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RESEARCH ARTICLE OPEN ACCESS

Clinical Characteristics and Outcome of Management of Ovarian Cancer in a Tertiary Hospital

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Abstract
Objective: Cancers are currently adjudged as a hindrance to achieving a desirable life expectancy in most countries. The high mortality rate from ovarian cancer is a result of the pathology not having specific symptoms, late presentation, and lack of proper screening that results in its diagnosis in the advanced stages. The study aimed to determine the prevalence, clinical presentation, and outcome after the management of patients with ovarian cancer seen in the tertiary institution.
Methodology: It was a retrospective study. Relevant information was extracted from the case files of the patients with histologically confirmed ovarian cancer. The data obtained were analysed using Statistical Package for Social Sciences (SPSS) statistical software, version 23.
Results: Thirty-two cases of ovarian cancer were admitted during the period under review. This constituted 21.0% of gynaecological malignancies managed in the hospital during the study. The mean age of the ovarian cancer patients was 50.94±12.01 years with 56.25% of the patients being postmenopausal. The majority of the patients (62.4%) have 3 or more parous experiences with 53.1% of the patients presenting with advanced disease. Epithelial ovarian cancer was the most common histological variant. The treatment modality was surgery and chemotherapy. However, 65.7% of patients defaulted from initiating or completing chemotherapy.
Conclusion: The study revealed that patients presented in the late stage of the disease and a bulk of them did not complete the treatment. There is a need to lobby Governments to subsidize cancer treatment, especially in the area of chemotherapy treatment.

Keywords: Epithelial, Histological pattern, Ovarian cancer, Prevalence

Plain English Summary

Ovarian cancer is associated with a high mortality rate, this is because the disease does not have specific symptoms, late presentation, and lack of proper screening modalities that result in its diagnosis in the advanced stages. Thus, ovarian cancer is termed the silent killer as more than 75% of patients present in an advanced stage of the disease. This study is aimed to determine the prevalence, clinical presentation, and outcome after the management of patients with ovarian cancer seen in our environment over 5 years. The finding from the study showed that patients presented at an advanced stage and a significant number of patients did not undergo adjuvant chemotherapy probably due to the

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cost of medication. There is, however, a need to lobby Governments to help subsidize cancer treatment, especially in the area of chemotherapy treatment.

Background

Cancer is a leading cause of mortality in most parts of the world (1) and is currently adjudged as a hindrance to achieving a desirable life expectancy in most countries (1, 2, 3). Ovarian Cancer is said to be the most lethal gynaecological cancer because of its poor prognosis (4, 5).

International Federation of Gynaecology and Obstetrics (FIGO) in 2018 said there were 300,000 new cases annually also suggesting an upsurge in the number of new cases seen per year (6). Ovarian cancer is said to have the lowest survival prospects of all cancers affecting women, with five-year survival rates ranging between 30% and 50% (6, 7). The high mortality rate from ovarian cancer is a result of the pathology not having specific symptoms, late presentation, and lack of proper screening that results in its diagnosis in the advanced stages (3, 5, 7, 8). Thus, ovarian cancer is termed the silent killer as more than 75% of patients present in an advanced stage of the disease (5, 6, 9).

Approximately 90% of all ovarian cancers are epithelial tumours, the serous being the commonest, others are mucinous, endometrioid, clear cell, transitional cell, squamous cell, mixed epithelial, undifferentiated, and unclassified tumours (10).

Ovarian cancer has no known aetiology but a few related risk factors are associated with ovarian cancer, these include family history, nulliparity, late menopause, postmenopausal status, and environmental factors. However, some risk factors have been shown to have some protection. They include conditions associated with reduced ovulatory cycles such as the use of combined oral contraceptive pills and breastfeeding, others are bilateral tubal ligation and late menarche (4, 11, 12).

Surgical staging exploratory laparotomy for cytoreduction or tumour debulking remains the standard care for patients with ovarian cancer and this procedure should be performed by a gynecologic oncologist (10, 13). An independent prognostic factor for recurrence is the residual volume of disease left after surgery (10, 14). Six cycles of intravenous taxane/platinum-based adjuvant chemotherapy for high-risk stage ovarian cancer is recommended by the National Comprehensive Cancer Network (13).

