Genito-urinary findings in women with ovarian tumors

Hallazgos genito urinarios en mujeres con tumores ováricos

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ABSTRACT

Ovarian tumors are the most common gynecological disorders. Ovarian tumors are the third most common tumor in women. Ovarian tumors are sometimes asymptomatic and have non-specific symptoms, making most cases difficult to detect early. The aim of this study was to investigate genitourinary features of ovarian tumor in a hospital-based study. An observational study was conducted in Baghdad, Iraq, between September 2018 and February 2021. Women diagnosed with ovarian tumors at 18 years of age or older. A total of Fifty women who enrolled in our hospital. Clinical and pathological data collected and analyzed. Data about comorbidities and outcomes were approved and diagnosed by full team of multidisciplinary gynecological and urological doctors were recorded. Overall incidence of ovarian tumors was 70% malignant and 30% benign. The study showed that the most age group of ovarian tumors was above 55 years (62%). Half of patients were nulliparities. Educational level was mostly of low level in illiterate (20%), primary (24%), secondary (36%) compared to high level. Women used contraception in 52%. The family history reported in 18% of women. The most common histopathological type was ovarian serous carcinoma 15(30%). Regional stages were common in 50% of patients. Low grade tumors in 32%, intermediate in 36% and high in 32%. Almost, 80% of women underwent TAH. About 60% of patients received chemotherapy. The long-term adverse genitourinary health outcomes correlated included Nephritis (6%), Acute renal failure (16%), Chronic kidney disease (18%), UTI (38%), Calculus (16%), Hydronephrosis (20%), Bladder obstruction (2%), Ureteric stenosis (12%), Urine retention (8%), Urine incontinence (12%), Hematuria (22%), PID (14%), Organ adhesion (8%), Cervicitis (2%), Endometriosis (2%), Cyst (6%), Menstrual disorders (24%), Infertility (2%), and Menopausal pain (32%). In conclusion, ovarian cancer represents the third most common gynecologic cancer type. It was more common in women aged above five decades. The most common histopathological type is ovarian serous carcinoma. We observed that ovarian cancer survivors experienced increased risks of various genitourinary diseases. Understanding the multi-morbidity scenarios for ovarian tumors is of vital importance to improve clinical care after diagnosis.

Keywords: ovarian tumor, genitourinary findings, ovarian serous carcinoma, acute renal failure, urine retention, calculus, UTI

Introduction

Ovarian tumors are the most common gynecological problems, mostly present as cystic lesions. Its incidence ranging from 5% to 15% worldwide. Benign fibroids are the most common, reaching a third of new gynecological cases annually. Non-neoplasms benign ovarian tumors are caused by inflammation or the late effects of endocrine secretions, whereas neoplasms are caused by abnormal growth of cells[1]. Globally, there were 313,959 new cases of ovarian tumor, and 207,252 new deaths in 2021[2]. In Iraq, there were 914 new case of ovarian carcinoma, in addition to 678 deaths in 2020[3]. Early menarche and late menopause are common known risk factors, besides,

endometriosis, smoking, alcohol and a family history[4,5].

Ovarian cancers are asymptomatic and have non-specific symptoms, making them difficult to diagnose early. Initial physical examination is the easiest approach to suspect the diagnosis of ovarian tumor[5]. Although screening methods have been developed to be able to diagnose ovarian tumors at an early stage[4]. Therefore, practitioners were able to perform the correct physical examinations and findings that support workup for ovarian tumors[4,5].

Ovarian cancer is revealed an increased abdominal volume, which confused with gastrointestinal and urinary tracts conditions[1,4]. About 80% of cases are diagnosed at advanced stages, and symptoms will depend on the organ affected and invaded. At this time the woman experiences gastrointestinal upset, with lower abdominal or pelvic pain, constipation, diarrhea, vaginal bleeding, ascites, and may be UTI symptoms[4].

In adolescent girls often report secondary amenorrhea, abdominal pain and distention. In adult women, heavy irregular bleeding and postmenopausal bleeding are the most frequent symptoms[6].

Based on Surveillance, Epidemiology, and End Results program (SEER)-Medicare linked data, higher rates of hypertension, thromboembolic events, congestive heart failure, UTI, and anemia were observed among ovarian cancer survivors[7]. Another study reported high prevalence of cognitive changes, peripheral neuropathy, and sexual changes[8]. In Sweden, a study reported higher prevalence of several self-reported urinary tract and pelvic symptoms[9]. Also, genitourinary complications during treatment are well-known among ovarian cancer patients[9, 10].

