

## ORIGINAL ARTICLE

# OVARIAN CANCER: MOST FREQUENTLY SEEN GYNAECOLOGICAL MALIGNANCY IN ZIAUDDIN HOSPITAL, NORTH NAZIMABAD

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### ABSTRACT

**Background:** The prevalence of genital tract malignancies is rising worldwide making it one of the most common malignancies in females after breast cancer. Despite cervical cancer being the most commonly occurring cancer globally, a multitude of studies in Pakistan have identified ovarian cancer as the most commonly occurring malignant tumor. The morbidity and mortality rates from genital tract tumors are considerably higher in developing countries. In developed countries, screening tests for early diagnosis of a malignancy followed by effective treatment are readily available. The objective of this study is to study the pattern and relative frequency of the malignancies involving the genital tract among women admitted to Ziauddin Hospital in 2015.

**Methods:** The study is a retrospective, observational analysis of the case files of female patients admitted into Ziauddin University Hospital, North Nazimabad. The patients coming to the OPD have been followed for the last 3 years to check for the suspected presence of a genital tract malignancy.

**Results:** A total of 55 patients over the last three years were confirmed to have some form of genital tract malignancy. Ovarian cancer accounted for 49% of the outcome, with around 23.6% of the cases diagnosed at stages 3 and 4. Endometrial cancer was the second most common cancer, with 27.2% being diagnosed at stage 1. Cancers of the cervix and vulva accounted for 3.6% and 1.8% respectively. No cancer of the vagina was documented.

**Conclusion:** The most common genital tract malignancy in female patients at Ziauddin University Hospital is ovarian cancer, in contrast to the vast majority of developing countries where cervical cancer is the leading cause of genitourinary malignancies.

**Keywords:** Cancer of Cervix; Endometrial Carcinoma; Malignancy; Ovarian Cancer.

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### INTRODUCTION

Multiple studies have confirmed that genital tract malignancies are the second most common cancer in females around the world, after breast cancer<sup>1</sup>. The most important types of genital tract neoplasms include cervical, ovarian, uterine, vaginal, vulvar and gestational trophoblastic neoplasia. Gynaecological malignancies are a significant cause of morbidity and mortality in women throughout the world, where cancer of the cervix is the leading cause of death in developing countries. In countries such as India, 800,000 new cases are diagnosed every year, with cancer of the

cervix being the commonest and a vast majority of the diagnosed cancers are discovered at a late stage<sup>1,2</sup>.

The prevalence of endometrial cancer in developed countries is a consequence of the increased incidence in obesity, attributed primarily to increased estrogen-dependent endometrial stimulation<sup>2</sup>. There is a difference in the mortality rates directly related to genital tract cancers, between developing and developed countries; developed countries have a significantly lower mortality rate<sup>3</sup>.

Developing countries have higher genital tract

cancer mortality in comparison to developed countries<sup>4</sup>. This can be attributed to unavailability of regular screening checks (for instance, cervical screening programs) for individuals at high risk of developing cancer, limited access to high-quality health care services and lack of functional referral systems resulting in cancers being diagnosed at a late stage<sup>4,7</sup>.

Cervical cancer is the most common malignancy of the genital tract in developing countries, while ovarian cancer is seen more commonly in developed countries<sup>4</sup>. Cervical cancer, though preventable, causes a high mortality rate in countries like Pakistan and India for the same reasons mentioned above. This is particularly evident from the fact that 90% of cervical cancer deaths occur in developing countries, with 15.5% of the cases taking place in India<sup>5</sup>. Vulvar and vaginal cancers are also caused by HPV infection, and, although rare, they do cause very high rates of mortality if not treated by HPV vaccines, which have proved to be very effective in prevention<sup>6</sup>.

The objective of this study was to record the pattern and relative frequency of the malignancies involving the genital tract among women admitted to Ziauddin Hospital in 2015. It is hoped that by knowing about the prevalence of female genital tract tumors, efforts will be stepped up to significantly reduce the mortality rates by developing proper screening and diagnostic techniques followed by prompt effective treatment.

**METHODS**

This study was carried out in the Gynaecology and

Obstetrics unit at Ziauddin Hospital, North Nazimabad from 2015 to 2017. This is a retrospective, observational analysis that aims to determine the proportion of patients who were diagnosed with a malignancy of the genital tract. Consecutive sampling technique was used in this study. Over the last 3 years, a total of 21765 patients presented to the Gynaecology and obstetrics clinic in North Nazimabad, with 55 diagnosed with Gynaecological malignancies of one type or another. The following observations and details for each patient were documented at the time of visit: name, age, parity and presenting complaints (such as irregular vaginal bleeding, post-menopausal bleeding, gastrointestinal symptoms, abdominal distension, and abdominal mass).

