

Approach of gynecological cancers at Jordan University Hospital: facts and figures

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Summary

Objectives: The aim of this study was to determine the pattern of gynaecological malignancies treated at the Department of Gynecology and Obstetrics at Jordan University Hospital (JUH), with a retrospective study. **Materials and Methods:** All patients diagnosed to have primary gynecologic cancer treated surgically in the period between June 2013 and June 2017 at JUH were included. Type of malignancy, age distribution, incidence of cancer, and stage of the disease were assessed. **Results:** In total, 115 cases of gynecological cancers were managed during the study period. Overall, the mean age for cancer patients was 58.56 years. Uterine cancer was the most common as 50 cases, constituting approximately 43.38% of gynecological cancers, followed by ovarian cancer 38 cases. The mean age for endometrial carcinoma was 57.17 years, for ovarian carcinoma 56.11 years, and for cervical carcinoma 62.22 years. Most patients with endometrial carcinoma presented with Stage I, ovarian carcinoma presented with an advanced disease; cervical carcinoma, most of the cases presented with Stage I disease. **Conclusion:** Endometrial and ovarian malignancies are the most frequent malignancies encountered in Jordan. Cancer remains an important public health problem in Jordan and the need is evident to make a concerted attack on this health assassin. Estimation and projection of the cancer burden is clearly an essential step in planning an allocation of resources.

Key words: Gynecological malignancies; Distribution patterns; Frequency.

Introduction

Jordan is a developing country occupying the heart area of the Middle East with a total area of 89,342 km², the population was 8,185,384 in 2016, and the population world rank is 112. Female population is slightly less than the male one; 49.50% with life expectancy of 76.1 years. The birth rate is 25.5 births/1.000 population, the total fertility rate is 3.18 children born/woman, and the mother's mean age at first birth 24.7 years as illustrated in Table 1 [1].

The gynecological malignancy patterns differ from one geographical region to another [2]. It is not a questionable fact that cervical cancer ranks second to breast cancer at the top of the list of female cancer worldwide [3, 4], notwithstanding the fact that some reports considered uterine cancer to be the most common type of cancer in the female genital tract [5], and for both arms of this controversy, being dependant on the classification of the country where the screening programs are practiced and applicable [6]. Cancer is second only to cardiovascular disease, as a leading cause of death and disability worldwide [6]. Cancer causes more deaths annually than human immunodeficiency virus (HIV), tuberculosis, and malaria combined [7]. The prevalence of cancer in developing nations is increasing, in contrast to that of three decades ago, when it was much less common, as now exceeded the prevalence in de-

veloped nations. Based on the figures issued by the International Agency for Research on Cancer (IARC), deaths caused by cancer in developing countries had a 63% share of the 7.6 million cancer deaths worldwide in 2008, while the share was 53% of the 12.7 million new cases for the same year [8]. Such figures, if compared to three decades earlier, indicate developing countries had a minor share of only 15% of global cancer cases [9]. Justifications for such a shift in figures between developing and developed countries over the span of three decades is often attributed to the adoption of Western lifestyle characteristics, including but not limited to cigarette smoking, low fiber/high fat diets

Table 1. — Demography of Jordan as estimated in 2016.

Demography	Figure
Population	8,185,384
Total area (km ²)	89,342
Population world rank	112
Percent of population male (%)	50.50
Percent of population female (%)	49.50
Life expectance male (year)	73.2
Life expectance female (year)	76.1
Birth rate	25.5 births/1,000 population
Death rate	3.8 deaths/ 1,000 population
Total fertility rate	3.18 children born/ women
Mothers mean age at first child (year)	24.7

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and decrease physical activity [10]. In developing countries gynaecological malignancies represent approximately 33% of all female cancer cases, which includes cancers of the ovary, fallopian tube, uterine body, cervix, vagina and vulva, as well as choriocarcinoma [11]. The purpose of this analysis is to illustrate the pattern of gynecological malignancies treated at the present hospital during the study period and to compare these patterns with other countries and international studies.

