i)Physical domain:

**Table-9:** Physical domain

S.No	QoL	No. of cases	Percentage
1.	Worse	18	12.7
2.	Average	28	19.8
3.	Good	59	41.8
4.	Best	36	25.5

Of 141 subjects, most of the subjects were with good scoring in physical domain of QoL i.e. (59%) followed by best (36%).

#### ii)Social domain:

**Table-10:** Social domain

S.No	QoL	No. of cases	Percentage
1.	Worse	12	8.5
2.	Average	34	24.1
3.	Good	54	38.2
4.	Best	41	29

In the study population most of the subjects were with good followed by best scoring in social domain i.e. (54% and 41%).

#### iii)Emotional domain:

**Table -11:** Emotional domain

S.No	QoL	No. of cases	Percentage
1.	Worse	14	9.92
2.	Average	55	39
3.	Good	42	29.7
4.	Best	30	21.27

In emotional domain of the study population, average scoring is seen in majority of cases followed by good scoring (55% and 42%).

**iv)Functional domain:**
**Table-12: Functional domain**

S.No	QoL category	No. of cases	Percentage
1.	Worse	15	10.6
2.	Average	38	26.9
3.	Good	48	34.04
4.	Best	40	28.3

In functional domain of the study population, good scoring was seen in majority of cases followed by best scoring (48% and 40%)

**V. CONCLUSION**

Of all the cancers in our study many were reproductive cancers among which breast and cervix cancer were most common. A high mortality was seen in cervix cancer followed by stomach and lung cancer. The highest mortality rate of cervix cancer may be due to lack of awareness regarding warning signs and screening test and unhygienic conditions as many people in our study were from poor economic background. Risk factors for breast and cervix cancer were assessed. Our observation indicated that very early pregnancy, too many conceptions and excessive use of OC pills can be associated with a higher incidence of cervical cancer. Spreading awareness regarding modifiable risk factors as well as screening test for early detection may help in reducing cervix cancer incidence and mortality. Quality of life in cancer patients was assessed by using a validated FACT-G scale which has four domains physical, social, emotional and functional domain. Patient's overall quality of life was good but in majority of the patient's emotional domain was poor, where pharmacist can play an important role.

**ACKNOWLEDGEMENTS:**

At the outset, we would like to express our gratitude and sincere thanks to sister Nirmala, administrator, for permitting us to do clinical research at St.Anns general and cancer hospital. In spite of her busy schedule, she helped me at every step in completion of this thesis. We would like to express our sincere thanks to Dr.K.V.Ragavaiah and Dr.Prathap Reddy for their immense support. We sincerely thank Dr.P.Manjula for her immense knowledge on the clinical research and it is a great experience working under her guidance. We profusely thank Dr.P.Kishore, Dr.D.Sudheer Kumar, Care College of pharmacy for their valuable suggestions, for the best infrastructure and facilities provided.

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