

EDITORIAL

## Gynecological Malignancies Managed in The Institute of Nuclear Medicine and Oncology, Wadmedani-Sudan During 1999-2005.

Dafalla Omer Abuidris <sup>1</sup>, Rehab Sid-Ahmed Mohammed Iboof <sup>2</sup>, Mohamed Elsanousi Mohamed Elsanousi <sup>3</sup>, Elgaylani Abdalla Eltayeb <sup>4</sup>, Elgaili Mohamed El Gaili <sup>5</sup>

- 1- Ass. Professor- radiation oncology Department-INMO-university of Gezira.
- 2- MD. Obstetric and gynecology- Wadmedani- Ministry of Health
- 3- Professor of Obstetric and gynecology- University of Gezira.
- 4- Ass. Professor- radiation oncology Department-INMO-university of Gezira.
- 5- Ass. Professor-Department of pathology- Wadmedani- University of Gezira.

### Correspondent

Dr. Dafalla Omer Abuidris  
Institute of Nuclear Medicine, Molecular Biology and Oncology.  
University of Gezira  
Email: abuidris@yahoo.com

### Abstract:

**Introduction:** Gynecological malignancies (GMs) are one of the most prevalent cancers in Africa. Objective of this work is to review data of patients with GMs treated in Institute of Nuclear Medicine, Molecular Biology and Oncology (INMO)-University of Gezira -Wadmedani- Sudan, and reflect on characteristics of GMs in Central Sudan.

**Material and Methods:** A retrospective hospital-based descriptive study was conducted to review GMs patients records treated in INMO from year 1999-2005. Analysis included age, residence, stage, topography and morphology of the cancer.

**Results:** During study period GMs constituted about 20.5 percent of all women malignancies and it is the second commonest female cancer preceded by breast (36.7%). Most of the patients were housewives from rural areas of Gezira and nearby States. The sites were ovary, 41%, cervix, 34%, uterus, 13.8%, uterine choriocarcinoma, 7.9%, vulva cancer, 2.9% and no single case of vaginal carcinoma was reported. The mean age of all patients was 52.45 years, Median age for ovarian cancer was, 50, cervix 55, uterus 55, Choriocarcinoma of the uterus 35 and vulva 60 years of age.

Almost all varieties of histopathological types were seen. Fifty eight percent of patients presented with stage III & IV.

**Conclusions:** GMs are common and present in late stages. The commonest GMs was ovarian cancer which affect relatively young patients. Cervix was the second common site and affect relatively older age group. Vulvar cancer was relatively rare and vaginal cancer was not seen. For the improvement of the outcome early detection, management guidelines and financial support are highly recommended.

**Key words:** gynecological, malignancies, ovary, uterus, cervix, Sudan.

### المخلص:

**المقدمة:** تعتبر الأورام النسائية الخبيثة احدي أكثر السرطانات انتشاراً في أفريقيا . تهدف هذه الدراسة لمراجعة المعلومات عن المريضات المصابات بهذه الأورام واللاتي تمت معالجتهم بمعهد الطب النووي والأحياء الجزيئية و علاج الأورام و الذي يتبع لجامعة الجزيرة بود مدني - السودان , ولعكس خصائص هذا النوع من الأورام في أواسط السودان .

**منهجية البحث :** أجريت هذه الدراسة الوصفية استناداً على السجلات التابعة للمعهد علي مدي ستة سنوات في الفترة من 1999-2005 . تضمن التحليل العمر , الإقامة , موضع ومراحل الورم إضافة الى نوعه النسيجي.

**النتائج :** وجدت الدراسة أن الأورام النسائية تمثل 20.5% من جميع الأمراض الخبيثة في منطقة الدراسة وهي تأتي في المرتبة الثانية من حيث الشيوع بعد سرطانة الثدي و التي مثلت 36.7% . اغلب السيدات كن ربات منازل ومن المناطق الريفية لولاية الجزيرة و الولايات المجاورة لها . كانت مواضع المرض كالآتي :

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في المبيض 41% ، 34% في عنق الرحم، 31.8% في الرحم، 7.9% سرطان مشيميائي و 2.9% في الفرج بينما لم توجد حالة واحدة لسرطانة المهبل أوضحت الدراسة أن متوسط العمر في جميع السيدات 52.5 عاماً و الوسيط حسب الموضع كالأتي : سرطانة المبيض 50 ، عنق الرحم 55 ، الرحم 55، السرطانة الشيمائية 35 و الفرج 60 عاماً . شوهدت جميع أنواع الأنسجة الميضة لهذه الأورام .  
**خلاصة الدراسة:** سرطانة المبيض هي أكثر الأنواع شيوعاً وتصيب سيدات صغيرات في العمر نسبياً . سرطانة عنق الرحم تأتي في المرتبة الثانية و السيدات المصابات أعمارهن كبيرة نسبياً . سرطانة الفرج نادرة الحدوث ولم تسجل أي حالة من حالات سرطانة المهبل. لتحسين نتائج المعالجة ومستقبل المرض توصي الدراسة بالعمل علي الاكتشاف المبكر للمرض واستخدام دلائل إرشادية في المعالجة بالإضافة إلي استقطاب الدعم القومي .

