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Full Length Review Article

PATTERN OF GYNECOLOGICAL MALIGNANCIES AT TERTIARY CARE HOSPITAL NORTH WEST REGION OF PAKISTAN

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ABSTRACT

Gynecological malignancies carry a high mortality among women of all age groups not only in Pakistan but also worldwide. It has diverse pattern of distribution worldwide. According to different studies it has been seen that cervical cancer is one of the leading gynecological malignancy worldwide but various studies from Pakistan showed that ovarian cancer is the top most malignancy. As no statistical data regarding gynecological malignancies in Khyber Pakhtunkhwa is available, the purpose of this study was to know the pattern of gynecological malignancies in patients registered at IRNUM (Institute of Radiotherapy and Nuclear Medicine Peshawar). This retrospective study was carried out at IRNUM from 1st Jan 1994 to 31dec 2010. Clinical records of 4331 patients were evaluated. Information regarding age, marital status, parity, histopathological type, surgical record, tumor markers and radiological findings were recorded on specifically designed proforma. 4331 patients of gynecological malignancies constituted 5.69 % of all malignant tumors registered at IRNUM during 1994-2010 and 12.5% of all female malignancies at IRNUM. Ovarian cancer was the most frequent, comprising 42% of all gynecological malignancies. Most frequent histopathology was epithelial ovarian cancers constituted 87% of all ovarian cancers. Cervical cancer is the second most common malignancy in our analysis unlike to other studies in this region which shows it the most frequent. Squamous cell was the most frequent histopathology comprising 88%. The 3rd most common gynecological malignancy was endometrial carcinoma. Adenocarcinoma was the most frequent histopathology comprising 70.9%. Gestational trophoblastic tumors (GTT) were the fourth commonly occurring malignancy contributing 10% of all gynecological malignancies. Vulval and vaginal cancers were least occurring gynecological malignancies 4% and 2% respectively.

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INTRODUCTION

Gynecological malignancies carry a high mortality among women of all age groups not only in Pakistan but also worldwide. It has diverse pattern of distribution worldwide. According to different studies it has been seen that cervical cancer is one of the leading gynecological malignancy worldwide (Stewart *et al.*, 2003). In various studies from India, Nepal, and Ghana it is the cervical cancer which is the most frequent (Chhabra *et al.*, 2002; Kyari *et al.*, 2004; Hanoon *et al.*, 2007; Nkyekyer, 2000), but various studies from Pakistan showed that ovarian cancer is the top most malignancy (Nasreen, 2007; Aziz *et al.*, 2003). In Pakistan most of the ovarian cancer patients present in advanced stages which correspond to other international studies (Zang *et al.*,

2000; Cormio *et al.*, 2003; Cheng *et al.*, 2009; Door, 2002; Duong *et al.*, 2007). Endometrial carcinoma is the third most common malignancy correlates well with other studies from Pakistan. Vaginal and vulval malignancies are rare not only in Pakistan but also worldwide (Lee *et al.*, 2003; Dawood *et al.*, 2009). As no statistical data regarding gynecological malignancies in Khyber Pakhtunkhwa is available, the purpose of this study was to know the pattern of gynecological malignancies in patients registered at IRNUM.

MATERIALS AND METHODS

This retrospective study was carried out in Institute of radiotherapy and Nuclear Medicine Peshawar from 1st Jan 1994 to 31dec 2010. Clinical records of 4331 patients was evaluated. Information regarding age of the patient, marital status, parity, histopathological type, surgical record, tumor

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markers and findings and radiological findings were recorded on specifically designed proforma. All patients were staged according to FIGO staging (Sobin *et al.*, 2009). Data was fed to Microsoft word Excel 2007 version. Mean age with standard deviation (SD) for all patients was calculated. Percentage and frequency for individual malignancy and histopathology was calculated. Percentage and frequency of stages at presentation was also calculated.

RESULTS

4331 patients of gynecological malignancies constituted 5.69 % of all malignant tumors registered at IRNUM during 1994-2010 and 12.5% of all female malignancies at IRNUM. Overall frequency and percentage of malignant tumors involving different sites of female genital tract are shown in table 1. The mean age of patients with ovarian, cervical and endometrial cancers were 42±16, 52±13 and 55±12 years respectively.

