

# A Ten-Year Review of Ovarian Cancer in Enugu, South East Nigeria

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## ABSTRACT

**Objective:** To review the pattern and management of ovarian cancer over a ten-year period at the University of Nigeria Teaching Hospital, Enugu.

**Methods:** A retrospective review of cases of histologically diagnosed primary ovarian cancers from January 1, 2000 to December 31, 2009.

**Results:** Out of 20,227 gynaecological admissions during the study period, 200 cases of primary gynaecological cancers were involved. Ovarian cancer constituted 25.0% of all gynaecological malignancies giving an incidence rate of 1 per 405 gynaecological admissions per year. The mean age of cases at presentation was  $45.4 \pm 17.1$  years. Epithelial ovarian cancer constituted 68.0% of ovarian cancer. Approximately 60.0% of women who had epithelial ovarian cancer were aged 50 years or below. Parous women constituted 72.4% of epithelial ovarian cancer out of which 38.0% were grandmultiparous women. All the cancers in pre-menarcheal girls were germ cell tumours. Most of the cases had surgery and adjuvant chemotherapy. However, most patients (68.0%) had only one or two courses of cisplatin based combination chemotherapy only to abandon further treatment.

**Conclusion:** This study supports an emerging pattern of early onset of, and substantial involvement of multiparous women in, epithelial ovarian cancer among patients treated at the study centre. The management challenge posed by the pattern of presentation of a majority of cases is compounded by a trend towards abandonment of chemotherapy by most patients.

**Key Words:** Review, Ovarian cancer, Enugu.

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## INTRODUCTION

Ovarian cancer is the fourth most common cause of cancer deaths worldwide<sup>1</sup> and also the commonest cause of death among all gynaecological cancers.<sup>2,3</sup> The

very high case-fatality rate for ovarian cancer is partly because the condition presents with vague non-specific symptoms usually in advanced stages of the disease.<sup>3</sup> Previous studies done in Nigeria gave the incidence of ovarian cancer as 7-22% of all gynaecological malignancies.<sup>4-8</sup> Epithelial ovarian cancer is the commonest type of ovarian cancer and is known to be a disease of postmenopausal women<sup>9</sup>.

Management of ovarian cancer requires a multi disciplinary approach involving the gynaecological oncology surgeon, general surgeon, medical oncologist, oncology nurse, clinical psychologist, hospice care givers and pathologist. Most treatment regimens involve surgical staging; maximal debulking surgery followed by adjuvant chemotherapy using platinum based combination therapy commonly Carboplatin and paclitaxel. Radiotherapy is most beneficial for germ cell tumours.

It is believed that there has been a steady increase in the incidence of ovarian cancer worldwide. Besides, recent global reports by the International Federation of Gynaecology and Obstetrics (FIGO) on the results of treatment in gynaecological cancer noted that the highest incidence of ovarian cancer was moving towards a younger age group although the majority of the patients with epithelial cancer were more than 50 years in age.<sup>10</sup> The reasons for the increased occurrence of ovarian cancer in younger women are controversial.<sup>11</sup> Risk factors mentioned include increase in ovulation induction in assisted reproduction techniques, nulliparity and late onset of childbearing due to increasing number of females in the workforce.<sup>9</sup>

Among the Ibos of South East Nigeria, there has been an increase in the number of women in the workforce made possible by increased female education. Although assisted reproductive technology is not widespread in this area, ovulation inducing drugs are often taken by patients who have difficulty with conception, many times on self-prescription.

It has not been seen if the pattern of increased ovarian cancer among young women applies to this part of Nigeria. This study therefore reviews the pattern of ovarian cancer seen over the last ten years at a major referral hospital in South East Nigeria.

## METHODS

This is a retrospective study conducted at the University of Nigeria Teaching Hospital (UNTH), Enugu covering a ten-year period from January 1, 2000 to December 31,

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2009. The study centre is a major tertiary hospital in South East Nigeria that offers oncology services to inhabitants of Enugu State and neighbouring states.

