ABSTRACT

Background: Most gynaecological causes of death are related to pregnancy such as ectopic pregnancy, unsafe abortion, septic incomplete abortion, and gestational trophoblastic diseases. Hence, it was necessary to review the non-pregnancy related causes of gynaecological deaths in our centre.

Aims and Objectives: The aim of this study was to review gynaecological deaths due to non-pregnancy related causes among women in our centre at the University of Calabar Teaching Hospital (UCTH).

Materials and Methods: This was a 5-year retrospective review of case notes of women who died in the gynaecological ward of UCTH. The demographic profile of the women, the diagnosis and the cause of death were extracted for analysis. All those whose diagnoses were pregnancy related were excluded.

Results: There were 38 gynaecological deaths, which were not pregnancy related. Of these, ovarian cancer (19) and cervical cancer (11) constituted 30 cases or 78.9% of causes of death. Endometrial cancer (3), uterovaginal prolapse (3), uterine leiomyosarcoma (1), and vulvovaginal cancer (1) constituted 8 cases or 21.1% of deaths. No deaths were recorded from uterine fibroids, dysfunctional uterine bleeding, pelvic inflammatory disease, etc.,

Conclusion: Cancers constitute the majority of causes of gynaecological deaths in women who are not pregnant. This emphasises the need for cancer prevention, early diagnosis and effective treatment.

Key words: Death; gynaecological disease; non-pregnant women; University of Calabar Teaching Hospital.

Introduction

Most of the mortalities in gynaecological wards, especially the emergencies, are from complications of early pregnancy. Ectopic pregnancy, septic incomplete abortion, unsafe abortion and its complications and gestational trophoblastic diseases have been reported to contribute to maternal deaths.[1,2]

It appears that environmental factors have a significant impact on the development of gynaecological cancers, and hence emphasis on avoidance of tobacco and unsafe sex, adherence to a balanced diet rich in fruits and vegetables, moderate exercise and use of the oral contraceptive are measures to substantially reduce a woman's cancer risk.[3]

Overall, 12.5% of all deaths are attributable to cancer, and if the trend continues, it is estimated that by 2020, 16 million new cases will be diagnosed per annum, out of which 70% will be in developing countries.[4]
In a comprehensive global cancer statistic from the International Agency for Research on Cancer, gynaecological cancers constituted approximately 19% of the estimated 5.1 million new cases, 2.9 million cancer deaths and 13 million 5-year prevalent cancer cases among women in the world in 2002. Cervical cancer accounted for 493000 new cases and 273000 deaths; uterine body cancer accounted for 199000 new cases and 50000 deaths; ovarian cancer accounted for 204000 new cases and 125000 deaths; cancers of the vagina, vulva and choriocarcinoma together constituted 45900 cases.[5]

Apart from cervical cancer where screening is associated with reduction in cancer mortality, screening for vulvar, vaginal, endometrial, fallopian tube and ovarian cancers are yet to be fully elucidated.[6] Early stage of disease at presentation and astute clinical evaluation and management are important clinical determinants of good prognosis.

This study was undertaken to review the causes of non-pregnancy related gynaecological deaths among women in the gynaecological ward at University of Calabar Teaching Hospital (UCTH).

**Materials and Methods**

This was a 5-year retrospective review of case notes of women who died in the gynaecological ward from January 1st 2010 to December 31st 2014. Approval from the Research/Ethics Committee was obtained at the proposal stage of this study. The demographic profile of the patients, the diagnosis and the cause of death were extracted from the case notes for analysis. All those whose diagnoses were pregnancy related were excluded. In addition, all those whose diagnoses were not known were also excluded. In our centre, breast diseases are managed by the general surgeons, hence, there were not included in our study.

The data was entered and analysed using the Statistical Package for Social Sciences (SPSS, IBM) version 22 for patient characteristics, causes of death and trend analysis presented using frequency tables and line graph.

**Results**

During the study period, there were 38 non-pregnancy related deaths recorded in the gynaecological ward register. Nineteen were due to ovarian cancer, 11 were due to cervical cancer, 3 were due to endometrial cancer and another 3 were due to uterovaginal prolapse, whereas uterine leiomyosarcoma and vulvovaginal cancer caused 1 death each. This is shown in Table 1.

| Cause of death             | Frequency | Percent |
|----------------------------|-----------|---------|
| Ovarian cancer             | 19        | 50.0    |
| Cervical cancer            | 11        | 28.9    |
| Endometrial cancer         | 3         | 7.9     |
| Uterovaginal prolapsed     | 3         | 7.9     |
| Uterine leiomyosarcoma     | 1         | 2.6     |
| Vulvovaginal cancer        | 1         | 2.6     |
| **Total**                  | **38**    | **100.0** |

Cancer (35, 92.1%) was the most common non-pregnancy related gynecological cause of death in this study. The annual distribution of the deaths is shown in Table 2. Mean age of patients at death was 55.1 ± 24.1 years, ranging from 23 to 78 years, with the age group distribution shown in Table 3.