## **Introduction:**

Cancer is a notorious disease claiming lives of over 7.6 million inhabitants of the globe in 2005, 70% of deaths occur in low and middle income countries<sup>1</sup>. Different sites of female genital system are affected by cancer and they differ in incidence, risk factors, clinical presentation, histology and treatment modalities. The major sites of genital malignancies in female are ovaries, uterus, cervix, vagina, and vulva.

Distribution of gynecological malignancies is very much different across different nations<sup>2</sup>. Diversity in distribution may be related to multi-factorial issues including people culture, education, health services, socioeconomic status and genetic factors. In developing countries generally all these factors are unfavorable and poor.

In Africa GMs are the leading cancers and cervix cancer is by far the most common. Cervical cancer is the second commonest women cancer worldwide with very high incidence and mortality in Africa and Latin America<sup>3</sup>. Cervical cancer incidence is not high in USA compared to Africa and Latin America<sup>4,5</sup>. More than 80% of world cervical cancer in 2002 occurred in developing countries with a fatality up to 85%<sup>6</sup>.

Incidence of cancer in Sudan is difficult to estimate due to lack of population-based cancer registry. The aim of this study is to estimate the burden of GMs in the Central Sudan and to look for the pattern of GMs in this region. Although this is a hospital-based study but it gives rough estimation about the magnitude and the general epidemiological features of GMs in Central and Eastern parts of the Sudan.

## **Method:**

This is a retrospective descriptive review carried out for all patients with GMs who presented to INMO during May 1999- April 2005 reviewing hospital records. This work was done by the team of a combined Gyne-oncology clinic (CGC) which was established in 2005. All new cases are usually seen by the CGC for staging and treatment planning. All records were located in the statistics and information department in INMO.

INMO is one of the two cancer centers available in Sudan, established in 1999, and it belongs to University of Gezira, which is located in Wadmedani city. Wadmedani lies on the west bank of Blue Nile about 188 kilometers south to the capital, Khartoum. It is the Capital of Al-Gezira State which is one of heavily populated states in Sudan (nearly 40 million inhabitants). The catchment areas includes, in addition to Gezira state, most of Central and Eastern States of the Sudan. INMO provides most of the known kinds of cancer treatments as well as palliative care for all cancer patients who are referred from different secondary and tertiary hospitals.

Parameters included in the analysis were patient age, residence, cancer topography, histology and stage. Cases diagnosed with choriocarcinomas were included in the analysis except for stage, due to its special mode of evaluation for treatment and prognostic criteria. Inclusion criteria covered all cases referred to INMO if they had been treated before or not. The only exclusion criteria were the cases that had been referred before or after study period.

SPSS soft ware was used for data entry and analysis. No record of GM was excluded from this review. The results are tabulated and presented in a simple percentage form.

## **Results:**

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A total of 273 records were found and all were reviewed. Most of cases were from the Gezira state accounting for 75.3% of all cases. Patients from rural areas were dominant in this study and represented 72.4% of cases.

### **Topography:**

The commonest site affected among all cases was the ovary which represented 38.5% of all cases. The cervix came in the second order of sites with (33.5%). Others in order of frequency were uterus (14.5%), and vulva (4%). No single case of vaginal cancer was seen. A separate entity originated in gestational Trophoblast is Choriocarcinoma, which constitute 8.4% of all cases.

### **Age:**

The Median age for ovarian cancer cases seen was 50 years of age, range was 12-85 years and the mean was 51. Median age for cervix was 55 years of age, age range was 25-95 years and the mean was 55.4 years. For uterine cancer the median age was 55 years, age range was 28-78 years and the mean was 54.3 years. The vulvar cancer mean age was 60 years and age range was between 40-80 years. Choriocarcinoma median age was 35 years, range was 18-45 years and the mean was 32.9 years. Patients' characteristics according to site are shown in table 1.