Despite the increase in the prevalence of ovarian cancer and the huge burden of the disease little is known about the prevalence, pattern, and outcome of this disease in our centre.

This study aimed to determine the prevalence, clinical presentation, and outcome after the management of patients with ovarian cancer seen in our environment over five years. The result obtained may assist in recommending how screening, diagnosis, and treatment of ovarian cancer may be informed.

Materials and Methods

This is a retrospective five-year study (2016-2020), carried out at the Department of Obstetrics and Gynaecology, Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria. The names and hospital numbers of patients with histologically confirmed ovarian cancers from January 2016 to December 2020, were retrieved from the register at the Department of Pathology. The case notes of all these patients were retrieved from the Medical Records Department of the hospital. The total number of gynaecological malignancies seen in the hospital as well as the total number of gynaecological admissions during the study period were also extracted from the medical records. Information on age, parity, clinical presentation, stage at presentation, histopathological types, treatment options, and outcomes were extracted from the case files of the patients with histologically confirmed ovarian cancer.

Statistical analysis

The data obtained were analysed using Statistical Package for Social Sciences (SPSS) statistical software, version 23. Absolute numbers and simple percentages were used to describe categorical variables. Similarly, quantitative variables were described using measures of central tendency (mean, median) and measures of dispersion (standard deviation) as appropriate.

Results

During the 5 years under review (2016-2020), there were a total of 1811 gynaecological admissions and a total of 219 cases of gynaecological malignancies. There were 46 patients admitted with a diagnosis of ovarian malignancy during these periods, however, case notes of 39 of these patients were successfully retrieved for analysis from the Medical Records Department of the hospital for analysis.

These 46 cases constituted 2.5% of gynaecological admissions and 21.0% of the gynaecological malignancies managed. The mean age was 51.15±11.25 years with a range of 22 to 75 years.

Table 1; Socio-demographic characteristics of the patients are seen in Table 1. The modal age group was 40-49 years. Though nulliparity was

the modal parity (25.6%) more than 50% of the patients had parity ≥3. The majority (61.5%) of the patients were post-menopausal (Figure 1).

Table 1: Sociodemographic characteristics of study patients

Characteristics	Frequency (n)	Percentage (%)
Age (years)		
≤29	1	2.6
30-39	3	7.7
40-49	15	38.4
50-59	13	33.3
60-69	4	10.3
≥70	3	7.7
Parity		
0	10	25.6
1-2	9	23.1
3-4	9	23.1
5-6	6	15.4
≥7	5	12.8
Educational status		
Primary	12	30.8
Secondary	15	38.5
NCE	3	7.7
HND/BSC	5	12.3
Postgraduate	4	10.3

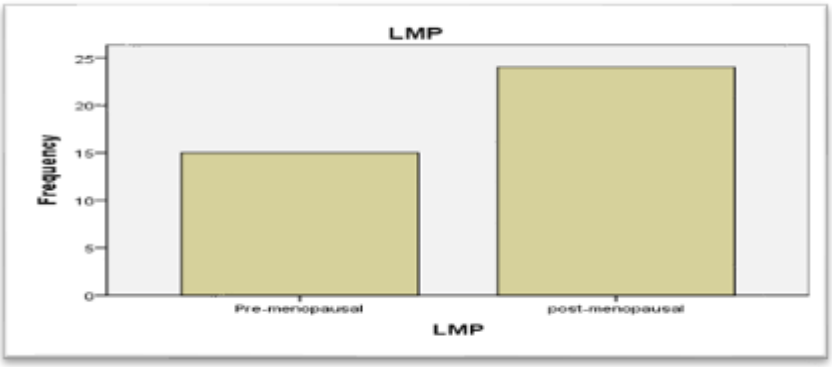

Figure 1: Menopausal State

Table 2 illustrates the symptoms at presentation. The three commonest symptoms were abdominal swelling (100%), abdominal pain (58.9%), and weight loss (48.7%). Abdominal distension, abdominal mass, and ascites were the commonest clinical signs, occurring in the majority of the patients. Most of them presented with 2 or more clinical features.