Methods

Study design and setting

An observational study was conducted in Baghdad, Iraq, between September 2018 and February 2021.

Participants

Women diagnosed with ovarian tumors at 18 years of age or older. A total of Fifty women who enrolled in our hospital. Ovarian tumors was classified according to the International Classification of Diseases for Oncology, version 3 (ICD-O-3 code: C56.9), after followed the 2014 WHO classification guidelines to categorize the histopathology types[11-13].

Data collection

Clinical and pathological data collected and analyzed. History was taken for every case including age, marital status, pregnancy history, parity, contraceptive history, and family history. Histopathology and staging of disease plus other properties was recorded from file of each woman. Data about comorbidities and outcomes were approved and diagnosed by full team of multidisciplinary gynecological and urological doctors, including Nephritis; Acute renal failure; Chronic kidney disease; UTI; Calculus; Hydronephrosis; Bladder obstruction; Ureteric stenosis

Urine retention; Urine incontinence; Hematuria; PID; Organ adhesion; Cervicitis; Endometriosis

Cyst; Menstrual disorders; Infertility and Menopausal pain were recorded.

Statistical Analysis

Study data were collected and processed using statistical analysis was performed using SPSS v24 (IBM Inc., Chicago, IL, USA). Descriptive statistics consist of numbers, and percentages were measured. Mean, median, range, min, max, and SD for categorical data calculated. A two-sided *P* value of less than 0.05 was considered statistically significant.

Results

Overall incidence of ovarian tumors was 70% malignant and 30% benign. (Table 1)

Table 1. The overall incidence.

	No.	%
Malignant	35	70
Benign fibroid	15	30
Total	50	

The study showed that the most age group of ovarian tumors was above 55 years (62%). Women lived in urban areas were (52%), whereas those lived in rural were (48%). Half of patients were nulliparities. Educational level was mostly of low level in illiterate (20%), primary (24%), secondary (36%) compared to high level in university (10%) and postgraduate (10%). High percentage of women were not married (18, 36%) in compares with married women 16(32%). Women used contraception in 52%. Whom housewives 58% in comparison with employer women 42%. The family history reported in 18% of women. (Table 2)

Table 2. The socio-demographic variables.

		No.	%
Age (years)	<55	19	38
	≥55	31	62
Residency	Rural	24	48
	Urban	26	52
Pregnancy History	Nulliparous	25	50
	1-5	12	24
	>5	13	26
Education Level	Illiterate	10	20
	Primary	12	24
	Secondary	18	36
	University	5	10
	Postgraduate	5	10
Marital Statues	Single	18	36
	Married	16	32
	Divorce	9	18
	Widow	7	14
Contraception	Yes	26	52
	No	24	48
Occupation	Employee	21	42
	House wife	29	58
Family History	Positive	9	18
	Negative	41	82

The most common histopathological type was ovarian serous carcinoma 15(30%), and a presence of other types in different proportions. Regional stages were common in 50% of patients. Low grade tumors in 32%, intermediate in 36% and high in 32%. Almost, 80% of women underwent TAH. About 60% of patients received chemotherapy. (Table 3)

Table 3. Ovarian tumors baseline characteristics.

		No.	%
Histopathology	Serous	15	30
	Mucinous	7	14
	Clear cell	3	6
	Sarcoma	3	6
	Teratoma	2	4
	Undifferentiated	5	10
	Fibroids	15	30
Stage	Localized	15	30
	Regional	25	50
	Distant	10	20
Grade	Low	16	32
	Intermediate	18	36
	High	16	32
Surgery	TAH-BSO	40	80
	Limited	10	20
Chemotherapy	Yes	30	60
	No	20	40

Genitourinary findings of ovarian tumors were reported in different proportions. (Table 4)

Table 4. Genitourinary findings among ovarian tumors.

		No.	%
Urinary system	Nephritis	3	6
	Acute renal failure	8	16
	Chronic kidney disease	9	18
	UTI	19	38
	Calculus	8	16
	Hydronephrosis	10	20
	Bladder obstruction	1	2
	Ureteric stenosis	6	12
	Urine retention	4	8
	Urine incontinence	6	12
	Hematuria	11	22
Genital system	PID	7	14
	Organ adhesion	4	8
	Cervicitis	1	2
	Endometriosis	1	2
	Cyst	3	6
	Menstrual disorders	12	24
	Infertility	1	2
	Menopausal pain	16	32

Discussion

Ovarian cancer is one of the most common gynecologic cancer types and is the third type after uterine and cervical cancers. These percentages were obtained due to improved ovarian cancer diagnosis, mainly sonography[14]. This result is similar to the results in other studies in Egypt and Jordan[15,16]. Other obtained data showed that ovarian cancer was most common in women aged above 55 years, this result is the same in other countries, such as Egypt, Iran, Canada, Japan, Brazil and the USA[15, 17, 18].