Materials and Methods

There were 115 patients with newly primary diagnosed and treated gynecologic cancers in Obstetrics and Gynecology Department at JUH. The gynaecologic malignancies were classified according to the primary site. Detailed history, physical examination, preoperative investigations, and radiologic evaluation were applied when needed. Biopsy, cystoscopy, rectoscopy, and radiologic evaluation were used according to the established protocols. After an explanation, a written consent for the procedure was obtained. In the present hospital, the final histopathology reports were usually available within 3-5 days after the day of surgery. The study was conducted following the approval of the department committee at the hospital. All patients were subjected to a thorough evaluation in which history was obtained, followed by examination and investigation. Only biopsy proven cases were included in the study. The staging and grading system of the FIGO was applied. All patients with endometrial and ovarian malignancies were evaluated surgically, while cervical and vulvar cases were evaluated by clinical estimation of the extent of the disease, and subsequently confirmed by surgical staging when applicable. Hysteroscopy and endometrial biopsy were performed for cases of endometrial cancer. Colposcopy, biopsy, fractional dilatation and curettage when necessary, cystoscopy, and rectoscopy were used for examination of patients with cervical cancer. Biopsies from the lesions were obtained in cases of vulvar cancer. Laparotomy was utilized for premenopausal patients with suspicious lesions, with a cystic mass larger than 8 cm detected in pelvic examination and ultrasound (US) or with persistent solid and semisolid masses. Postmenopausal patients with adnexal masses were also prepared for surgical exploration. Median incision was applied for intra-abdominal accessing. In cases of uterine and ovarian cancers, an intra-abdominal fluid was used for cytological examination and in the absence of free fluid, peritoneal cytological samples were obtained using a washing performed with saline solution.

Results

A total number of 115 primary gynaecological malignant cases were managed during the study period. The age distribution of the four main types of cancers being: endometrial, ovarian, cervical, and vulvar are shown in Table 2. The mean age for cancer patients was 58.56 (median 53) years. The mean age of women with endometrial, ovarian, cervical and vulvar was 57.15, 56.11, 62.22 and 58.75 years, respectively. The age distribution of gynecological malignancies revealed that the peak incidence in the age group between 55 to 64 years. The single case of primary vaginal carcinoma case falls within this age group as well. Uterine carcinomas were the most frequent type of cancer

Table 2. — *Distribution of gynaecologic cancer by age group, Academic Hospital (JUH) June 2013 - June 2017.*

Age group (years)	Uterus	Ovary	Cervix	Vulva
15-24	0 (0.0%)	1 (2.6%)	0 (0.0%)	0 (0.0%)
25-34	3 (6%)	1 (2.6%)	0 (0.0%)	0 (0.0%)
35-44	2 (4%)	3 (8%)	1 (5.6%)	1 (12.5%)
45-54	13 (26%)	10 (26.3%)	3 (16.7%)	1 (12.5%)
55-64	20 (40%)	16 (42.1%)	8 (44.4%)	5 (62.5%)
65-74	10 (20%)	6 (15.8%)	4 (22.2%)	1 (12.5%)
≥ 75	2 (4%)	1 (2.6%)	2 (11.1%)	0 (0.0%)
Total	50 (43.48%)	38 (33.04%)	18 (15.65%)	8 (6.98%)
Mean (year)	57.17	56.11	62.22	58.75

Table 3. — *Site and stage of gynaecologic cancer, Academic Hospital (JUH). June 2013 - June 2017.*

Site/ Stage	Uterus	Ovary	Cervix	Vulva
I	18 (36%)	12 (32%)	9 (50%)	4 (50%)
II	12 (24%)	6 (16%)	1 (6%)	0 (0%)
III	15 (30%)	16 (42%)	6 (33%)	3 (38%)
IV	5 (10%)	4 (10%)	2 (11%)	1 (12%)
Total	50 (100%)	38 (100%)	18 (100%)	8 (100%)

in this study; comprising 43.48% of all gynaecological malignancies, 36% of which were in Stage I at the time of diagnosis. Ovarian tumors were the second most common malignancy in the study group where 38 patients out of 115 patients (33.04%) found to have ovarian cancer. Cervical cancer, which is the most common malignancy reported in Western studies, was found to be the third most frequent in this analysis as 18 (15.65%) cases presented with this malignancy among the study group, as set portrayed in Table 3.

