Cancer of the Ovary in Nnewi, Nigeria

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Abstract
Background: Ovarian cancer is the leading cause of death from gynaecological cancer worldwide.
Objectives: This study was to determine the prevalence, risk factors, clinical presentations, treatment modalities and outcome of ovarian cancer in a tertiary health care institution.
Materials and Methods: A 5-year retrospective study of patients with ovarian cancer managed in Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, South Eastern Nigeria, between 1st January 2003 and 31st December 2007 was undertaken. The data was collected by scrutinizing the case files collected from the medical records department,
Results: There were 29 cases of ovarian cancer out of total of 122(23.8% of all gynaecological malignancies) gynaecological malignancies and2.9% of 1003 gynaecological admissions. The mean age of the patients was 52.9 ± 1.7 years. More than 60% of the patients were above 50 years and 66.7% were grandmultipara. Abdominal swelling (47.8%) followed by abdominal pain (13.7) were the commonest presenting symptoms. Only 2 (7.4%) patients had a family history of cancer. Stage III (76.9%) was the modal stage at presentation. Approximately 63% were epithelial tumours. Most of the patients (88.9%) had cytoreductive surgery and 92.3% of these had adjuvant chemotherapy. Two (7.6%) patients died intra-operatively, while 75.0% of the patients died within 6 months of therapy.
Conclusion: The prevalence of ovarian cancer was high in Nnewi and environs. Majority of patients presented late and mortality was high despite multimodal therapy. Public enlightenment to increase awareness and introduction of screening programme for early detection is advocated.

Introduction

Ovarian cancer is the leading cause of death among gynaecological cancers[1,2]. Although it accounts for only 3-4% of cancer in women, it is the fourth leading cause of cancerrelated death in females in the United Kingdom and United State[2,3,4]. It is the third commonest cause of cancer related death in African women[5]. The high mortality associated with ovarian cancer is mainly due to late presentation at which most cases are diagnosed[2]. Generally, cancer of the ovary is a disease of the postmenopausal women with the highest incidence in patients aged 65-70years.[2,3]

The aetiology of ovarian cancer is incompletely understood,[2,5] however, it is believed that repeated ovulation may be the stimulus for tumour initiation[5,6]. This is borne out by the observation that factors associated with reduced number of ovulations are protective for cancer of the ovary[5]. These factors include prolonged use of the oral contraceptives, multiparity, prolonged breastfeeding and chronic anovulation.[5,7] A positive family history of ovarian cancer is a strong risk factor for developing the condition[1].

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In high risk populations especially in BRCA1 and BRCA2 mutation carriers, strategies to either prevent ovarian cancer or make earlier diagnosis are of importance[8]. Whereas women from the general population have a 1-2% lifetime risk of developing ovarian cancer, those with germ line mutation in the BRCA and tumour suppressor genes have an approximately 40% lifetime risk of developing the disease[8]. The increased awareness of the genetic risk factors associated with ovarian cancer and the mortality associated with the condition has lead to demands for ovarian cancer screening by both the public and health professionals[1].

Despite advances in the diagnosis and treatment, mortality rates have not improved significantly in recent years[9]. The poor prognosis is related to the advanced stage at presentation and strategies to diagnose ovarian cancer at an earlier stage are therefore warranted[1]. Furthermore, more women die from ovarian cancer than from the carcinoma of the cervix and carcinoma of body of the uterus combined[8].

Against this backdrop, this study aims to determine the prevalence, risk factors, clinical presentations, histo-pathological types, treatment modalities and the outcome of management of ovarian cancer in Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi South-East Nigeria. The information obtained from this review will undoubtedly help in suggesting strategies for detection and improvement in the level of care given to these patients.

Materials and Methods

We undertook a retrospective study of all the patients with ovarian cancer who were admitted into the gynaecological ward of the Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, South East, Nigeria, between 1st January 2003 and 31st December 2007 (A 5 - year period).

The names and hospital numbers of all patients with ovarian cancer managed were extracted from the gynaecological ward register. The gynaecological ward register also provided the total number of gynaecological admissions and gynaecological malignancies over the study period.

We recorded 29 cases of ovarian cancer out of 122 gynaecological malignancies and 1003 gynaecological admissions. Only 27 case files (93.1%) were retrieved from the

Table 1: The Age Distribution of the Patients with Ca Ovary Seen in NAUTH, Nnewi.

Age Range	Frequency	Percentage (%)
11-20	1	3.7
21-30	1	3.7
31-40	4	14.8
41-50	4	14.8
51-60	9	33.3
61-70	1	3.7
71-80	6	22.3
81-90	1	3.7
Total	27	100

Table 2: The Parity Distribution of the Patients with Ovarian Cancer Seen in NAUTH Nnewi.

Parity	Frequency	Percentage (%)
0	1	3.7
1-4	8	29.6
≥ 5	18	66.7
Total	27	100

medical records department of the hospital. Information on the age, parity, risk factors, clinical presentations, histo-pathological types, treatment options and outcomes were extracted from the case files. The data was entered into a computer and analysed using the EPI-INFO version 3.3.2 software. Results are presented as percentages and tables.

