

## **Histopathological Study of Gynaecological Malignancies in Tertiary Care Centre**

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**Conflicts of Interest:** Nil

### **Introduction**

Gynecologic cancers form a huge burden of morbidity and mortality around the world. Data available from various centres worldwide are indicative of vast regional variability in incidence, common sites of occurrence, age and stage of presentation<sup>1</sup>.

Gynaecological malignancies are a group of different malignancies which include ovarian, endometrial, cervical, and vaginal and vulva cancers<sup>2</sup>.

Cervical carcinoma is the second most common cancer among women in India, with the first being breast carcinoma<sup>3</sup>. Cervical cancer is the 2nd leading female cancer in India with 122,844 new cases diagnosed annually and about 67,477 cervical cancer deaths annually<sup>4</sup>.

Ovarian tumors are notorious silent killers as they escape attention in early stage due to their anatomical and are often not noticed until they have achieved a huge size<sup>1</sup>.

Endometrial (uterine) cancer is the 6th most common cancer in women worldwide & leading genital malignancy in United States & other developed nations<sup>5</sup>. Endometrial carcinoma and vulval/ vaginal carcinoma are usually the malignancies that arise mainly in perimenopausal and postmenopausal women, the peak incidence is in 55 to 65 age group and therefore add to the mortality significantly<sup>2,4</sup>. The location metabolic syndrome (MS) (also known as syndrome X or dysmetabolic syndrome) is a confluence of clinical risk factors that tend to occur together for cardiovascular disease and type 2 diabetes and comprises of a growing problem around the world. Metabolic syndrome (MS) is a clustering of at least three of the five following medical conditions: central obesity, high blood pressure, high blood sugar, high serum triglycerides, and low serum high-density lipoprotein (HDL)<sup>6,7</sup>. These conditions are commonly referred to as the Metabolic Triad of Endometrial Cancer<sup>7</sup>.

Age and parity are known to affect the incidence of Gynaecological cancers. Women of high parity have relatively low risk of developing endometrial and ovarian cancers, while multiparity is associated with increased risk of cervical carcinoma<sup>6</sup>.

Clinical history and examination are the first and the most important step in the diagnosis of malignancy. The gold standard for diagnosis of any malignancy is tissue biopsy and the stage at presentation is the most important determinant of survival in cancer<sup>2</sup>. Finally, they should confirm any clinical suspicion of malignancy by various diagnostic methods which would further help to know the type of cancer, the extent (staging) of cancer, treatment options and prognosis, as well as follow-up evaluation. Trials to improve survival from cancer require more accurate staging and diagnosis. In addition to that, identification of the significant prognostic factors in order to recognize the low- and high-risk groups of patients may also help (Tropé and Makar, 1991)<sup>2</sup>.

Most of the cervical, vagina and vulval cancers are squamous cell carcinomas histopathologic ally and are radio sensitive tumors, whereas most of ovarian and endometrial cancers are adenocarcinomas, being less sensitive to radiation<sup>1</sup>. Detailed history and proper clinical examination of every female coming to Gynaecological out-patient department must be done to rule out any Gynaecological malignancy. Every suspected case to be confirmed by biopsy of tissue concerned, as gold standard of diagnosis of any malignancy is tissue biopsy<sup>1,2</sup>.

Lack of reliable screening methods change in the life style and diet pattern may be responsible for the increasing ovarian and endometrial cancers. Increasing diabetes, obesity, sedentary life style, early menarche

and late menopause may be some of the reasons for the rising incidence of endometrial cancers. Mortality due to endometrial cancer is less as the stage at presentation is early which is amenable to treatment. Mortality due to ovarian cancers is high, as the symptoms of ovarian malignancy are nonspecific, and the stage is advanced, by the time women presents to the clinician<sup>5</sup>.

**Keyword:** Clinical, Treatment, Adenocarcinomas

### **Aims and Objectives**

The objective of this study was to study demographic, clinical and histopathological profile of patients presenting with Gynaecological malignancy. And to study presenting symptoms and pattern of Gynaecological malignancies in them.

### **Materials and Methods**

**Study design:** Retrospective study

**Place and duration of study:** Dept. of Pathology between a period of 2018 May and 2020 September.

**Ethical approval:** This study was approved by the ethical committee

**Inclusion criteria:** All gynecological malignancies

**Exclusion criteria:** none

**Statistical analysis:** Data was entered in Excel and analyzed using SPSS software

The characteristics of patient (age, clinical history, clinical presentation). Tumor histopathology and stage were reported.

### **Review of literature**

Cervical carcinoma is the second most common cancer among women in India, with the first being breast carcinoma<sup>8</sup>. Cervical cancer is the 2nd leading female cancer in India with 122,844 new cases diagnosed annually and about 67,477 cervical cancer deaths annually<sup>9</sup>. Risk factors of cervical cancer are early marriage, early child birth, multiparity, poor genital

hygiene, chronic pelvic infection with agents causing sexually transmitted diseases<sup>10</sup>. Squamous cell carcinoma of the cervix was the most common histological type seen in this study group. The commonest histological type of endometrial cancer was adenocarcinoma<sup>11</sup>.