In the year 2007, the Middle East Cancer Consortium (MECC) evaluated the incidence of ovarian cancer in its four member countries, namely Egypt, Cyprus, Jordan, and USA and compared it to the incidence in the USA based on the SEER data base. This study revealed that in Cypriots and US SEER data, most patients with ovarian cancer were in the age group from 50 to 69, while in Egypt and Jordan, most patients were below the age of 50 years[17]. Ovarian cancer distribution by age in Saudi Arabia in 2008 was 32% in patients aged 45–59 years, 31% in patients aged 60–74 years, and 3.7% in patients aged 0–14 years[19], while in the United Kingdom it was 70.6% in women aged 75–79 years[20].

In Iran, the rates of female reproductive cancers were significantly higher among residents of cities than villages[21], while here, there was no difference.

It has been estimated that ovarian cancer is familial hereditary in about 5–10% of cases. The most important risk factor of ovarian cancer is the presence of this disease in first-degree relatives (mother, daughter, sister). The risk increases considerably with significant family history, meaning two first-degree relatives with ovarian cancer[22].

The most common histopathological type was serous type. As in the Middle East consortium study, serous carcinomas predominated, ranging between 27.2% and 49.9%, followed by adenocarcinomas in Jordanians (28.7%) and Egyptians (27.2%). The proportion of mucinous carcinomas among Egyptians was 16.1% and among Jordanians 11.7%, whereas the percentages were low in Cypriot registries (ranging from 6 to 8.7%[16]), Australia (3.4%), and Japan (5.4%)[23]. In a Turkish study, 69% of ovarian cancers were epithelial stromal tumors, 9% were sex-cord stromal tumors, 5% germ cell tumors, and 15% were metastatic[24]. In Iran, serous adenocarcinoma (57.6%) was the most common pathology found in patients with epithelial ovarian cancer[25].

The largest percentage of our patients presented in An advance stages. Similar results, with 78% of stage III or IV cases, have also been reported[19]. Another study found that stages III and IV accounted for only 56.2% of their cases[18]. Most of the patients in Egypt (84.3%) presented with advanced stage III and IV, whereas only 15.7% of patients presented with stage I and II[25]. While in England, the percentage of stage III was 31.1% and stage IV was 18.1% whereas stage I was noted in 30.6% and stage II in 5% of cases[20].

Complications of ovarian cancer can include its spread to other organs, progressive function loss of various organs, ascites, and intestinal obstructions[26].

In this hospital-based study, we documented that ovarian tumors had an increased risk of several genitourinary diseases. The long-term adverse genitourinary health outcomes correlated included

Nephritis (6%), Acute renal failure (16%), chronic kidney disease (18%), UTI (38%), Calculus (16%), Hydronephrosis (20%), Bladder obstruction (2%), Ureteric stenosis (12%), Urine retention (8%), Urine incontinence (12%), Hematuria (22%), PID (14%), Organ adhesion (8%), Cervicitis (2%), Endometriosis (2%), Cyst (6%), Menstrual disorders (24%), Infertility (2%), and Menopausal pain (32%). Increased risks of urinary system disorders among ovarian cancer patients were associated with cancer treatment, advanced stage, serous histology, age at cancer diagnosis, and higher baseline comorbidity[14].

According to a SEER patterns of care report, the percentage of ovarian cancer patients who received chemotherapy was 64% for stage I or II and 80% for stage III or IV[27]. In our study, the percentage of receiving chemotherapy was similar (60%).

An increased risk of urinary system disorders in high stage disease is likely due to advances in the treatment. A SEER Medicare study including 5,087 ovarian cancer survivors ≥ 66 years reported higher incidence of renal disease 3- and 12-months after cancer diagnosis compared with cancer-free women[28].

A systematic review, including data from 31 publications, reported that gynecologic cancer survivors had a higher prevalence of pelvic floor disorders (which include urinary incontinence, fecal incontinence, and pelvic organ prolapse)[29].

