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Short Commentary

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Ovarian Cancer: Overview Related to Affected Age, Risk Factors, Histological Types, Staging and Symptoms in Sudan

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Abstract

The most common type of female reproductive cancer that leads to death is ovarian cancer. Early detection of ovarian cancer is challenging due to the lack of distinct symptoms and inadequate screening techniques, leading to a diagnosis of advanced-stage disease in around two thirds of patients. The patients in this study ranged in age from 46.5 to 27.5 years. Ninety percent (90%) of the women in this cohort were between the ages of 30 and 70. Between the ages of 30 and 70, the frequency of ovarian cancer is modest (p=0.5), at 4.5% and 1.7%, respectively. The age group over 60 is the most prevalent. In the previous six months, symptoms of abdominal discomfort, pelvic pain, and irregular bleeding were experienced by more than 40% (50/112, 44.6%) of the patients. 38/112 (33.9%) of the participants reported having symptoms for over a year, while 6.4% (6/112) and 16.3% (16/112) reported having problems for two and three years, respectively. Eighty percent of the patients (89/112) were childless. A fifth (20.5%, 23/112) were married and had children, whereas a third (44/112, 39.3%) were unmarried, 40.2% (45/112) were married but had no children. As a result, the patients were mostly childless and single women (79.5%).A small number of individuals (6/112, 5.4%) also had endometrial, colon, lung, breast, or brain malignancies concurrently with their ovarian cancer, with breast and colon cancers being the most typical. The majority of patients in the research cohort (81.1%, 91/112) had serous adenocarcinoma of the ovaries. More than half of the patients had advanced stages, with stages III and IV occurring in 31.3% and 26.8% of patients, respectively. A minority (3.6%) of patients were diagnosed with the early stages, or stage I, whereas a fifth (19.6%) of patients came with stage II. With 1.8% at stage II, 4.5% at stage III, and 3.6% at stage IV, mucinous types were observed in 11 patients (11/112, 9.9%). 10.7% (6/112) of the patients had the endometroid type, with stage I patients having 3.6% and stage III patients having 1.8%. In the minority, germinoma (1/112, 0.8%) and poorly differentiated carcinomas (3/112, 2.7%) were found.

Keywords: Ovarian cancer; Sudan; Serous adenocarcinoma; Abdominal discomfort.

