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Original Research Article

Profile of gynecological malignancies after the start of gynecology oncology surgeries in Sikkim-experience from a tertiary hospital in North East India

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ABSTRACT

Background: North East is the “cancer capital” of India where there is acute lack of oncologists and oncology facilities. Objectives of the study were to evaluate the trends of gynecological malignancies and to evaluate the need for oncology facility in Sikkim.

Methods: This is a retrospective desk review conducted in department of obstetrics and gynecology at Sikkim Manipal institute of medical sciences, India, for a period of three years after the start of oncology surgeries. Women operated for any gynecological malignancy were taken into the study while women referred outside for alternative treatment were excluded from the study.

Results: A total 29 women with gynecological malignancies were operated during the 3-year period. Of the total, 17 (58%) were women operated for carcinoma ovary, 6 (21%) for cancer cervix and 6 (21%) for carcinoma uterus. Epithelial ovarian cancer was the most common ovarian cancer. 105 women with large complex ovarian masses were operated during the three-year period, however, only 17 women were diagnosed with cancer of which 8 women had stage I disease while 9 women had advanced disease (stage III-IV). 12 women underwent primary debulking surgery while 5 women underwent interval debulking surgery. Average age for cervical cancer was 48 years, average age for ovarian cancer was 46 years while 52 years was the average age for cancer uterus.

Conclusions: High number of gynecological malignancies operated in the only center offering minimum oncological surgical facility points towards the need for a specialized center providing all the needs for treating oncology cases in Sikkim

Keywords: Gynecological, Cancer, Surgery, Facility

INTRODUCTION

North Eastern (NE) states of India bears the highest burden of cancer in the country. This region is also called the ‘cancer capital’ of India. The national average of reported cancer incidences in female is 103.6 per lakh

population. This incidence of malignancies is between 150-250 cases per lakh in the North Eastern part of India, which is double the national average.¹ Specific districts such as Aizawl (Mizoram) and Papumpare (Arunachal Pradesh) have reported the highest age-adjusted cancer incidence rates within this regional belt.¹ The reason for

this high prevalence is a combination of lifestyle, low awareness and late detection. Expert oncologists and adequate treatment infrastructure such as hospitals and diagnostic facilities are at a shortage in the North Eastern region of India which are also reasons for the underestimation of cancer incidence. Even with the highest burden of cancer in the country, the number of adequately equipped treatment centers in the North Eastern region are very low. There are only few centers in the entire north eastern belt that offer essential treatments such as surgery, chemotherapy and radiation for cancer patients. Dedicated oncology centers are present in the 6 states of NE except Sikkim. Lack of oncologists make most patients reliant on local physicians, general physicians and referral hospitals, who can merely refer patients to Kolkata, Delhi or other cities in neighboring states for treatment.

Sikkim is a small hilly state in the North-East India with a population of 607 696 (census 2011) of which 47% are women.² Preventable cancer such as cervical cancer, is still the most common gynecological cancer in Sikkim (10.3%).³ General consensus among the clinicians in Sikkim suggests that cancer rate in Sikkim is very high, however, with no dedicated oncology center in the state the accurate estimation of oncological cases is yet to be made. Access to health care in Sikkim is challenging and difficult as it is located in the mountainous terrain. The disadvantage of the geographical location and the logistic difficulties in conducting tests at these locations make screening methods almost non-existent. With the lack of a dedicated oncology center in Sikkim, people diagnosed with cancer need to be referred outside the state. Majority of the population are daily wage earners in Sikkim, hence, most women diagnosed with malignancies cannot afford treatment as they do not have enough money for travel and treatment. Referring patients outside state also leads to low compliance, because patients need to visit a hospital quite frequently for cancer treatment.

Central referral hospital in Sikkim started providing surgeries for women suffering from gynecological malignancies since July 2017. Radiation therapy began from early 2020 while chemotherapy is being advocated for a long time at Sir Thutob Namgyal memorial (STNM) hospital, Sikkim. This observational study was thus conducted to evaluate the trends in gynecological malignancies after the start of gynecology oncology surgeries in Sikkim so that it can help the health care system to improve and provide better care for patients suffering from cancer. Human capacity building and facilities developed in the future through the recognition of the need, in this difficult location will pave way for screening and treatment to the “at-risk” women of Sikkim and neighboring states of India.

Objective of the study were to evaluate the trends in the gynecological malignancies after the start of gynecology oncology facility in Sikkim and to evaluate the need for oncology facility in Sikkim.