### **Histology:**

The commonest histology seen in ovarian malignancies was the epithelial type (82.2%); other very less common histology was germ cell tumors (5.6%). For the cervix the squamous cell carcinoma accounted for 91.3% of all cases and adenocarcinoma was seen in 6.5%. Adenocarcinoma in the uterus accounted for 75% of cases and Sarcoma was seen in 22.5%. Almost 96% of Vulva cancer cases were squamous cell cancer type.

### **Stage:**

Table 2 summarizes stage at presentation for ovary, cervix, uterus, and vulva cancers. In general the cases presented in late stages (III/IV) accounting for 58% of all cases. Cases without known stage were 10.8%. Less than one third of ovarian and cervical cancer cases present in early stages (I/II). Surprisingly, only 27.5% of uterine cancer cases present in early stage. Table 2 showed different stage groups.

## **Discussion:**

GMs are more common in developing than developed World, but still breast cancer precedes GMs in both worlds. In Sudan breast is by far the commonest female cancer and constitutes more than one third of all female cancers treated in INMO. Breast cancer is more frequent than all GMs collectively and exceeds one third of all women treated in INMO (from annual reports of statistic and information department- INMO)-Fig 1. GMs in this study, taken from cases treated at one center over 6 years, showed that they are less than what seen in Africa where cervical cancer constitutes about 15% of all women malignancies<sup>7</sup>. In this series of patients', ovarian malignancy was more dominant than cervical cancer, in contrast to the other only center for cancer in Sudan- Radiation and Isotopes Center- Khartoum (RICK), in which cervix cancer was found to precede ovarian cancer<sup>8</sup>. In Africa the cervix cancer is dominant as reported from countries like Nigeria, where cervix cancer is the commonest GMs<sup>9</sup>.

The ovarian cancer is the most frequent cancer in this region, the age is different compared to a developed country like UK where the incidence is low under 40 years-of age, but rises dramatically through fifth decade. The maximum incidence in UK occurs in 80-84-years old group<sup>10</sup>. In this study a quarter of the reviewed patients were below 40 years of age. The maximum incidence occurs in the 40-60-years old group. A reason for young age group may possibly be due to the short life span of Sudanese women (life expectancy 62 years) masking incidence in old ages. Potential genetic factors may play a role in explaining the high incidence in this young age group in the population of this region of Sudan. One should not exclude some environmental factors as well. Late presentation is not differing from that seen worldwide because of the nature of this disease (silent killer).

Cervix cancer is second to ovary in this series. Statistics from RICK, showed cervical cancer predominance, but it is again a hospital-based study<sup>8</sup>. Cervix cancer is the leading women cancer in Sub-Saharan Africa, Central America and South-central Asia preceded only by breast cancer<sup>7</sup>. Fifteen percent

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of female cancers in the developing countries are cervical while in developed world it constitutes only 3.6% of all cancers<sup>7</sup>. In North America, Europe and Australia the incidence is low but, before screening programme in 1960s and 1970s the incidence was similar to developing countries<sup>11</sup>. In China incidence is five times higher than developed countries and majority present with late stage of disease<sup>12</sup>. In Brazil the incidence is estimated at 26.28 cases per 100 000 women<sup>6</sup>. The lowest recorded rate of cervix cancer is 0.4 per 100.000 in Ardabil, Northwest Iran<sup>13</sup>.

Late presentation reflects the lack of screening in Sudan. The age pattern of cervix cancer in this study population was different from what reported in the literature. Younger age was seen in Brazil, where the mean age for cervix cancer was 37.4 years with a range of (14-91 years)<sup>5</sup>. Median ages, in some studies from United States and UK is 10 years lower than this series, and in India it is 20 years lower than this study population age<sup>14, 15</sup>. Cervix is less common than ovary in this region not because there is screening programme, but may be due to the conservative community in this part of Sudan, where sexual life is limited to married partners at most, almost all the inhabitants of central and eastern states of Sudan are Arab, Moslems, and share same traditions and customs. Studies considered cervix cancer as a sexual transmitted disease with human Papilloma virus being the major etiological factor<sup>15, 16, 17</sup>. The prevalence shown in this study for cervix is similar to Middle-East region that may be due to similarity of population culture.