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Introduction

The most common cause of death from female reproductive cancers is ovarian cancer. In addition to the lack of early-stage illness symptoms, there also are no reliable screening techniques, which leaves two thirds of patients with advanced-stage ovarian cancer when they are diagnosed. The development of efficient screening tests and their implementation in a clinical setting are of utmost importance to improve the prognosis of ovarian cancer by prompt detection because the 5-year survival rate is up to 90% in patients with early-stage disease while it is less than 20% in those with advanced-stage disease [1]. A deadly form of gynecologic cancer that develops from an ovarian tumor is called ovarian cancer. Initially, symptoms are typically subtle and may include bloating, pelvic pain, and difficulty eating, and excessive urination, and they can be mistaken for other conditions. Ovarian cancers are categorized as «epithelial» and are thought to develop from the ovary's surface in the majority (>90%) of cases. However, some data point to the possibility that certain ovarian malignancies may potentially originate in the fallopian tube. These ovarian cancer-mimicking fallopian cancer cells are believed to exist. Some varieties (germ cell cancers) arise from supporting cells or from egg cells. Gynecologic cancers, including ovarian cancers, fall within this category [2]. According to Globocan http://globocan.iarc.fr/Default.aspx), ovarian cancer had 238,619 incident cases in 2012, making it the seventh most prevalent cancer overall and the leading cause of death from gynecological cancers. It is listed as the second most prevalent gynecological cancer in developing nations with 17,755 incident cases in 2012 and the fourth most prevalent cancer in women overall. Basically, industrialized nations have the highest ovarian cancer incidence rates. North America and Western Europe had the highest incidence rates (10.7 per 100,000 person-years and 13.3 per 100,000 person-years, respectively), whereas North Africa has the lowest incidence rates (2.6 per 100,000 person-years). However, in a hospital-based data set from the National Cancer Institute, Gezira University, Central Sudan, and Radiation Isotopes Center in Khartoum, collected between 2000 and 2006, ovarian cancer accounted for 6.8% (949) of all recorded cancers (n=226,652) and was ranked the sixth most common cancer for both genders. The incidence rate of ovarian cancer in the entire Sudan has not yet been determined. In addition, ovarian cancer ranked fourth among all female cancers in a more recent data set (2009-2010) from the National Cancer Registry for the Khartoum State alone, with an estimated incidence rate of 188 per 100,000 people, a gender-specific rate of 8.0 per 100,000 people, and an age-standardized rate (ASR) of 7.0 per 100,000 people. Due to the lack of death certificates, the survival rate for ovarian cancer in Sudan has also never been reported, and the majority of patients who presented with advanced-stage disease did not receive complete examinations or symptomatic treatment [3]. The precise cause of ovarian cancer is still mostly unknown. There are various factors that seem to influence the likelihood of getting ovarian cancer [4]. The risk is higher for older women who have never given birth and for those with first- or second-degree relatives who have the illness. Mutations in particular genes, most notably the BRCA1 and BRCA2 genes of hereditary nonpolyposis colorectal cancer, can result in hereditary forms of ovarian cancer. Women who are infertile, suffer from endometriosis, or use postmenopausal estrogen replacement treatment are at higher risk [5]. The epithelial surface of the ovary accounts for around 90% of ovarian neoplasms, with the remaining 10% coming from germ cells or stromal cells. Serous (30-70%), endometrioid (10-20%), mucinous (5-20%), clear cell (3-10%), and undifferentiated (1%), are the different categories for epithelial neoplasms. For each of these subtypes, the 5-year survival rates are 20-35%, 40-63%, 40-69%, 35-50%, and 11-29%, respectively [6,7,8]. The ovarian, fallopian tube, and peritoneum cancer classifications are combined in the updated, revised FIGO staging system. It is founded on data gathered from exploratory surgery [9]. Histological grading, which is connected with prognosis, is used to further subclassify epithelial malignancies of the ovary and fallopian tube. This approach does not grade non-epithelial cancers. There are two grading schemes used. According to an architecture with a one-step upgrade, if there is substantial nuclear atypia, nonserous carcinomas (most endometrioid and mucinous) are graded in the same way as uterine cancers. GX: Grade not measurable G1 is a well-differentiated group, followed by G2 and G3, which are moderately and poorly differentiated [9].

Materials and methods

Ethical considerations

The study protocol was reviewed and passed by the Ethics Committee of the Institute of Endemic Diseases, University of Khartoum. Written informed consent was obtained from enrolled patients and apparently healthy volunteers.

Study design, sites, and duration

A prospective, hospital-based was conducted over two years (January 2014-December 2015) at tertiary-referred hospitals.

Study population

One hundred and twelve women with histologically-confirmed ovarian cancers (cases).

Statistical analysis

The collected data was analyzed using SPSS version 16; frequencies, t-test, correlation and significance for patients data**.** P value of <0.05 was considered statistically significant.

Results

The average patient age, according to demographic statistics, was 46.5 27.5 years. 90% of the women in this cohort ranged in age from 30 to 70. (figure1). Ovarian cancer is not prevalent (p=0.5) in women under the age of 30 (frequency=4.5%) or over the age of 70 (frequency=1.7%), although the most common age group is over 60. (Table1). In the previous six months, more than 40% (50/112, 44.6%) of the patients experienced symptoms of abdominal discomfort, pelvic pain, and irregular bleeding (Table 2). 38/112 (33.9%) of the patients had symptoms for more than a year, compared to 6.4% for two years and 14.3% for three years, respectively (Table 3). Eighty percent of the patients (89/112) were childless. A fifth (20.5%, 23/112) were married and had children, whereas a third (44/112, 39.3%) were unmarried, 4and 0.2% (45/112) were married but had no children. Thus, women without children and single women made up the bulk of patients [79.5%] (Table 4). Breast and colon cancers were the most frequent concomitant cancers, whereas endometrial, colon, lung, breast, and brain cancers were the least prevalent (6/112, 5.4%)