Table 2: Clinical presentations

Clinical presentations	Frequency (n)	Percentage (%)
Symptoms		
Abdominal swelling	39	100.0
Abdominal pain	23	58.9
Weight loss	19	50
Early satiety	18	48.7
Anorexia	15	38.5
Constipation	10	25.6
Postmenopausal bleeding	6	15.4
Breathlessness	6	15.4
Urinary frequency	4	10.3
Leg swelling	7	17.9
Clinical findings		

Abdominal distension	39	100
Abdominal mass	39	100
Abdominal tenderness	26	66.6
Ascites	30	76.9
Cachexia	14	35.9
Pallor	15	38.5
Pedal oedema	9	23.1
Hepatomegaly	2	5.1
Jaundice	1	2.6

Table 3: The majority of the patients (59.0%) presented at advanced Stages III and IV constituting 38.5% and 20.5%, respectively. Serous cystadenocarcinoma was the most common histological variant of ovarian malignancy seen, accounting for 43.6% of cases. All the patients (100%) had surgery (staging laparotomy) and 35.9% of those who had surgery had 6 complete courses of chemotherapy comprising of carboplatin/paclitaxel combination.

Table 3: Stage of the disease at presentation, histological type of the tumour, and treatment modalities

Stage of disease/histology	Frequency (n)	Percentage (%)
Stage		
I	12	30.7
II	4	10.3
III	15	38.5
IV	8	20.5
Histological type		
serous cystadenocarcinoma	17	43.6
Papillary	3	7.7
mucinous	6	15.4
Endometroid	2	5.1
Brenner	1	2.6
Clear cell	2	5.1
Granulosa	5	12.8
Yolk Sac	2	5.1
Immature Teratoma	1	2.6
Treatment modalities		
Surgery alone	25	64.1
Surgery and complete course of chemotherapy	14	35.9

Table 4 revealed patients' default rate in the study to be 43.6%. Six (15.38%) patients died within five years of treatment and were mostly in advanced Stages of ovarian cancer (III and IV).

Table 4: Overall stage-based outcome per stage

Outcome	I	II	III	IV	Total (%)
Alive	7	1	6	2	16 (41.0)
Dead	1	0	3	2	6 (16.7)
Lost to follow up	4	3	6	4	17 (43.6)
Total	12	4	15	8	39 (100)

Discussion

Ovarian cancer is mostly diagnosed at an advanced stage resulting in a poor prognosis and making this cancer the most lethal gynaecological malignancy (4). The result of this study is a true reflection of the above statement as evidenced by almost 60% of the patients presenting in an advanced stage of the disease. Ovarian cancer in this study accounted for 21.0% of all gynaecological cancers. This finding is similar to reports from 2 different centres in Nigeria, Abuja (22.1%) and Owerri (17.5%) but lower than the report of a previous study at this centre (35.7%) (15, 16, 17).

The mean age of 51.2±11.3 years and a modal age of 40 – 59 years accounting for 71.7% of the population was seen in this study. In a report from FIGO, ovarian cancer was seen more commonly among the age group of 60–64 years in developed countries, and the median age was about a decade earlier in low-income countries (6), which is consistent with what was found in

this study. Other studies having similar mean ages include that which was carried out in Abuja (50.2±8.5 years), Kano (50.5 ± 13.5 years), and Kenya 49.8±15.7 years (11, 18, 19).

Nulliparity has been known to be a strong risk factor for ovarian cancer (6, 20), however, findings from this study showed a high incidence of ovarian cancer among parous women with a substantial contribution from multiparous women with a median parity (IQR) of 3(0-5). This pattern was consistent with what was seen in another study (20). Perhaps, this finding may be due to a small sample size, or possibly nulliparity may not be a strong factor in this environment (20). In a population-based cohort study in Finland looking at grand multiparous women, the study reported that the risk of ovarian cancer is similar after three to five pregnancies and that there is no further protection against ovarian cancer in women with a parity of five or more. However, the emphasis should be based on the timing of the first pregnancy (21).

The top three symptoms among patients from our study were abdominal swelling, abdominal pain, and weight loss. These are features of the advanced disease and similar presentations were seen in other studies (11, 12, 20). Patients with ovarian cancer hardly seek medical assistance early because symptoms are usually non-specific and will only present when the disease has become obvious and unbearable. This is further compounded by no specific screening methods (18, 22).

The most common histological type of ovarian cancer from this study was epithelial cancer (76.5%). This is similar to the pattern seen in other studies (18, 23, 24).