METHODS

Study design

This is a retrospective observational study of collected data. This study was conducted in department of obstetrics and gynecology, central referral hospital (CRH), Sikkim Manipal institute of medical sciences, Sikkim, India for a period three years (July 2017-August 2020) i.e., after the start of gynecology oncology surgeries. Data of women included in study was obtained from operational records in hospital electronic database.

Inclusion and exclusion criteria

Women operated for any gynecological malignancy at central referral hospital, (SMIMS), were included into the study while women in advanced stage of the disease who were referred outside for alternative treatment were excluded from the study.

Computation of the data was done using Microsoft excel where the incidences of the cases were calculated and the year wise data represented using charts and graphs.

RESULTS

During the three-year period (July 2017-August 2020), 29 women with gynecological malignancies were operated at CRH, SMIMS. Of the total, 17 (58%) were women operated for carcinoma ovary, 6 (21%) for cancer cervix and 6 (21%) for carcinoma uterus (Figure 1).

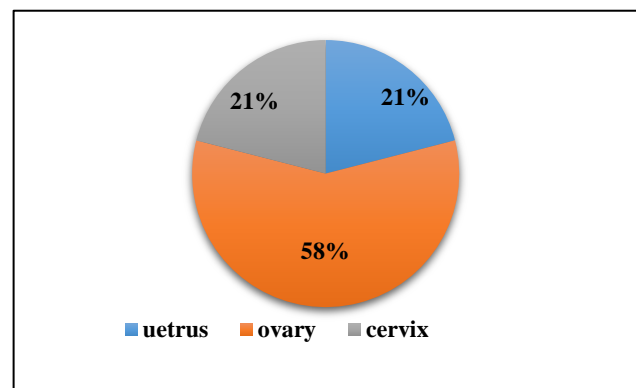


Figure 1: Percentage of women with gynecological cancer operated at CRH (2017-2020).

Epithelial ovarian cancer was the most common cancer ovary. There were two cases of carcinoma vulva and one case of carcinoma vagina which were in advanced stage of the disease for which they were referred outside the state for radiotherapy. Figure 2 shows the number of cases operated per year. There were 105 women with large complex ovarian masses who were operated at CRH during the three-year period, however, only 17 women were diagnosed with cancer. 8 women had Stage I disease while 9 women had advanced disease (stage III-IV). 12

women underwent primary debulking surgery (PDS) while 5 women underwent interval debulking surgery (IDS). Average age for operated cervical cancer was 48 years, for ovarian cancer was 46 years while 52 years was the average age for uterine cancer.

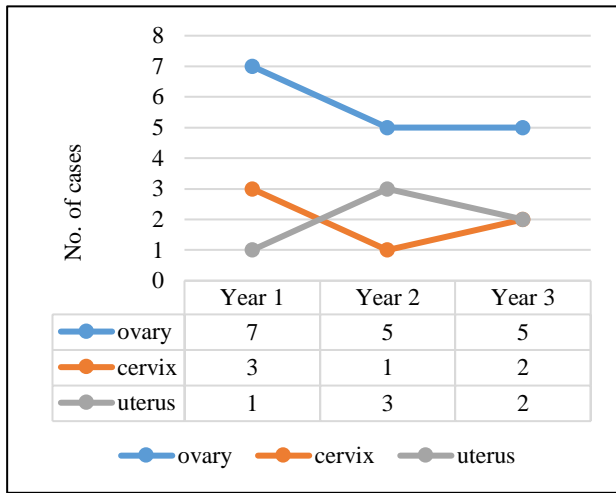


Figure 2: Number of malignancy cases operated per year.

DISCUSSION

According to Globocan 2018, there were 1,157,294 new cancer cases and 784 821 cancer related deaths in India. Cervical cancer accounted for 16.5% of cancer in female (second only to breast) and carcinoma ovary accounting for 6.2% cases in females.⁴ The projected number of patients with cancer in India for the year 2020 is 1,392,179 according to national cancer registry programme.¹ These factsheets show a significant rise in cancer rates in India. Government of India in its effort to fight against the rising incidence of cancer has implemented “strengthening of tertiary care cancer facilities scheme”. Through this scheme government is helping the states and union territories in India to setup state cancer institutes (SCI) and tertiary care cancer centers (TCCC). Plans for setting up of 16 SCIs and 20 TCCCs have been approved till date.⁵ At present there are 27 regional cancer centers in India set up under the national cancer control programme which work towards cancer detection, diagnosis, therapy, rehabilitation, education, training and research in cancer.⁶ Cancer statistics, 2020 shows that the highest cancer incidence rate was observed in the NE region (6 PBCRs for males and 4 PBCRs for females) than other areas in the country. Aizawl district (269.4) and Papumpare district (219.8) had the highest age-adjusted cancer incidence rates among males and females, respectively.¹