After diagnosis of a malignancy, following details were recorded to distinguish one neoplasm from another: stage at diagnosis, site of malignancy, histopathology and the procedure done to treat the condition.

**RESULTS**

According to available clinical data, the most common site of malignancy was ovaries, reported in 26 individuals (47.3%), most common in 51-60 years age group, followed by endometrium (n=24; 43.6%) also more common in the same age group as ovarian cancer. In 2015, the most commonly reported gynaecological cancer at Ziauddin Hospital was endometrial cancer. In 2016, the most commonly reported genital tract malignancy was ovarian cancer, while in 2017, an approximately equal number of both endometrial and ovarian cancers were reported (Figures 1 and 2).

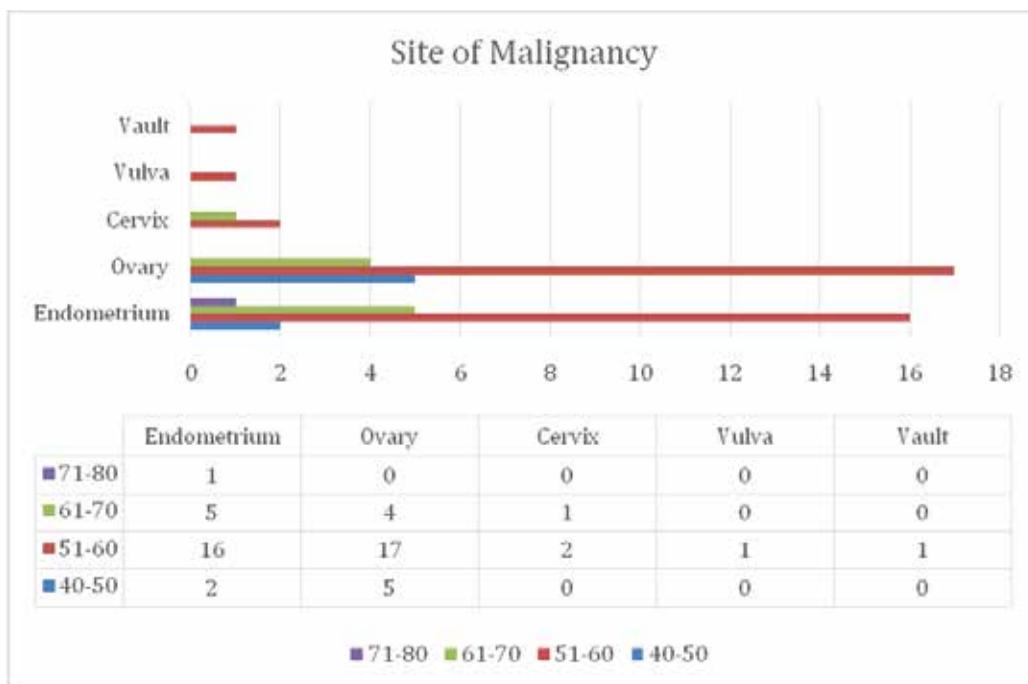
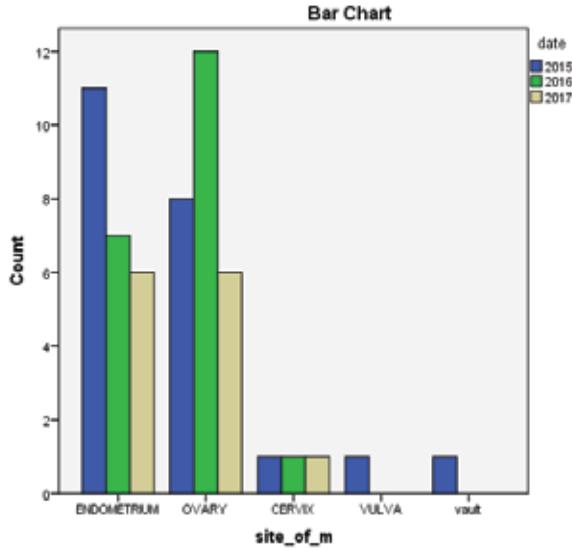
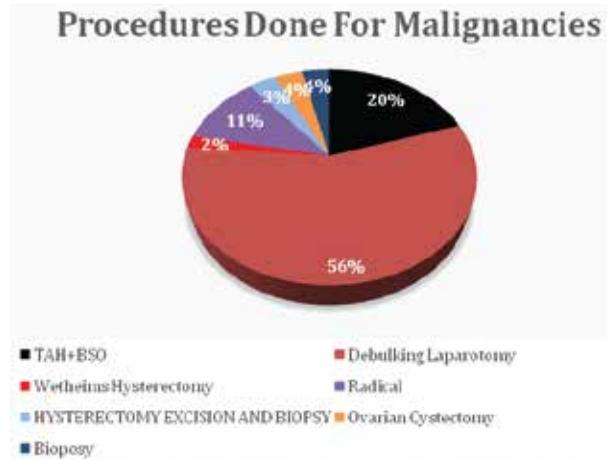