among the patients (Table 5). The majority of patients in the research cohort (81.1%, 91/112) had serous adenocarcinoma of the ovaries. More than half of the patients had advanced stages, with stages III and IV present in 31.3% and 26.8% of patients, respectively. A minority (3.6%) of patients were diagnosed with the early stages, or stage I, whereas a fifth (19.6%) of patients came with stage II. With 1.8% at stage II, 4.5% at stage III, and 3.6% at stage IV, mucinous types were observed in 11 patients (11/112, 9.9%). 10.7% (6/112) of the patients had the endometroid type, with stage I patients having 3.6% and stage III patients having 1.8%. In the minority, germinoma (1/112, 0.8%) and poorly differentiated carcinomas (2.7%, 3/112) were detected (Tables 6 and 7).

Table 1: Distribution of the patients according to age group.

	Frequency	Percent	Valid Percent	Cumulative Percent	p Value
20-29 years	5	4.5	4.5	4.5	0.507
30-39 years	20	17.9	17.9	22.3	
40-49 years	28	25.0	25.0	47.3	
50-59 years	27	24.1	24.1	71.4	
60 years and Above	32	28.6	28.6	100.0	
Total	112	100.0	100.0		

Table 2: Distribution of symptoms and signs among studied patients.

Sign and symptoms	Frequencies and percentages
Ascites	14/112 (12.5%)
Abdominal discomfort	52/112 (46%)
Pelvic pain and swelling	32/112 (29%)
Irregular bleeding	14/112 (12.5)

Table 3: Duration of the symptoms of diseases among the study subjects.

Duration of disease	No & frequency
Less than 6 months	50/112 (45%)
6-12 months	38/112 (34%)
12-18 months	2/112 (1.8%)
18-24 months	4/112 (3.6%)
24-30 months	2/112 (1.8%)
30-36 months	14/112 (12%)
36-42 months	2/112 (10.8%)

Table 4: Marital status of the study women.

Variable	Frequency	Percent	Valid Percent	Cumulative Percent	t-test	p value
Married with children	23	20.5	20.5	20.5		
Married without children	46	41.1	41.1	61.6	9.795	0.000
Single	43	38.4	38.4	100.0		
Total	112	100.0	100.0			

Table 5: Association of other tumors with ovarian cancer.

	Frequency	Percent	Valid Percent	Cumulative Percent	P value	correlation
No	106	94.6	94.6	94.6		
Yes	6	5.4	5.4	100.0	0.132	.143
Total	112	100.0	100.0			

Table 6: Histological distribution among the patients.

Histological type	Frequency	Percent	Valid Percent	Cumulative Percent
Serious Adenocarcinoma	91	81.2	81.2	81.2
Mucinous	11	9.8	9.8	91.1
Endometroid	6	5.4	5.4	96.4
Poorly Differenyiated Carcinoma	3	2.7	2.7	99.1
Germinoma	1	.9	.9	100.0
Total	112	100.0	100.0	

Table 7: Stages of different hispatternsal pattern of disease.

Disease Stage	Frequency	Percent
3	42	37.5
4	34	30.4
2	23	20.5
1	11	9.8
Total	110	98.2
Missing	2	1.8
Total	112	100.0