In the developed countries, successful implementation of prevention and screening programme has decreased both incidence and mortality of cervical cancer<sup>12</sup>. Barriers to effective screening programme in country like India include a lack of awareness about the disease among the general population coupled with the geographical and economic inaccessibility to medical care. Its occurrence is related to the human papillomavirus (HPV). HPV infection is transmitted through sexual activity and the possibility of transmission is increased with early stage of initiation of sexual activity, multiple sexual partners and high-risk sexual partner. The highest prevalence of genital tract cancer in underdeveloped countries is due to lack of awareness, risky sexual behaviour and absence of population-based screening procedure especially for cervical cancer<sup>11</sup>. But, in developing countries, over 80% of women with cervical cancer are still diagnosed at an advanced stage, which is significantly associated with poor prognosis<sup>12</sup>.

Ovarian tumors are notorious silent killers as they escape attention in early stage due to their anatomical location and are often not noticed until they have achieved a huge size<sup>1</sup>. The present study was undertaken to analyse the clinical profile and histologic pattern of ovarian tumors<sup>1</sup>. And hence the most lethal of all Gynecologic malignancies. Despite aggressive surgery and chemotherapy, the prognosis for these women is poor, with a 5-year survival rate of less than 30%. This poor outcome is due in part to the lack of effective prevention

and early detection strategies: when diagnosed at an early stage, the survival rate is approximately 85– 90%. Thus, prevention and early detection are key to overcoming this disease<sup>13</sup>. With the exception of oral contraceptives, there are no successful chemo-preventive agents available. Bilateral oophorectomy has also been shown to reduce disease incidence, but the procedure has several drawbacks in terms of women's health<sup>1,13</sup>.

Existing screening techniques (CA125, transvaginal ultrasound) have not been demonstrated to reduce morbidity or mortality. Thus, better prevention, detection and screening methods are urgently needed. As well, because of the virulent and usually fatal nature of the disease, most women with ovarian cancer live with fear of recurrence, which happens in about 85% of cases. Current treatments offer little hope and survival has remained virtually unchanged for almost three decades. New methods to prevent, detect and treat recurrence are urgently needed<sup>10,13</sup>.

With advances in molecular biology and the emergence of new technologies, scientists are gathering remarkable knowledge about the genetic and biologic basis of ovarian cancer carcinogenesis. Such knowledge opens the door to new strategies for prevention, early detection and treatment of the disease<sup>13</sup>. Importantly, it allows for the development of “personalized medicine,” wherein prevention, detection and treatment modalities are aimed at the specific molecular mechanisms of an individual tumor and its microenvironment, as well as at the specific genetic and biologic profile of the host. Science stands on the precipice of a new era for making profound progress in ovarian cancer research<sup>1</sup>. Ovarian tumors represent a range of pathologic lesions ranging from benign mass through tumors of borderline malignant potential to invasive cancers. In most population-based

registries in India, ovarian cancer is the third leading site of cancer among women, trailing behind cervix and breast cancer<sup>1,13</sup>. Ovarian cancer has emerged as one of the most common malignancies affecting women in India and has shown an increase in the incidence rate over the years. The lack of specific symptoms, effective screening and early diagnostic techniques make ovarian cancer a highly deadly malignancy. Majority of the ovarian cancers are epithelial cancers<sup>1</sup>.

Endometrial (uterine) cancer is the 6th most common cancer in women worldwide & leading genital malignancy in United States & other developed nations<sup>6</sup>. Endometrial carcinoma and vulval/ vaginal carcinoma are usually the malignancies that arise mainly in perimenopausal and postmenopausal women, the peak incidence is in 55 to 65 age group and therefore add to the mortality significantly<sup>2,4</sup>. The metabolic syndrome (MS) (also known as syndrome X or dysmetabolic syndrome) is a confluence of clinical risk factors that tend to occur together for cardiovascular disease and type 2 diabetes and comprises of a growing problem around the world. Metabolic syndrome (MS) is a clustering of at least three of the five following medical conditions: central obesity, high blood pressure, high blood sugar, high serum triglycerides, and low serum high-density lipoprotein (HDL)<sup>9,14</sup>. These conditions are commonly referred to as the Metabolic Triad of Endometrial Cancer<sup>14</sup>.

Age and parity are known to affect the incidence of Gynaecological cancers. Women of high parity have relatively low risk of developing endometrial and ovarian cancers, while multiparity is associated with increased risk of cervical carcinoma<sup>6</sup>.

Fallopian tube cancer was first described 1847. Since then, over 2000 cases have been reported in literature.

Fallopian tube carcinoma is typically an incidental diagnosis in patients undergoing an exploratory laparotomy for a presumed ovarian malignancy<sup>16</sup>.