Figure 1: Distribution of site of malignancy and age groups in the study population.



**Figure 2: Yearly distribution of gynecological malignancies.**

Almost all individuals required surgery with the most frequently performed was debulking laparotomy (56.4%) followed by total abdominal hysterectomy with bilateral salpingo-oophorectomy (20%) (Figure 3).



**Figure 3: Procedures done for malignancies.**

Histologically, the gynaecological cancers were of diverse types, with endometrioid adenocarcinoma being most common (n=15; 27.2%) followed by serous carcinoma reported in 9 individuals (16.3%). In addition, there were no differences in age between the individuals with different histological types of gynaecological cancer (Table 1).

**Table 1: Relationship between age and histological type.**

Histopathology	Age in years	
	41-50	51-60
Adult granulosa cell tumor	1	1
Clear cell carcinoma	0	3
Endometrioid adenocarcinoma	1	13
Extra ovarian peritoneal	0	1
Serous papillary carcinoma	2	0
Keratinizing invasive squamous cell carcinoma	0	3
Mixed mullerian tumor	0	4
Malignant epithelial tumor	0	0
Metastatic adenocarcinoma	0	1
Mucinous carcinoma	2	1
Poorly differentiated	0	2

Our study revealed that a total of 55 patients with genital tract malignancy came to Ziauddin Hospital, North Nazimabad Campus from 2015 to 2017. The average age of 67.3% individuals reporting to

outpatient clinic were between 51-60 years (Table 1). Approximately 38.2% individuals (n=21) reporting to gynaecological outpatient clinic were nulliparous.

## DISCUSSION

Multiple studies have confirmed that breast cancer is a more commonly diagnosed malignancy in females around the world and that breast neoplasms cause multiple deaths. While breast cancer occurs more frequently, cancers of the genital tract have a higher associated morbidity and mortality, most likely because an overwhelming majority is diagnosed at an advanced stage<sup>7</sup>. The most common site of malignancy in the female genital tract according to our study is ovarian cancer, which contrasts with findings in other researches, whereby in developing countries, cervical cancer is more frequently seen. It commonly manifests clinically as inter-menstrual vaginal bleeding, post-menopausal vaginal bleeding, post-coital vaginal bleeding, offensive vaginal discharge and lower abdominal pain<sup>7</sup>.

About 85% of cervical cancer cases occur in women living in low-income countries and around 12% of deaths related to cervical neoplasms are found in Latin and Central America<sup>8,9</sup>. Africa, particularly Guinea, has the highest incidence of cervical cancer deaths, usually occurring in women between the ages of 18-80 years<sup>10</sup>. Reasons for a high prevalence of cervical cancer in women are due to lack of education and public enlightenment on the importance of routine screening and treatment of premalignant lesions of the cervix<sup>11</sup>. In developed countries the mortality rates are lower than the developing countries as evidenced by the fact that Netherlands, Switzerland, the United Kingdom and the United States of America have incidence rates of 5.4, 4.0, 7.2 and 5.7 per 100000 respectively and mortality rates of 1.5, 0.9, 2.0 and 1.7 per 100000 respectively. Incidence rates in the UK have decreased dramatically since the late 1980s following the introduction of the national NHS cervical screening programs<sup>12</sup>.

Our study is in accord with the researches that have been conducted in relation to genital tract malignancies in Pakistan. These state that ovarian cancer is the most common gynaecological malignancy. The proportion of ovarian cancers was the highest (22/35; 62.86%) in a study undertaken at a military hospital in Rawalpindi<sup>13</sup>.