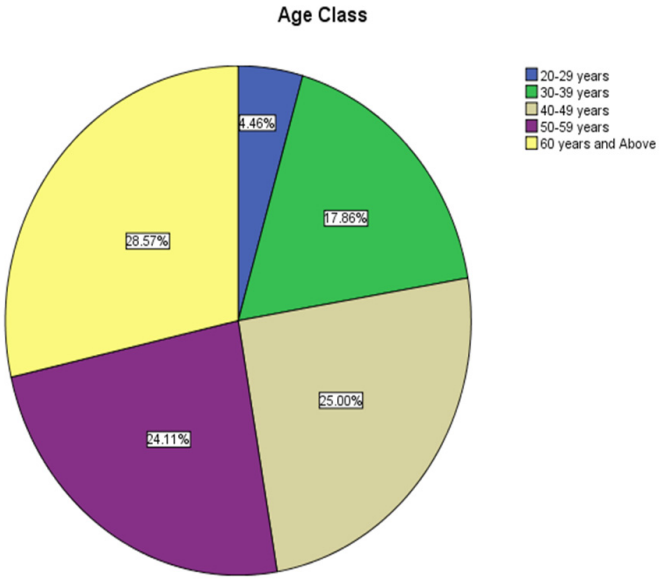

Figure 1: Distribution of the patients according to age group.

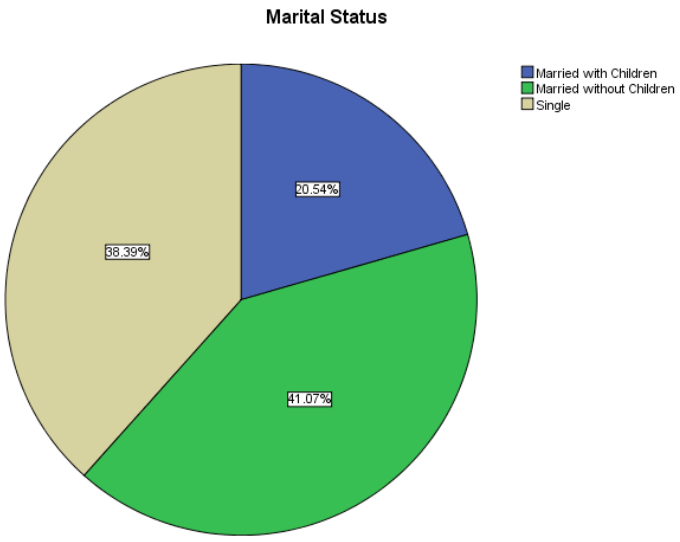

Figure 2: Distribution of ovarian cancer according to marital status.

Discussion

Currently, ovarian cancer is the most fatal gynecologic malignancy affecting Sudanese women. Unfortunately, the subtle symptoms of this disease cause the majority of cases to appear late. It is worse because there are no sensitive and accurate testing for this cancer. In our study, the bulk of the patients were older than 60, although it was far less frequent in people under 30 and older than 70. The findings concurred with those of a study conducted in the United States, which found that women between the ages of 60 and 64 had the highest prevalence (10). According to this study, getting married and having kids greatly lowers the risk of acquiring ovarian cancer. Most of the patients we saw had never had children. This is in line with the U.S. Third National Cancer Survey [1969-1971], which found that women who had never married were 60-70% more likely to get ovarian cancer than those who did [11]. While irregular vaginal bleeding and ascites were uncommon, the most prevalent symptoms were ambiguous (abdominal discomfort and pelvic pain), which explains the disease's late manifestation during the first year of development. This is consistent with earlier findings from the area and around the world [12]. A handful of our patients received an early diagnosis, but more than half of them had serous adenocarcinomas of the ovaries that were in advanced stages. This is consistent with earlier findings from the area and around the world [13]. Fewer patients had other histological types visible. The findings did not agree with those from the rest of the world, which indicated that endometroid cancer predominated [14]. 6/112, or 5.4%, of the patients also had endometrial, colon, lung, breast, or brain tumors at the same time as their ovarian cancer. Compared to other cancers, breast and colon cancer appear to occur more frequently together. This is consistent with earlier findings from the area and around the world [15]. This could be explained by the fact that BRCA1 and BRCA2 genes confer increased susceptibility to cancer is more commonly seen in patients with breast, colon, and ovarian cancers in agreement with the report of Wooster and colleagues [16-18].

Conclusion

The majority of Sudanese women who get ovarian cancer are childless and unmarried. Below 30 years old, it is less frequent, and over 60 years old, it is more prevalent. Serous adenocarcinoma is the predominant histological type, with stage 3 being the most frequent.

Declarations

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