Uterine cancer order of ranking in this series of patients is similar to reports from Western world, but the median age is lower. Uterine cancer constitutes 2% of all women cancers in USA and it ranks third in GMs, preceded by ovary and Cervix, with a median age of 63 years<sup>18</sup>. Strikingly cases in this series presented in late stages of disease unlike reports from the West where uterine cancer is considered one of the cancers which presents in early stages and mostly curable<sup>18</sup>. Post menopausal bleeding is an early symptom for endometrial cancer, but in this region of Sudan probably patients, patients' relative and possibly treating doctors tend not to take this warning sign seriously. Choriocarcinoma is not uncommon and affecting young age group with features similar to reports from other developing countries. It is a rare tumor in western countries; the incidence is 1 in 45,000 pregnancies. Higher incidence is reported from, Africa, Asia and South America. Majority of cases occur in women aged less than 35 years of age<sup>19</sup>. Carcinoma of the Vulva was the least common and this is similar to international data, we report median age at presentation lower than what was reported from Sweden<sup>20</sup>.

During the period of this study we couldn't come across a single case of vaginal cancer and this reflects it is an extremely rare disease in this region of Sudan.

All histological types of GMs were seen and they weren't different from usual known pattern in literature. Untagged patients explain the difficulties in management of GMs in Sudan. This is possibly due to the shortage of gynecological oncologists, the lack of advanced investigational service and management guidelines. There is a general agreement that combined clinics are the best way to manage cancer, it is worth mentioning that in INMO there is now a working combined GMs clinic since May 2006.

## **Conclusion:**

GMs are common in Sudanese female population and tend to present in late stages. Ovary cancer is the leading GMs in this region and affects young age group. Cervix cancer affects relatively older age group and is less common compared to the other parts of Sudan, Africa and Latin America. Introduction of screening programme and establishment of population -based cancer registry are recommended. Studies for identification of possible risk factors and treatment outcome are important.

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**Table (1) patients characteristics according to site.**

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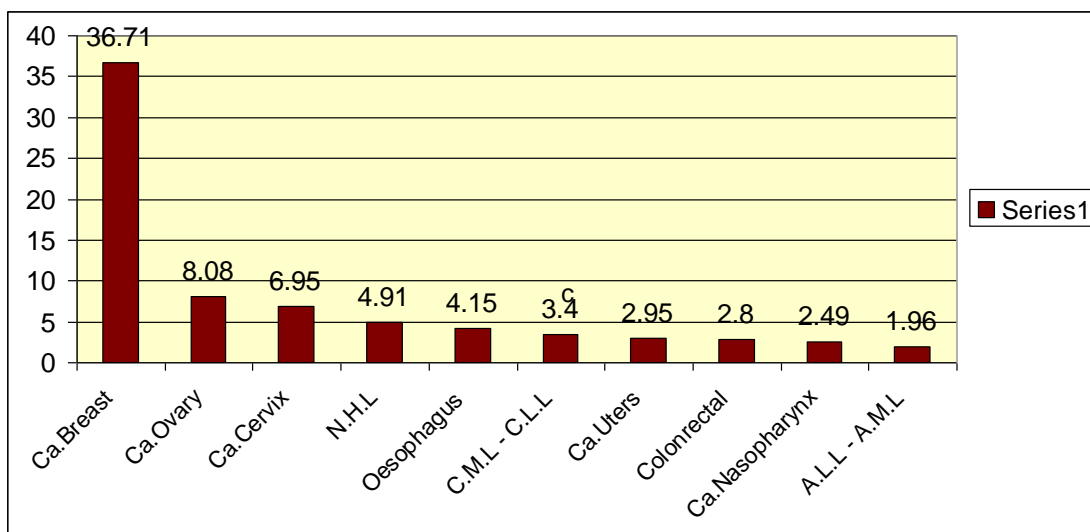
patients characteristic	Number (%)	Histology (%)
<b>Site</b>		
Ovary	107 (39.2)	Epithelial cancer (82.2)
Cervix	92 (33.7)	Squamous cancer (91.3)
Uterus	40 (14.7)	Adenocarcinoma (75)
Vulva	11 (4)	Squamous cancer (96)
Choriocarcinoma (GTT)*	23 (8.4)	
<b>Age</b>		
	Median	Mean
Ovary	50	51
Cervix	55	55.4
Uterus	55	54.3
Vulva	60	59.9
Choriocarcinoma	35	32.9

\* GTT = Gestational trophoblastic Tumors.

**Table 2: Stage groups of different sites.**

Site	Stage I/II %	Stage III/IV %	Unknown Stage %
Ovary	30.5	67.4	2.2
Cervix	32.7	57	10.3
Uterus	27.5	47.5	25
Vulva	36.4	27.3	36.4

**Fig (1): The commonest 10 female cancers- Annual report- 1999-2005 - (INMO)**



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