Cases of histologically diagnosed primary ovarian cancer were identified from the records of the UNTH Cancer Registry and the Histopathology Department of the hospital. The case notes of identified cases were retrieved from the Medical Records Department and data relating to age, parity, clinical presentation and treatment were extracted and coded into Statistical Software for Social Sciences (SPSS) Version 15.0 for Windows for analysis. The incidence of ovarian cancer, the mean ages at presentation of cases, the proportions of cases presenting below the age of 50 and proportions of cases based on parity, educational status, occupational group and menstrual status were assessed. Statistical analysis was by descriptive univariate statistics.

Ethical clearance for the study was obtained from the Research Ethics Committee of the University of Nigeria Teaching Hospital.

## RESULTS

The total number of histologically diagnosed cases of primary ovarian malignancy obtained over a ten year period was 54. The records of 50 cases of primary ovarian cancer could be retrieved giving a recovery rate of 92.6%. The cases whose records were available were used for analysis.

Ovarian cancer constituted 25% of a total of 200 gynaecological malignancies seen over the study period. The total number of gynaecological admissions during this period was 20,227. The incidence rate of ovarian cancer was about 1 per 405 gynaecological admissions per year.

**Table I** shows the prevalence of ovarian cancer based on the characteristics of the patients. The overall mean age of the cases was  $45.4 \pm 17.1$ . The mean ages at

presentation of the different types of ovarian cancer were epithelial tumours  $50.3 \pm 13.2$  years, sex cord stromal tumours  $53.1 \pm 13.3$  years, and germ cell tumours  $18.5 \pm 8.3$  years.

Epithelial ovarian cancer constituted 34 (68.0%) of ovarian cancers. Eighteen (56.0%) of epithelial ovarian cancer occurred at 50 years or below. Parous women constituted 72.4% of epithelial ovarian cancer with 38.0% occurring in grandmultiparous women. Approximately 35.0% of epithelial ovarian cancers occurred in premenopausal women.

Table II shows clinico-pathologic features of ovarian cancer seen during the study period. Most patients presented in the late stage of the disease. All the cancers in pre-menarcheal girls were germ cell tumors.

Seventy five percent of the patients had surgical staging, biopsy and maximal debulking surgery involving total abdominal hysterectomy, bilateral salpingo-oophorectomy and different degrees of omentectomy, appendectomy, bowel resection and adhesiolysis. One patient, a 9-year old girl had excision of tubo-ovarian mass. Four of the patients were referred to the study centre for chemotherapy after surgery had been done in private clinics and histology confirmed ovarian cancer.

Most of the patients 42 (84.0%) had chemotherapy involving Cis-platinum based combination chemotherapy. The combinations were of a platinum agent (Cisplatin or Carboplatin) and paclitaxel, cyclophosphamide or Doxorubicin. However, most, 34 (68.0%) of the patients had one or two courses of chemotherapy only and abandoned further chemotherapy. Only 6 (12.0%) of cases had 6 courses, while 2 (4.0%) had four courses.

**Table I: Showing the Distribution of Cases of Ovarian Cancer according to Socio-demographic Characteristics as seen at the University of Nigeria Teaching Hospital, Enugu from 2000-2009.**

<b>Characteristic</b>	<b>Ovarian Cancer n=50</b>	<b>%</b>
<b>Age (years)</b>		
10-20	5	10.0
21-30	9	18.0
31-40	6	12.0
41-50	10	20.0
51-60	8	16.0
61-70	9	18.0
71-80	3	6.0
<b>Parity</b>		
0	17	34.0
1-4	15	30.0
≤ 5	18	36.0
<b>Marital status</b>		
Single	9	18.0
Married	31	62.0
Widowed	10	20.0
<b>Religion</b>		
Christianity	49	98.0
Islam	0	0.0
Traditional religion	1	2.0
<b>Christian Denomination</b>		
Roman Catholic	24	48.0
Anglican	5	10.0
Pentecostal	21	42.0
Others	0	0.0
<b>Ethnic group</b>		
Igbo	49	98.0
Non-Igbo	1	2.0
<b>Occupation</b>		
Unemployed	8	16.0
Farmer	14	28.0
Civil servant	3	6.0
Trader	9	18.0
Teacher	4	8.0
Nurse	2	4.0
Student	10	20.0
<b>Menstrual group</b>		
Premenopausal	24	48.0
Post-menopausal	26	52.0