| Year | Frequency | Percent |
|------|-----------|---------|
| 2010 | 3         | 7.9     |
| 2011 | 17        | 44.7    |
| 2012 | 8         | 21.1    |
| 2013 | 7         | 18.4    |
| 2014 | 3         | 7.9     |
| **Total** | **38** | **100.0** |

| Variable (years) | Frequency | Percent | Mean age ± SD (range) |
|------------------|-----------|---------|----------------------|
| General age distribution | 20-24 | 1 | 2.6 | 55.1 ± 24.1 |
|                   | 25-29 | 2 | 5.3 | (23-78) |
|                   | 30-39 | 2 | 5.3 | |
|                   | > 40  | 33 | 86.8 | |
| **Total**         | 38    | 100.0 | |
| Ovarian cancer    | 20-29 | 3 | 15.8 | 45.7 ± 13.1 |
|                   | 30-39 | 2 | 10.5 | (23-62) |
|                   | > 50  | 5 | 26.3 | |
| **Total**         | 19    | 100.0 | |
| Cervical cancer   | > 40  | 11 | 100.0 | 57.0 ± 11.8 |
| **Total**         | 11    | 100.0 | (40-78) |
| Endometrial cancer| > 40  | 3 | 100.0 | 55.3 ± 4.5 |
| **Total**         | 3     | 100.0 | (51-60) |
| Uterovaginal prolapse | > 40  | 3 | 100.0 | 50.0 ± 10.0 |
| **Total**         | 3     | 100.0 | (40-60) |
| Vulvovaginal cancer |       | 1 | 100.0 | |
| Uterine leiomyosarcoma | > 40  | 1 | 100.0 | 55.0 |
| **Total**         | 2     | 100.0 | |
Ago, et al.: Non-pregnancy related gynaecological causes of death in a Nigerian tertiary hospital

The mean age at presentation and diagnosis was 55.1 ± 24.1 years. It was lower for patients with ovarian cancer (45.7 ± 13.1 years). It is interesting to note that 26.3% of the patients who died of ovarian cancer in our centre were less than 40 years old. Painfully, we had a 23-year-old never pregnant nullipara (Para0) who presented with stage IVb endodermal sinus tumour. She underwent successful optimal debulking surgery though with fertility conservation, and six courses of (bleomycin, etoposide, cisplatin) chemotherapy. Unfortunately, there was an aggressive relapse, with splenic and hepatic infiltrations, and the patient could not afford secondary surgery. The role of fertility sparing surgery in this case has been found adequate in some studies. In a Gynecologic Oncology Group study of 132 survivors of platinum-based chemotherapy for ovarian germ cell tumour, median survivor age at diagnosis was 24.3 years and the median age at study entry was 35.5 years (approximately 10 years of follow up), 71 of the 132 (53.8%) of the patients had fertility sparing surgery, out of which 24 patients had successful pregnancies and deliveries, whereas premature menopause was documented in only 2 women.

Ovarian cancer was the most common cause of death in our study. This was the situation in the United States of America where malignant neoplasms of the ovary cause more deaths than any other female genital cancers. The largest number of patients with ovarian cancer are in the age group 55–64 years (median 63 years). However, in our study, although the mean age for ovarian cancer was 45.7 ± 13.1 years, the largest number of patients had an age range of 50–62 years. This finding is similar to an earlier study in Enugu, where the mean age of cases with ovarian cancer was 45.4 ± 17.1 years. However, it was different from demographic data at a neighboring teaching hospital (Abakaliki) where most of the patients with ovarian cancer were in the 60–69 age group.

Cervical cancer was the second most common cause of death in our study. This is probably because our practice guideline has been of early intervention and referral radiotherapy, either as adjunctive therapy or primary therapy. Some of the patients lost to follow-up either died in the course of radiotherapy or died at home, unable to afford radiotherapy. We have reported some of the challenges in the management of cervical cancer in our center elsewhere.

The patients who died of endometrial cancer had surgeries elsewhere but were referred to our centre. They presented at advanced stages and died while been evaluated for treatment. The patient with vulvovaginal cancer had also had excisional biopsy three times at a peripheral hospital. She presented...
with severe anaemia following profuse bleeding from the necrotic vaginal cancer lesion and died shortly after blood transfusion prior to surgery. The late presentations and advanced stages of the disease were responsible for these deaths. The patient with leiomyosarcoma died following anaesthetic complication, whereas the 3 patients who had uterovaginal prolapse (procidentia with decubitus ulcers) died of sepsis and complications during surgery.

**Conclusion**

Gynecological malignancies constitute the majority of non-pregnancy related gynecological causes of death in this study. There is the need for an intensified effort toward public awareness on prevention, early diagnosis and treatment of cancer.

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**Conflicts of interest**

There are no conflicts of interest.

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