Table 1. Demographic data of total Patients (n=4331)

Site	No. of patients	Percentage	Mean age with SD
Ovary	1828	42%	42±16 years
Cervix	1151	27%	52±13 years
Endometrium	659	15%	55±12 years
GTT	442	10%	27±9 years
Vulva	169	4%	57±19 years
Vagina	82	2%	46±12 years

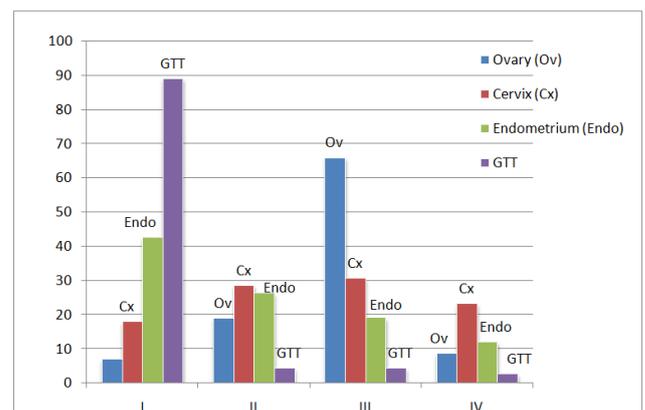


Fig. 2. Stage Wise Presentation

Majority of the patients presented in stage II and III, 28.5% and 30.5 respectively followed by stage IVA and I, 23.2% and 17.8% respectively. The 3rd most common gynecological malignancy was endometrial carcinoma. Adenocarcinoma was the most frequent histopathology comprising 70.9% followed by leiomyosarcoma. Most frequent stage of presentation was stage I (42.58%) followed by stage II (26.19%), stage III (19%) and stage IV (11.9%). Gestational trophoblastic tumors (GTT) were the fourth commonly occurring malignancy contributing 10% of all gynecological malignancies. Mean age of presentation was 27±9 years. The commonest GTT was invasive mole 71.42% followed by choriocarcinoma. Most of the patients presented in stage I (88.9%) followed by stage II (4.2%) stage III (4.3%) stage IV (2.6%). Vulval and vaginal cancers were least occurring gynecological malignancies 4% and 2% respectively. Most frequent histopathology was Squamous cell carcinoma in vulval cancers where as histopathology was variable in vaginal cancers comprising of squamous cell carcinoma, malignant melanoma and undifferentiated sarcoma. Most common stage of presentation was IVA in vulval cancers whereas stage II and III in vaginal cancers.

DISCUSSION

Ovarian cancers represent about 30% of all cancers of female genital tract worldwide (Lee *et al.*, 2003), but it was found to be the most frequently occurring gynecological malignancy comprising 42% of all female genital tract cancers in our analysis. It correlates well with other studies in Pakistan (Dawood *et al.*, 2009; Sobin *et al.*, 2009; Jamal *et al.*, 2006) and in the other regions of the world (Ibrahim Larbah *et al.*, 2009). The mean age was 42±16 years which correlate well with the study of Jamal S (Jamal *et al.*, 2006), where mean age for ovarian cancer is reported 46 years. This data also correlate with other studies in this region (Khan *et al.*, 2005). Most of the ovarian cancers in this analysis presented in advanced stage which correlate well with other studies (Nasreen, 2002; Zang *et al.*, 2000; Cormio *et al.*, 2003; Cheng *et al.*, 2009; Jamal *et al.*, 2006). In our opinion the reason for late presentation is that most of the patients at early stages are asymptomatic or present with very vague symptoms and no valuable screening program is available therefore patients present when they have advanced disease. According to world cancer report, cervical cancer is the most common cancer of

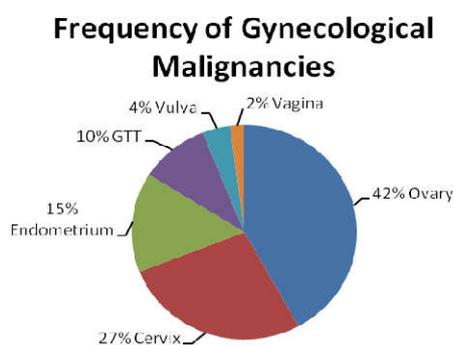


Fig. 1 Frequency of Gynecological Malignances

Ovarian cancer was the most frequent, comprising 42% of all gynecological malignancies. Most frequent histopathology was epithelial ovarian cancers constituted 87% of all ovarian cancers followed by germ cell tumors contributing 10% which is higher from generally reported incidence of 3% (Lee *et al.*, 2003). Most of the patients presented in locally advanced stage III (65.8%) followed by stage II (18.8%), stage IV (8.5%) and stage I (6.9%). Cervical cancer is the second most common malignancy in our analysis unlike to other studies in this region (Stewart *et al.*, 2003; Chhabra *et al.*, 2002; Kyari *et al.*, 2004; Hanoon *et al.*, 2007; Nkyekyer, 2000) which shows it the most frequent. Squamous cell was the most frequent histopathology comprising 88%, where as adenocarcinoma, adenosquamous carcinoma, and small cell carcinoma, clear cell carcinoma leiomyosarcoma were also reported.