Women who were >50 years of age had completed menopause, after which there is less hormonal and metabolic activity associated with the female reproductive organs, and they were not at risk of certain genital organ disorders, such as menstrual disorders and infertility[30]. Women who had hysterectomy or oophorectomy would not be at risk of genital organ disorders, such as endometriosis, menstrual disorders, menopausal disorders, and ovarian cyst[14].

According to the National Comprehensive Cancer Network (NCCN) guidelines for ovarian cancer patients, follow-up is recommended every 2 to 4 months during the first two years, every 3 to 6 months during the following three years after cancer treatment and once per year after 3 years[31]. Therefore, ovarian cancer survivors may be more likely to be diagnosed earlier with their adverse health outcomes compared with women from the general population. However, the frequency of clinic visits likely decreases over time, and the follow-up period of >5 years after cancer diagnosis should be less affected by increased surveillance[14].

Conclusion

Ovarian cancer represents the third most common gynecologic cancer type. It was more common in women aged above five decades. The most common histopathological type is ovarian serous carcinoma. We observed that ovarian cancer survivors experienced increased risks of various genitourinary diseases. Understanding the multi-morbidity scenarios for ovarian tumors is of vital importance to improve clinical care after diagnosis.

Declaraciones

Los autores declaran no tener conflictos de interés de ninguna clase, que el trabajo ha sido aprobado por el comité de ética responsable en el lugar de trabajo y no declaran medios de financiación del trabajo realizado.

Declarations

The authors declare that they have no conflicts of interest, that the work has been approved by the ethics committee responsible in the workplace, and do not declare means of financing of the work carried out.

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RESUMEN

Los tumores de ovario son los trastornos ginecológicos más comunes. Los tumores de ovario son el tercer tumor más común en las mujeres. Los tumores de ovario a veces son asintomáticos y tienen síntomas no específicos, lo que hace que la mayoría de los casos sean difíciles de detectar temprano. El objetivo de este estudio fue investigar las características genitourinarias del tumor ovárico en un estudio hospitalario. Se realizó un estudio observacional en Bagdad, Iraq, entre septiembre de 2018 y febrero de 2021. Las mujeres diagnosticadas con tumores ovarios a los 18 años de edad o más. Un total de cincuenta mujeres que se inscribieron en nuestro hospital. Datos clínicos y patológicos recopilados y analizados. Los datos sobre comorbilidades y resultados fueron aprobados y diagnosticados por un equipo completo de médicos ginecológicos y urológicos multidisciplinarios. La incidencia general de tumores ováricos fue 70% maligna y 30% benigna. El estudio mostró que la mayor parte del grupo de edad de tumores ováricos era superior a 55 años (62%). La mitad de los pacientes eran nuliparidades. El nivel educativo era principalmente de bajo nivel en analfabeto (20%), primario (24%), secundario (36%) en comparación con el alto nivel. Las mujeres usaron anticoncepción en 52%. La historia familiar informó en el 18% de las mujeres. El tipo histopatológico más común era el carcinoma seroso ovárico 15 (30%). Las etapas regionales eran comunes en el 50% de los pacientes. Tumores de bajo grado en 32%, intermedio en 36%y alto en 32%. Casi, el 80% de las mujeres se sometieron a TAH. Alrededor del 60% de los pacientes recibieron quimioterapia. Los resultados de salud genitourinaria adversos a largo plazo incluyeron nefritis (6%), insuficiencia renal aguda (16%), enfermedad renal crónica (18%), infección urinaria (38%), cálculo (16%), hidronefrosis (20%), Obstrucción de la vejiga (2%), estenosis ureteral (12%), retención de orina (8%), incontinencia de orina (12%), hematuria (22%), PID (14%), adhesión de órganos (8%), cervicitis (2 %), Endometriosis (2%), quiste (6%), trastornos menstruales (24%), infertilidad (2%) y dolor menopáusica (32%). En conclusión, el cáncer de ovario representa el tercer tipo de cáncer ginecológico más común. Era más común en mujeres mayores de cinco décadas. El tipo histopatológico más común es el carcinoma seroso ovárico. Observamos que los sobrevivientes de cáncer de ovario experimentaron mayores riesgos de varias enfermedades genitourinarias. Comprender los escenarios de la morbilidad múltiple para los tumores ováricos es de vital importancia para mejorar la atención clínica después del diagnóstico.

Palabras clave: tumor ovárico, hallazgos genitourinarios, carcinoma seroso de ovario, insuficiencia renal aguda, retención de orina, cálculo, infección urinaria