The standard management of ovarian cancer is cytoreductive surgery followed by taxane / platinum-based chemotherapy. All the patients had surgery in our study, however, most defaulted after surgery with 35.9% of the patients completing the course of chemotherapy. High default rates were also seen in studies carried out in Ibadan and Lagos where 23.8% and 11.1% had adjuvant chemotherapy (22, 25). However, an Ethiopia study recorded higher compliance (59%) to chemotherapy (7). The trend of not commencing or abandoning chemotherapy may be due to financial constraints arising from the expensive cost of care and chemotherapy medication. The absence of health insurance during the period of the study meant that patients paid from pocket (7, 19, 20).

Limitations to the study

The poor medical record-keeping system currently being used in the hospital affected the accurate data collection of patients used for the study as some data could not be retrieved.

Conclusion

Ovarian cancer, one of the major gynaecological cancers, kills many women around the world because of no specific screening protocol and nonspecific symptoms hence patients present in an advanced stage of the disease, and the high cost of chemotherapy which might have accounted for the patients not coming for post-surgery chemotherapy.

There is, however, a need to lobby Governments to subsidize cancer treatment, especially in the area of chemotherapy treatment. There is also a need to raise awareness of carrying out prophylactic oophorectomy for patients undergoing Total abdominal hysterectomy for benign conditions after the age of 40 years.

List of Abbreviations

FIGO: International Federation of Gynaecology and Obstetrics

Declarations

Ethical consideration

The study conforms to the provisions of the Declaration of Helsinki in 1995 (as revised in Brazil 2013). Written permission was obtained from the Director of Clinical Sciences, Olabisi Onabanjo University Teaching Hospital to assess the medical records of patients. Data extraction was done in strict compliance with confidentiality.

Consent for publication

All the authors gave consent for the publication of the work under the Creative Commons Attribution-Non-Commercial 4.0 license.

Availability of data and materials

The data and materials associated with this research will be made available by the corresponding author upon reasonable request.

Competing interests

There are no competing interests in this research work from the authors.

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No fund was generated from any external organization.

Authors' contributions

All the authors actively participated in the design and planning of the research work, data collection and analysis, as well as the writing of the report.