female genital tract and about 470000 new cases are diagnosed each year (Stewart *et al.*, 2003). In some regions of the world cervical cancer is the top most common gynecological malignancy. The incidence is higher in developing countries but it has been declining in the last three four decades in most of the developed countries, predominantly due to effective cervical screening program (O'kyari *et al.*, 2004; Hanoon *et al.*, 2007). It is the leading cause of death from cancer among women in developing countries, where 80% cases occur and cause about 190,000 deaths each year (O'kyari *et al.*, 2004; Hanoon *et al.*, 2007; Nkyekyer, 2000). Nepal, Nigeria India, Afghanistan and most of the African countries all are developing countries and incidence of cervical cancer is more frequent there, because cancer is an under emphasized issue in these countries, partly because of the overwhelming burden of communicable diseases, due to poor hygienic condition and different social culture (Jacqueline Sherris *et al.*, 2001). India, Nepal, Ghana are non Muslim countries where circumcision is not done and sexual behavior is also different from Muslim which promote HPV infection and ultimately cervical cancer (Munoz *et al.*, 2002). Mean age in our study was 52±13 years which correlate with studies (Nasreen, 2002; Jamal *et al.*, 2006) but a study from china reported cervical cancer in younger age group (Huang *et al.*, 2007). Health maintenance program in this region in this age group should continue to include pelvic examination and Pap test screening. The most frequent stage of presentation was stage II correlating with national study (Nasreen, 2002).

Endometrial carcinoma is the third most common gynecological malignancy in our analysis, making 15% of all female cancers. These figures well correlate with other national and international studies which reported same or lower incident in Africa and Asia (Stewart *et al.*, 2003). The commonest histopathology was adenocarcinoma reported in all series. The mean age of presentation was 55±12 years correlate with study (Chhabra *et al.*, 2002). Most of the patients presented in stage I similar with other studies (Nasreen, 2002; Dawood *et al.*, 2009; Mandong and Ujah, 2003; Minar *et al.*, 2009; Kamikabeya *et al.*, 2010). The main reason for early detection is probably the per vaginal bleeding, which warrants early pelvic examination and diagnosis. The next commonest gynecological malignancy was gestational trophoblastic tumors constituting 10% of all cancers. The commonest GTT was invasive mole followed by choriocarcinoma. GTT were predominated in peak fertility age group and among patients of unfavorable sociodemographic status.

This correlate with other national and international studies (Zang *et al.*, 2000; Altieri *et al.*, 2003). Vulval cancers were comparatively uncommon occurring cancers making 4% of all gynecological malignancies. Squamous cell carcinoma was the most frequent histopathology which correlates well with other studies (Nasreen, 2002; Door, 2002; Dawood *et al.*, 2009; Baumann *et al.*, 2010; Duong *et al.*, 2007). The least frequent malignancy was vaginal cancer comprising 2% of all gynecological malignancy with histopathology predominantly Squamous cell carcinoma. The primary malignant melanoma of vagina is a very rare malignancy with less than 300 cases reported worldwide (Betschart *et al.*, 2007) other studies also suggest variable histopathological pattern of vaginal cancer.

Conclusions

- Ovarian epithelial cancers were the most common gynecological malignancy in middle aged women in our study contrary to western studies where cervical cancer was most common and most of the ovarian cancer patients presented in advanced stages.
- Cervical was found to be the second most common gynecological malignancy in contrast with western studies and most of the cases presented in locally advanced stages.
- Most of the endometrial cancer patients presented in early stages
- Vaginal and vulval cancers were the least common cancers similar to other studies.

Recommendations

- Developing strategy for early detection and screening of ovarian cancers
- Regular gynecological examination and pap smears in general population for early detection of cervical cancer.
- Primary prevention of cervical cancer by using vaccines, condoms, smoking avoidance and restriction to one sexual partner.

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