Ovarian cancer, unlike, cervical cancer does not have excellent primary and secondary care. Our results support the widespread observation that ovarian cancer tends to be diagnosed at a much later stage than cervical cancer<sup>14,15</sup>. This can be attributed to the fact that cervical cancer is picked up early on Pap smear. This allows prompt vaccination to take place and eradicate the potential for any symptoms, which characterize a malignant state, to develop. Ovarian cancer does not have any screening test that can identify the malignancy in its earliest stage; instead it is diagnosed by

ultrasound, pelvic examination, CA 125 levels and surgery<sup>16</sup>.

In our study, 13 out of the 26 cases of ovarian cancer were diagnosed at stages III and IV, proving that it mostly gets diagnosed at an advanced stage with metastasis to distant lymph nodes. This can be attributed to the fact that early stage ovarian cancer has no symptoms, while symptoms such as abdominal swelling, weight loss, pelvic pain, frequent urination and loss of appetite are typical of late stage ovarian cancer<sup>17</sup>.

Endometrial cancer was reasonably prominent in our study. Risk factors for this malignancy include old age, obesity, diabetes mellitus, hypertension, nulliparity, early menarche, chronic anovulation, late menopause, unopposed endogenous and exogenous oestrogens and tamoxifen therapy<sup>18</sup>. Endometrial sampling ensures that any potential cancer is detected after a patient most commonly reports with complaints of abnormal menstrual bleeding<sup>19</sup>.

Vulvar carcinoma and vaginal cancer were rare according to our study, with only 2 patients diagnosed with vulvar cancer and none having vaginal cancer. These cancers occur in elderly women mostly and have a poor prognosis, but can be treated with a combination of external beam radiotherapy and brachytherapy, and with surgical resection for a select group of patients<sup>20</sup>. Our study does not accurately reflect patterns in studies conducted around the world whereby occurrences of vulvar and vaginal malignancies do occur and cause significant mortality<sup>21</sup>.

A vast majority of the malignancies in our study belonged to the 51-60 years age group, thereby confirming that these malignancies are more common in women who are post-menopausal and that age is a major risk factor in developing cancer. As far as ovarian cancer is concerned, earlier age of menarche has been mentioned as a possible reason for increased risk of cancer<sup>22</sup>.

Debulking laparotomy is a procedure was most commonly selected for a tumor that shows an extensive growth. Debulking is very important when ovarian cancer has already spread throughout the abdomen at the time of surgery. The aim of debulking surgery is to leave behind no visible cancer and therefore improve prognosis, as prognosis is dependent on the amount of tumor resected<sup>22</sup>.

According to our study, the most common histologic finding was adenocarcinoma. This is the most frequently seen histologic observation in a study conducted in Sudan, whereby 77% of the 127 cases were of adenocarcinoma; thereby ensuring our results are consistent with findings from other studies<sup>22</sup>.

## CONCLUSION

This study confirms that ovarian cancer is the most commonly diagnosed gynaecological malignancy in our setup. This is in contrast to the vast majority of developing countries where cervical cancer is the leading cause of genitourinary malignancies.

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## CONFLICT OF INTEREST

There was no conflict of interest among the authors.

## ETHICS APPROVAL

The study has been approved by the Ethical Review Board of the institution name.

## PATIENTS CONSENT

Verbal and written informed consent was obtained from all patients.

## AUTHORS CONTRIBUTION

SC conceived the idea, did bench work and supervise in manuscript; HR helping in collection of data and statistical analysis; AN helped in bench work and wrote the manuscript; RH overall supervised the project and finalized the manuscript.