Discussion

All cases included in this study review were primary in origin for each type of malignancy. The distribution pattern of gynaecological malignancies at the present hospital, according to this analysis, ranked endometrial cancer to be the most common malignancy in Jordan. This result is comparable to research results found in developed countries [12-14], particularly the United States [15-17]. On the other hand, many publications from other developed and developing nations have shown ovarian cancer to be the most common gynaecological malignancy [18, 19], whereas it ranked second to endometrial cancer in this study, thus the result being consistent with more universal figures in this regard. The preceding is evidenced in this study by the fact that 88 out of 115 (76.52%) cases sampled herein were categorized under these two types of cancer. It was further noticed that 45 cases out of the 115 (39.13%) cases were found in women in the age group 55 to 64 years. Most cases of endometrial cancer in this study were in Stage I of the disease as 18 patients out of 50 (36%) patients were man-

aged according to the ideal FIGO recommendations as endometrial cancer is supposed to be a treatable disease due to earlier diagnosis prior to extra uterine metastases which matches with others [12, 20] which was the same principle in the diagnosis and management for cervical and vulvar cancer patients, but the situation was different for ovarian cancer patients were the majority found in Stages III and IV as 20 patients out of 38 (52.63%) located in these stages of the disease [21, 22] which has the highest mortality rate; frequency of disorder increases in the postmenopausal period [1, 23]. Surgery was the first step in the management of the most cases in the current study as the authors demonstrated that 50% of the most common two types of primary gynaecologic cancers; both uterine and ovarian are located in early stages of the disease; Stages I and II, while 50% of cervical and vulvar cancers presented in Stage I of the disease (Table 3).

Contrary to what has been stated above, many studies that originated from developing countries reported cervical cancer to be the most common type of genital malignancies [24-27], which found to have the highest incidence and mortality rate worldwide [11], but not surprising to know that cervical cancer is a preventable disease due to valid and widespread screening programs, long-lasting preinvasive period, and effective treatment as applied in the patients in this study being mostly presented and diagnosed in the early stages were 50% in Stage I disease, but all in all the high incidence worldwide reflecting the poor screening programs for early detection of cases in the premalignant stages. In contrast, the existence of widespread cervical screening programs in the developed world tremendously reduced the burden of cervical malignancy. Tilted the balance sounds as if the screening program somehow helped uterine malignancy, when in fact decreased cervical malignancy, and screening does offer protective benefits and is associated with a reduction in these critical outcomes [20, 28]. A recent report from Nigeria indicated that approximately 50% of female genital malignancies are cervical in origin [29], while another report from Nepal stated that cervical malignancy was confirmed in 1,293 cases out of 1,517 (about 85%) cases of genital malignancies [30]. This result consistent with the well-known fact about ovarian tumors is that it is often discovered at late stages [31].

Given that all gynecologic cancers have an adverse impact on the female reproductive process, research which concentrates on each type of cancer difference must take into consideration the challenge that each malignancy type faces in regards to the differing measures aimed at prevention, detection, diagnosis, treatment, and follow-up. It becomes evident from the foregoing that developing countries bear a significant onus when it comes to combating gynaecological cancers. Such onus calls for two pillars of intervention. The first is the allocation of needed resources, including the financial responsibility to pour into the early detection pool. Secondly, developed countries bear an onus

in the armament of proper and accurate information used by prevention program managers in setting specific out combat strategies in developing countries for gynaecological malignancies.

Conclusion

By comparison to other gynaecological malignancies, endometrial and ovarian are the most frequently encountered in Jordan. To reduce encumbrance caused by gynaecological malignancies, certain wise measures must be adopted and implemented to combat these diseases. Such measures must include aggressive awareness campaigns directed to women which stress the significance of early detection in order to cure the disease. The preceding must be coupled with detailed studies of epidemiology and effectiveness of screening modalities. In addition, without funding for cancer prevention and care, none of the aforementioned measures can be neither adopted nor implemented. It is needless to state that in order to improve the management of endometrial, ovarian, and cervical cancers in the less fortunate parts of the world, basic human rights should be considered. The right to live, the right to education, and the right to freedom from suffering as part and parcel thereof. An effective motto that gives perspective to the preceding should be that one must always remember that neither age nor marital or financial status can provide immunity against cancer.

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Conflict of Interest

No conflict of interest was declared by the authors.

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