Results

During the five-year study period, there were a total of 29 cases of ovarian cancer admitted out of the 1003 gynaecological admissions giving a prevalence of 2.9%. Also, in this period of study, there were 122 cases of gynaecological malignancies and hence ovarian cancer constituted 23.8% of all gynaecological malignancies.

The mean age of the patients was 52.9 ± 1.7 years, with a range of 13-81 years. The age distribution of the patients is shown in table1.

The highest prevalence were found in two age groups- 51-60 years and 71-80 years, each accounting for 33.3% and 22.3% of the patients respectively. Only 2 (7.4%) of the patients were 30 years or younger while 17 (63.0%) of the patients were above 50years of age. The parity of the patients ranged from 0 to 10. The majority, 18 (66.7%) patients were grand-multiparous, 9 (29.6%) were multiparous, while only 1 (3.7%) was nulliparous. This is shown in table 2. Of the possible risk factors recorded in the patients' case files two (7.4%) patients had family history of cancer, 1 (3.7%) had used oral

Table 3: The Presenting Symptoms of Patients with Ovarian Cancer Seen in NAUTH, Nnewi.

Symptom	Frequency	Percentage (%)
Abdominal swelling	21	47.8
Abdominal pain	6	13.7
Weight loss	4	9.1
Vaginal bleeding	3	6.8
Waist pain	3	6.8
Nausea	3	6.8
Weakness	2	4.5
Anorexia	2	4.5
Total	44	100

* Many patients presented with more than one symptom.

Table 4: The Histological Type of Ovarian Cancer Seen in NAUTH Nnewi.

Histological Type	Frequency	Percentage (%)
Serous cyst-adenocarcinoma	8	33.3
Mucinous cyst-adenocarcinoma	6	25.0
Endodermal sinus tumour	4	16.7
Granulosal cell tumour	3	12.5
Borderline	2	8.3
Clear cell tumour	1	4.2
Total	24	100

contraceptive pills, while none had any history of the use of ovulation induction drugs.

Table 3 shows the clinical symptoms / features of the patients. The majority 21 (47.8%) of the patients presented with abdominal swelling, followed by abdominal pain, 6(13.7%) and weight loss, 3 (9.1%)

Almost all the patients, 26 (96.3%) had exploratory laparatomy while only 1(3.7%) had no surgery. The commonest surgical procedure performed at laparatomy was primary debulking (cyto-reduction) 88.9% followed by total abdominal hysterectomy (TAH) and bilateral salpingo-ophorectomy (BSO) 7.4%. None of the patients had BSO alone. Of the 26 patients that had surgery 24 (92.3%) received adjuvant chemotherapy while 2 (7.6%) did not. One of the patients died intra-operatively due to haemorrhage and the other was due to anaesthetic death. Only 1 (3.7%) patient received neo-adjuvant chemotherapy.

Table 4: Shows the histological types of ovarian cancer seen in the patients. It was predominantly of the epithelial type. The commonest histological type was serous cyst-adenocarcinoma (33.3%) followed by mucinous cyst-adenocarcinoma (25.0%), endodermal sinus (yolk sac) (16.7%) and granulosal cell tumour (12.5%).

The stage of the disease at laparatomy is shown in table 5. Stage III was the most common diagnosis (76.9%) followed by stage IV (15.4%) and stage II. No patient had stage I disease.

Table 6 shows the outcome of the follow up of the patients that received chemotherapy. Of the 25 patients that received chemotherapy, majority, 13 (52.0%) were lost to follow up, while only 4 (16.0%) received six courses of chemotherapy

Table 5: The Staging Laparatomy Findings of Patients with Cancer Seen in NAUTH Nnewi.

Stage	Frequency	Percentage (%)
I	0	0.0
II	2	7.7
III	20	76.9
V	4	15.4
Total	26	100

Table 6: The Outcome at Follow-Up of Patient on Chemotherapy at NAUTH Nnewi.

Course	Frequency	Percentage (%)
6 Courses	4	16.0
< 6 Courses	8	32.0
Lost of Follow up	13	52.0
Total	25	100

(Cisplatin, Adriamycin and cyclophosphamide). Of the 12 patients who were not lost to follow up, 9 (75.0%) died within 6months of commencing therapy.

Discussion

In this study, the prevalence of ovarian cancer was 2.9%. This finding was quite high when compared to 1.5% in Ibadan[11]. Also this study has revealed that ovarian cancer constituted 23.8% of all gynaecological malignancies in our centre. This figure was higher than few reports from other parts of Nigeria, such as 9.8% in Ibadan[11], 11.9% in Benin[12] and 16.3% in Maiduguri[13] but lower than 27.0% in Kano[14]. It was also higher than the overall worldwide rate of 3-4% of all gynaecological malignancies.