Sikkim is a small hilly state in the North-East India with a population of 6,07,696 (census 2011) of which 47% are women.² Sikkim is socio culturally and geographically distinct from other Indian states. For healthcare delivery, there are two referral hospitals (CRH and Sir Thutob

Namgyal memorial/STNM hospital), one district hospital in each district (4 districts) with 24 primary health care centers. The two referral hospitals are located in the capital, Gangtok.⁷ There is no dedicated, fully equipped, oncology center in the state while cancer related deaths are on the rise. Chemotherapy is being advocated for a long time at STNM hospital while radiotherapy has just begun. Radiation therapy for the people of Sikkim came into clinical practice during the early months of 2020. CRH has been providing surgical facilities for gynecological malignancies since July 2017. According to the national cancer registry programme 2009-2011. Age adjusted incidence rates (AARs) of cancer in Sikkim were; cervix 7.4, corpus uteri 1.2, ovary 3.3 per 1,00,000 population while according to the 2012-2016 national cancer registry programme the AARs of cervical cancer in Sikkim is 10.3, corpus uterus 1.4, ovary 4.5 per 100,000 population.^{8,9} This shows a significant increase in cancer rates in females in Sikkim (Figure 3). Report of national cancer registry programme 2012-2016 on annual percent change for selected sites of cancer-Sikkim shows 1.7% increase in cervical cancer from 2005 to 2016 (Figure 4).¹⁰

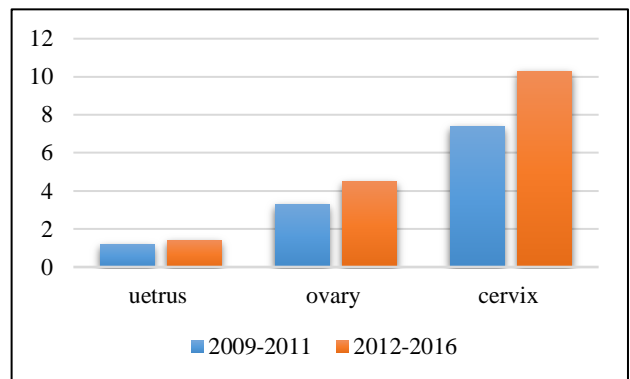


Figure 3: Comparison of age adjusted incidence rates of cancer in Sikkim.

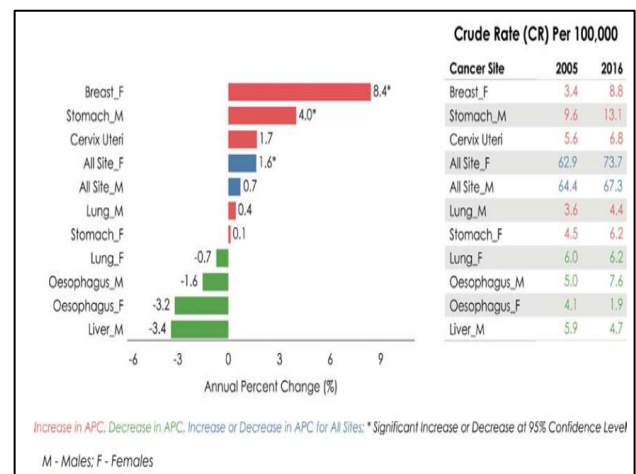


Figure 4: Annual percent change for selected sites of cancer-Sikkim state: ©report of national cancer registry programme 2012-2016.