## REFERENCES

1. Chaudhary S, Singhal SR, Latika, Gupta A. Study of sociodemographic profile and pattern of gynaecological malignancies in a tertiary care center. *Int J Reprod Contracept Obstet Gynecol.* 2016; 5:2640-3.C
2. Mohanapriya D. Study on pattern of gynaecological malignancies at Saveetha Medical College and Hospital, Tamil Nadu, India. *Int J Reprod Contracept Obstet Gynecol.* 2018;7(8):3344.
3. Forman D, de Martel C, Lacey CJ, Soerjomataram I, Lortet-Tieulent J, Bruni L, Vignat J, Ferlay J, Bray F, Plummer M, Franceschi S. Global burden of human papillomavirus and related diseases. *Vaccine.* 2012;30:F12-23.
4. Buchanan TR, Graybill WS, Pierce JY. Morbidity and mortality of vulvar and vaginal cancers: Impact of 2-, 4-, and 9-valent HPV vaccines. *Hum Vaccin Immunother.* 2016;12(6):1352-6.
5. Mwaka AD, Orach CG, Were EM, Lyratzopoulos G, Wabinga H, Roland M. Awareness of cervical cancer risk factors and symptoms: cross-sectional community survey in post-conflict northern Uganda. *Health Expect.* 2016;19(4):854-67.
6. Manzoor H, Naheed H, Ahmad K, Iftikhar S, Asif M, Shuja J, Sultan N, Ali I, Inayatullah S, Khan YH. Pattern of gynaecological malignancies in south western region of Pakistan: An overview of 12 years. *Biomed Rep.* 2017;7(5):487-91.
7. Lopez MS, Baker ES, Maza M, Fontes-Cintra G, Lopez A, Carvajal JM, Nozar F, Fiol V, Schmelzer KM. Cervical cancer prevention and treatment in Latin America. *J Surg Oncol.* 2017;115(5):615-8.
8. Irabor GI, Omotoso AJ, Isiwele EM, Nnoli MA, Omoruyi KA. Histopathological study of cervical cancer specimen at the university of Calabar teaching hospital, Calabar. *Med Res Chron* 2017; 4(5):582-90.
9. Okeke TC, Onah N, Ikeako LC, Ezenyeaku CC. The frequency and pattern of female genital tract malignancies at the University of Nigeria Teaching Hospital, Enugu, Nigeria. *Ann Med Health Sci Res.* 2013;3(3):345-8.
10. Rahman M, Mia AR, Haque SE, Golam M, Purabi NS, Choudhury SA. Beating Cervical Cancer in the Developed Countries: A Dream or a Reality?. *Curr Topics Public Health* 2013. IntechOpen.
11. Mohyuddin S, Sultana NI, Butt KA, Mohyuddin A. Patterns of gynaecological malignancies at a tertiary care hospital. *Pak J Med Health Sci.* 2012;6:47.
12. Basile S, Angioli R, Mancini N, Palaia I, Plotti F, Panici PB. Gynecological cancers in developing countries: the challenge of chemotherapy in low-resources setting. *Int J Gynecol Cancer.* 2006; 16(4):1491-7.
13. Mishra K. Gynaecological malignancies from palliative care perspective. *Indian J Palliat Care.* 2011;17(Suppl):S45.
14. Doubeni CA, Doubeni AR, Myers AE, Doubeni AR. Diagnosis and Management of Ovarian Cancer. *Am Fam Physicians.* 2016 Jun 1;93(11).
15. Goff B. Symptoms associated with ovarian cancer. *Clin Obstet Gynecol.* 2012;55(1):36-42.
16. Yousaf S, Shaheen M, Rana T. Frequency of endometrial carcinoma in patients with postmenopausal bleeding. *Ann King Edward Med Uni.* 2010;16(4):290.
17. Chambers JT, Chambers SK. Endometrial sampling: when? where? why? with what?. *Clin Obstet Gynecol.* 1992;35(1):28-39.
18. Carter JS, Downs LS. Vulvar and vaginal cancer. *Obstet Gynecol Clin.* 2012;39(2):213-31.
19. Kroeber ES, Mathewos A, Wondemagegnehu T, Aynalem A, Gemechu T, Piszczan S, Timotewos G, Addissie A, Wienke A, Unverzagt S, Thomssen C. Vulvar cancer in Ethiopia: A cohort study on the characteristics and survival of 86 patients. *Med.* 2018;97(9).
20. Gong TT, Wu QJ, Vogtmann E, Lin B, Wang YL. Age at menarche and risk of ovarian cancer: a meta-analysis of epidemiological studies. *Int J Cancer.* 2013;132(12):2894-900.

21. Ng LW, Rubin SC, Hoskins WJ, Jones WB, Hakes TB, Markman M, Reichman B, Almadrones L, Lewis Jr JL. Aggressive chemosurgical debulking in patients with advanced ovarian cancer. *Gynecol Oncol.* 1990;38(3):358-63.

22. Kheiri SA, Kunna A, Babiker AY, Alsuhaibani SA, Ahmed RY, Alsammani MA. Histopathological Pattern and Age Distribution, of Malignant Ovarian Tumor among Sudanese Ladies. *Open Access Maced J Med Sci.* 2018;6(2):237.