The increased prevalence rate in our centre may be due to the status of the hospital as a referral centre from various clinics both private and public; it is also probably due to the reduced number of the total gynaecological admissions over the years of study when compared to other centres like Ibadan which has high volume of total gynaecological admissions. In addition, Westernized life style among our women folk could be responsible.

In this study, the peak age of prevalence of ovarian cancer was 51-60years. The mean age was 52.9 $\pm$ 1.7years. This finding was in line with the report in Benin where the peak age of incidence was also between 51-60years[12], but differ greatly from the study in Ibadan[11] where more than 60% of the patients with ovarian cancer were 50years or younger. It also compared favourably with peak age incidence of 65-74 years reported in developed countries[2,3]. The probable reason for this high peak age of incidence could be that cancer of the ovary is a disease of the post menopausal women and in Nigeria, the mean age of menopause is 48years plus or minus 5 years[3,15]. Furthermore, the fact that there was no reliable screening test for cancer of the ovary may be contributory for this findings[1,16]. As a result most patients present only when condition has become full blown and advanced. In this regard, younger women might have been treated by herbalists or not present at all for treatment.

Multiparity is said to be protective for ovarian cancer[5], rather this was not the case in our findings in the study. The majority of patients (66.7%) in our study were grand-multiparous. This however was not in agreement with other studies[11,12] and in the literature[2,3,17]. Pregnancy was expected to be associated with a risk reduction of 13-19% per pregancy[3]. The reason why high parity predominates in the patients with ovarian cancer could be that high parity was not an independent protective factor in ovarian cancer development. This calls for further investigation.

Abdominal swelling, abdominal pain and weight loss were the most frequently reported symptoms in this study, this agrees fully with the study in Ibadan[11], Benin[12] and documentations in the literature[2,3,17]. The

abdominal swelling may be due to the enlarging ovarian mass or ascites. Weight loss may have occurred in association with chronic anorexia[17] often leading to malnutrition. These symptoms would have been different if the patients presented earlier.

The majority of our patients (76.9%) presented with stage III disease followed by stage IV (15.4%). Up to 76.2% of patients had stage III disease in a similar study conducted in Ibadan[11] and Benin[12]. The stage of presentation affects the prognosis and from this it showed that they all had poor prognosis. This advanced stage of the disease at presentation is a direct result of late presentation as already outlined. The reason for late presentation could be that early symptoms of ovarian cancer are non specific and so there were no pathognomonic clinical features[2,3,17].

In this review, cyto-reductive surgery or debulking was the commonest surgical procedure performed at laparatomy. The reason for this finding could be that majority of the patients presented late. The aim of the surgery as explained by Gabra[2] is to macroscopically debulk the tumour to make chemotherapy more effective. This was true of the report in Benin[12] where the majority of the patients had cyto-reductive surgery as the first line of treatment while more than 85% of patients had adjuvant chemotherapy. In our study, more than 90% of patients that had surgery received adjuvant chemotherapy comprising of Cisplatin, adriamycin and cyclophosphamide. This was given on a 3 weekly courses and a minimum of 6 courses. In our centre, adjuvant chemotherapy applied to all patients.

In this study, only one (3.7%) patient received neo-adjuvant chemotherapy. This patient was not operated upon because she was classed as ASA class 4 following anaesthetic review. The neo adjuvant chemotherapy would have made the delayed primary operation much easier[2].

The commonest histological type of ovarian cancer in this study was serous cyst-adenocarcinoma, accounting for 33.3% followed by mucinous cyst-adenocarcinoma (25.0%). This agrees with the studies in various regions in Nigeria[11,12,14] and with the literature where the majority of ovarian tumours were of epithelial origin[2,3,17]. Like in our study, granulosa cell tumour, endodermal sinus tumour and clear cell tumour were also reported in a study in Kano, Nigeria[14].

In this study, more than 50% of the patients that had surgery were lost to follow up. The reason for this could not be explained. It could be probably that some of them died at home from the effect of the disease because most presented with advanced disease or from the side effect of the chemotherapy. It could also be that they could not continue spending money on chemotherapy since most people believe that diagnosis of cancer was synonymous to death sentence. This could also explain why 32.0% of the patient received less than 6 courses of the chemotherapy.

The case fatality of the patients that were not lost to follow up was 75%. This figure was quite high. The patients presented late and treatment could be efficatious at this stage[2]. This further buttresses the fact that more women die from ovarian cancer than from the carcinoma of the cervix and the body of the uterus combined[10]. This finding agrees with findings at Ibadan and Enugu, Nigeria[18].

In conclusion, the prevalence of ovarian cancer was high in Nnewi and environs. The majority of the patients presented late and the mortality was high despite multimodal

therapy. This calls for screening programmes and awareness campaign in our communities. Is parity associated with ovarian cancer? A study is needed in this area. More importantly, there is need for improved social welfare package for patients with cancers in our environment to ensure that treatments are available at minimal rate. The social health workers should be encouraged to institute an effective follow up of cancer patients since many of them do not come back to hospital after diagnosis.

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