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Reference

1. Momenimovahed Z, Ghoncheh M, Pakzad R, Hasanpour H, Salehiniya H. Incidence and mortality of uterine cancer and relationship with Human Development Index in the world. *Cukurova Med J*. 2017;42(2):233–233. https://doi.org/10.17826/cutf.322865
2. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin*. 2018;68(6):394–424. https://doi.org/10.3322/caac.21492
3. Momenimovahed Z, Tiznobaik A, Taheri S, Salehiniya H. Ovarian cancer in the world: Epidemiology and risk factors. *Int J Womens Health*. 2019;11:28799. https://doi.org/10.2147/IJWH.S197604
4. Zhang Y, Luo G, Li M, Guo P, Xiao Y, Ji H, et al. Global patterns and trends in ovarian cancer incidence: Age, period and birth cohort analysis. *BMC Cancer*. 2019;19(1):1–14. https://doi.org/10.1186/s12885-019-6139-6
5. Caan BJ, Thomson CA. Breast and ovarian cancer. *Optim Women's Heal through Nutr.* 2007;229–63. https://doi.org/10.1201/9781420043013.ch10
6. Berek JS, Kehoe ST, Kumar L, Friedlander M. Cancer of the ovary, fallopian tube, and peritoneum. *Int J Gynecol Obstet*. 2018;143:59–78. https://doi.org/10.1002/ijgo.12614
7. Piszczan S, Desalegn D, Petros H, Gurmu M, Kroeber ES, Addissie A, et al. Clinical Characteristics and Survival of Patients with Malignant Ovarian Tumors in Addis Ababa, Ethiopia. *Oncologist*. 2019;24(6). https://doi.org/10.1634/theoncologist.2018-0869
8. Badgwell D, Bast RC. Early detection of ovarian cancer. *Dis Markers.* 2007;23(5–6):397–410. https://doi.org/10.1155/2007/309382
9. Oguntayo AO. Epidemiology of ovarian cancers in Zaria, Northern Nigeria: a 10-year study. *Int J Wom Health*. 2017;855–60. https://doi.org/10.2147/IJWH.S130340
10. Coburn SB, Bray F, Sherman ME, Trabert B. International patterns and trends in ovarian cancer incidence, overall and by histologic subtype. *Int J Cancer*. 2017;140(11):2451–60. https://doi.org/10.1002/ijc.30676
11. Ayogu ME, Abdullahi HI, Eze IO. Incidence, characteristics, pattern, and management of ovarian cancer in Abuja, Nigeria. Int J Res Med Sci. 2020;8(9):3187. https://doi.org/10.18203/2320-6012.ijrms20203665
12. Okunade K, Okunola H, Okunowo A, Anorlu R. A five-year review of ovarian cancer at a tertiary institution in Lagos, South-West, Nigeria. *Niger J Gen Pract.* 2016;14(2):23. https://doi.org/10.4103/1118-4647.187901
13. Gao Y, Li Y, Zhang C, Han J, Liang H, Zhang K, et al. Evaluating the benefits of neoadjuvant chemotherapy for advanced epithelial ovarian cancer: a retrospective study. *J Ovarian Res*. 2019;12(1):85. https://doi.org/10.1186/s13048-019-0562-9
14. Okunade KS, Adetuyi IE, Adenekan M, Ohazurike E, Anorlu RI. Risk predictors of early recurrence in women with epithelial ovarian cancer in Lagos, Nigeria. *Pan Afr Med J*. 2020;36(272):1–9. https://doi.org/10.11604/pamj.2020.36.272.17827
15. Osinachi IF, Adewole N, Isah AD, Abdullahi HI, Agida ET. Pattern of gynaecological malignancies in a Nigerian tertiary hospital. *Afr. J. Med. Health Sci*. 2020;19:29–35.
16. Nnadi IG, Egejuru RO, Ododo NA. Malignant Ovarian Tumours in South-East Nigeria. *J Nat Sci Res*. 2018;8(14):17–21.
17. Adefuye PO, Adefuye BO, Oluwole AA. Female genital tract cancers in Sagamu, southwest, Nigeria. *East Afr Med J*. 2014;91(11):398–406.
18. Umar UA, Yakasai IA, Adamou N. Ovarian cancer: Pattern of care in a tertiary health center in sub-Saharan Africa. *Trop J Obstet Gynaecol*. 2016; 33(3):288-291. https://doi.org/10.4103/TJOG.TJOG_51_16
19. Cheserem EJ, Kihara A, Kosgei RJ, Gathara D, Gichuhi S. Ovarian cancer in Kenyatta National Hospital in Kenya: Characteristics and management. *Open Journal of Obstetrics and Gynecology*. 2013;2013:165–71. https://doi.org/10.4236/ojog.2013.31A031
20. Iyoke C, Ugwu G, Ezugwu E, Onah N, Ugwu O, Okafor O. Incidence, pattern and management of ovarian cancer at a tertiary medical center in Enugu, South East

Nigeria. *Ann Med Health Sci Res*. 2013;3(3):417. https://doi.org/10.4103/2141-9248.117947
21. Hinkula M, Pukkala E, Kyyrönen P, Kauppila A. Incidence of ovarian cancer of grand multiparous women--a population-based study in Finland. *Gynecol Oncol*. 2006;103(1):207-11. doi: 10.1016/j.ygyno.2006.02.025. https://doi.org/10.1016/j.ygyno.2006.02.025
22. Rabiu KA, Akinola OI, Adewunmi AA, Fabamwo AO, Adedeji MO, Popoola AO. Delays in presentation and management of ovarian cancer in Lagos, Nigeria. *J Obstet Gynaecol* 2013:305–8. https://doi.org/10.3109/01443615.2012.753417
23. Abuidris DO, Weng HY, Elhaj AM, Eltayeb EA. Incidence and survival rates of ovarian cancer in low-income women in Sudan. *Mol Clin Oncol*. 2016;5(6)823–828. https://doi.org/10.3892/mco.2016.1068
24. Forae G, Aligbe J. Ovarian tumors among Nigerian females: A private practice experience in Benin City, Nigeria. *Adv Biomed Res*. 2016;5(1):61. https://doi.org/10.4103/2277-9175.179183
25. Odukogbe AA, Adebamowo CA, Ola B, Olayemi O, Oladokun A. Ovarian cancer in Ibadan: characteristics and management. *J Obstet Gynaecol*. 2004;24(3):294–7. https://doi.org/10.1080/01443610410001660904