**Table II: Showing Clinico-Pathologic features of Ovarian Cancer seen at the UNTH, Enugu from 2000-2009**

Clinical/pathological Feature		Number of cases	%
Presenting symptoms	Abdominal mass	32	64.0
	Abdominal pains and discomfort	26	52.0
	Weight loss	6	12.0
Stage of disease at presentation	1	0	0.0
	2	4	8.0
	3	32	64.0
	4	14	28.0
<b>Histological type</b>	<b>Subtype</b>		
Epithelial Tumours	1.Serous cystadenocarcinoma	18	36.0
	2.Mucinous cystadenocarcinoma	12	24.0
	3.Poorly differentiated adenocarcinoma	4	8.0
Sex cord stromal tumours	1.Granulosa cell tumour	4	8.0
	2.Poorly differentiated sertoli leydig cell tumour	2	4.0
	3.Invasive alveolar rhabdomyosarcoma	2	4.0
Germ cell tumours	1.Malignant teratoma	4	8.0
	2.Dysgerminoma	2	4.0
	3.Endodermal sinus tumour	2	4.0

**DISCUSSION**

Ovarian cancer contributed a quarter of all gynaecological malignancies in this study and was the second commonest gynaecological malignancy. In terms of proportions of gynaecological malignancies, the 25% found in this study is higher than in previous studies in Nigeria: 21.5% in Uyo in South-South Nigeria; 16.3% in Maiduguri in North East Nigeria; 9.8% in Ibadan South West Nigeria; 11.9% in Benin South South Nigeria; 8.4% in Zaria North Central Nigeria.<sup>4-7</sup> However, in terms of absolute numbers, the occurrences of ovarian cancer in decade-long studies are fairly similar ranging between 43 to 62 cases in ten years. Differences in relative proportions of ovarian cancer across the different regions in Nigeria in the last decade may therefore be due to the differences in the total number of other gynaecological malignancies rather than a significant absolute difference in the occurrence of ovarian cancer.

However, compared to a study done in this centre covering the period 1971-1976, 50 cases representing 25% of gynaecological cancers in the present study appear to be a substantial increase over the 6 cases seen in 6 years representing 7.3% of gynaecological cancers.<sup>8</sup> This study therefore supports the pattern of increasing report of ovarian cancer in the study centre.<sup>10</sup> Considering that most cases of cancer would end up in the teaching hospital because of lack of expertise and facilities elsewhere in the state, this may represent an increasing incidence of ovarian cancer in the study.

In terms of the pattern of age of occurrence, the finding in this study that most cases of epithelial ovarian cancer occurred at 50 years or below is different from what has been known about epithelial ovarian cancer. Epithelial Ovarian cancer has been known as a disease of the sixth and seventh decades of life.<sup>9</sup> In a recent report by FIGO, most cases of ovarian cancer were above 50 years.<sup>10</sup> In a previous study at this centre three decades ago, the

peak age of incidence was in the sixth decade of life. The findings in this study therefore indicate a shift to an earlier occurrence in this population. This is similar to results of a study done in Ghana where the fifth decade of life was the peak age of presentation.<sup>12</sup>

The reasons for increased occurrence of epithelial ovarian cancer in younger women in the population were not addressed by this study. The finding is nonetheless worrisome. Further studies are therefore required to determine the possible factors responsible for the observed trend. The possible influences of genetic factors and lifestyle in the aetiology of ovarian cancer in this environment need to be explored. Because of the rarity of the disease, institutional protocols mandating the documentation of data relating to possible risk factors for every case of ovarian cancer would facilitate future studies.

Nulliparity has been shown to be a strong risk factor for epithelial ovarian cancer in previous studies, but in contrast, this study shows a high incidence of ovarian cancer among parous women with a substantial contribution from grandmultiparous women. Less than a third of cases of epithelial ovarian cancer occurred in the nullipara. In a previous study from this centre, all cases of ovarian cancer occurred in parous women with grandmultipara constituting 50%.<sup>8</sup> This suggests that in this environment nulliparity may not be a strong factor in the aetiology of epithelial ovarian cancer.

Despite the drawbacks of small sample size in this study, we conclude that the study supports an emerging pattern of increasing incidence of ovarian cancer. It also suggests earlier onset of, and substantial involvement of multiparous women in, epithelial ovarian cancer among patients treated at the centre. More research is required to determine the possible explanation for these observed trends.

**Conflict of interest:** None was declared.

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