Gynecological onco-surgery facilities were made available for women in Sikkim since July 2017 at CRH, Sikkim Manipal institute of medical sciences. There were 29 women with various gynecological malignancies who have been operated during the three-year period (July 2017-August 2020). Many women had to be referred to higher center as CRH is not an oncology center and does lack few facilities for the treatment of cancer. Of the total, 17 (58%) were women diagnosed with carcinoma ovary, 6 (21%) with carcinoma cervix and 6 (21%) with carcinoma of uterus (Figure 1). Epithelial cancer ovary was the most common type of cancer in ovary. There were 105 women with large ovarian complex masses operated at CRH during the three-year period, out of which 17 women were diagnosed with malignancy. Availability of frozen section in the institute made surgical decisions much easier, especially for primary debulking surgeries. 12 women underwent primary debulking surgery while 5 women underwent interval debulking surgery. In our study the average age of women suffering from ovarian cancer was 46 years. The average young age in ovarian cancer group may be due to detection of early-stage disease in younger women which could be operated at CRH while older women had advanced disease at detection and was sent for chemotherapy or advanced surgery at higher center outside the state. Cervical cancer is the second most common cancer in women in Sikkim (10.3%), next only to breast cancer. Human papillomavirus (HPV) is the culprit for majority of cervical intraepithelial neoplasia (CIN) and cervical cancers. Laikangbam et al in a study states the prevalence of HPV virus as 12.5% (HPV 16 and 18) in Sikkim.¹¹ International screening bodies currently recommend HPV DNA test as the standard screening test, however, for women in Sikkim the only screening modality available is Pap smear. Sikkim is in the mountainous terrain and access to health care is challenging. The disadvantage of the geographical location and the logistic difficulties make screening methods almost non-existent in this region. Web based data of the two referral hospitals of Sikkim, which provides the cytology facility, show that less than 20% of women have had cytopathology done in 2018. There is a general consensus among clinicians of Sikkim, that cervical cancer in Sikkim present to the clinician at an age younger than national average (55-59 years) and are at an advanced stage of disease at diagnosis.¹² Average age for cervical cancer operated at CRH during the study period was 48 years while many younger women had advanced stage of the disease at diagnosis and had to be referred for radio-chemotherapy. Sikkim is the first state in India to start the HPV vaccination among the age group of 9-12 years girls which can be of help to reduce the incidence of cervical cancer in future. However, presently women at reproductive age group and elderly need screening to detect CIN and cervical cancers at early stage. With < 20% of women undergoing Pap smear, the incidence of cervical cancer cannot be reduced in the coming years unless screening is strengthened. Many studies on sampling techniques and tests are being

conducted in Sikkim at present, as a part of research, to evaluate the prevalence of HPV and cervical cancer which can be of help to overcome the poor acceptance of existing methodology and pave way for application of good surveillance. Endometrial cancer in India has an incidence of 13 328 according to Globocan 2018 factsheet.⁴ In Sikkim AARs of cancer of corpus uteri is 1.2 according to the 2012-2016 data.⁹ In our operated population 23% women had uterine malignancy with average age of 52 years. Women suffering from uterine pathology have early symptoms such as bleeding per vagina due to which women visit the clinician early, unlike other gynecological cancers. The low incidence of endometrial cancer may be due to early detection of endometrial abnormality such as endometrial hyperplasia with atypia. Many women have been operated or treated with levonorgestrel-releasing intrauterine system (LNG IUS) at CRH for endometrial hyperplasia with atypia.

Among the 29 women operated for gynecological malignancy, only 3 women are on follow up. This high “lost-to-follow up” may be due to the difficult geographical terrain which makes it difficult for people to reach the hospital. The existing myths in the society and fear that the cancer may return may also be some of the reasons why women do not wish to come for follow up. The availability of surgical oncologist and chemo-radiation facilitates at different referral centers makes it difficult to conduct multidisciplinary team meetings which is necessary for decision making in cancer treatment. Setting up of a separate oncology facility with dedicated health care workers will help to focus on people suffering from malignancies and help build up policies to reduce incidences and reach out to the “lost-to-follow up” patients. These dedicated healthcare workers can help to increase awareness about cancer and reduce myths existing in this socio-culturally different and geographically difficult population.

Along with the facility of surgery at CRH for women suffering from gynecological malignancies and the start of radiation therapy at STNM, the state was able to handle gynecological malignancies cases well during the COVID-19 pandemic lockdown when movement inside or outside the state was strictly restricted. However, with the growing incidence of cancer in the state, the need of a specialized oncology center with trained specialists and facility is the need of hour for people in Sikkim.

Limitations

The above data is the data only on gynecological malignancies operated in Sikkim for the last three years and does not reflect the total gynecological malignancy rate in Sikkim.

CONCLUSION

Central referral hospital (CRH) is neither an oncology center nor does it have an oncology department, however,

oncological surgeries have been provided by the department of obstetrics and gynecology of the institute for women suffering from gynecological malignancies. Surgeries for advanced cancer cannot be conducted at CRH, as it is not an oncology center and the facilities for the same are not available, hence, women need to be referred outside the state for the same. The two referral hospitals in the state are equipped with different modalities of treatment which shows the need for a specialized center with all the provisions of cancer treatment at one place in this mountainous terrain. With the growing rate of malignancies, especially preventable cancer such as cervical cancer, screening facilities need to be strengthened in the state.

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