Clinical history and examination are the first and the most important step in the diagnosis of malignancy. The gold standard for diagnosis of any malignancy is tissue biopsy and the stage at presentation is the most important determinant of survival in cancer<sup>2</sup>. Finally, they should confirm any clinical suspicion of malignancy by various diagnostic methods which would further help to know the type of cancer, the extent (staging) of cancer, treatment options and prognosis, as well as follow-up evaluation. Trials to improve survival from cancer require more accurate staging and diagnosis. In addition to that, identification of the significant prognostic factors in order to recognize the low- and high-risk groups of patients may also help (Trope and Makar, 1991)<sup>2</sup>.

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Lack of reliable screening methods change in the life style and diet pattern may be responsible for the increasing ovarian and endometrial cancers. Increasing diabetes, obesity, sedentary life style, early menarche and late menopause may be some of the reasons for the rising incidence of endometrial cancers<sup>5</sup>. Mortality due

to endometrial cancer is less as the stage at presentation is early which is amenable to treatment. Mortality due to ovarian cancers is high, as the symptoms of ovarian malignancy are nonspecific, and the stage is advanced, by the time women presents to the clinician<sup>5</sup>.

**Results**

The study period is from January 2017 to January 2020. A total of 126 patients of Gynaecological malignancies

were studied. In our study, most of the patients belonged to age group of 51-60 years (Table 1). Out of total patients, 39.47% presented with complaints of post-menopausal bleeding, 23.15% patients presented with excessive white discharge, 14.73% of patients had abdominal distension, 8.421% had history of contact bleeding, 6.31% of patients complained of pain abdomen while 5.78% patients had menstrual irregularities.

Table 1: Distribution of Gynaecological malignancies according to age of patient.

Age (in Years)	Cervix	Ovary	Endometrium	Vagina	Vulva	Fallopian tube
21-30	4	2	0	0	0	0
31-40	10	8	0	1	1	0
41-50	18	4	7	1	0	1
51-60	22	9	6	2	1	1
61-70	8	11	1	1	0	0
>71	2	0	0	0	0	0

Table 2: Distribution of gynaecologic malignancies according to presenting complaints

Presenting complaints	Cervix	Ovary	Endometrium	Vagina	Vulva	Fallopian tube
Post-menopausal bleeding	50	0	10	1	0	0
Abdominal distention	0	18	0	0	0	0
Whitish vaginal discharge	34	0	0	1	0	0
Pain abdomen	0	10	0	0	0	0
Menstrual irregularities	3	1	3	0	0	1
Vulval growth	0	0	0	0	1	0

Table 3: Histological types of Gynaecological cancers (n=126)

Site of Malignancy	Histology	Frequency
Ovary	Serous cystadenocarcinoma	30(23.80%)
	Mucinous cystadenocarcinoma	16(12.69%)
	Dysgerminoma	1(0.79%)
	Immature teratoma	1(0.79%)
	Granulosa cell tumor	1(0.79%)
	Fibro thecoma	2(1.58%)
Cervix	Squamous cell carcinoma	35(27.78%)
	Adenocarcinoma	2(1.58%)

Endometrium	Endometroid Adenocarcinoma	26(20.63%)
	Myometrial tumors	4(3.17%)
	Serous Papillary	3(2.38%)
Vagina	Squamous cell carcinoma	1(0.79%)
Vulva	Verrucous carcinoma	1(0.79%)
Fallopian Tube	Adenocarcinoma	1(0.79%)

Table 4: Distribution of ca cervix patients according to FIGO staging. (n=33)

Clinical stage of carcinoma cervix		Number of Patients	Percentage
Stage I	I a	1	3.03%
	I b	1	3.03%
Stage II	II a	11	33.33%
	II b	18	54.54%
Stage III		1	3.03%
Stage IV		1	3.03%
Total		33	100%

Table 5: Stage at presentation and histologic subtypes of gynaecologic malignancies. Stage according to FIGO classification

Stage	Cervix			Ovary				Uterus				Vulva	Vagina	FT
	SCC	Adenocarcinoma	Total	Epithelial	Germl cell	Stromal	Total	Epithelial	Mesenchymal	Others	Total			
1	10	1	11 (8.73%)	30	2	2	34 (26.98%)	15	2	2	19 (15.07%)	1 (0.79%)	0	0
2	9	1	10 (7.93%)	9	1	1	11 (8.73%)	6	1	0	7 (5.56%)	0	1 (0.79%)	0
3	11	0	11 (8.73%)	11	1	2	15 (11.90%)	5	1	1	7 (5.56%)	0	0	1 (0.79%)
4	1	0	1 (0.79%)	1	1	0	2 (1.58%)	0	0	0	0	0	0	0
NOS	0	0	0	1	0	0	1 (0.79%)	0	0	0	0	0	0	0

Fig 1: Adenocarcinoma of Fallopian tube, H&E, 4X

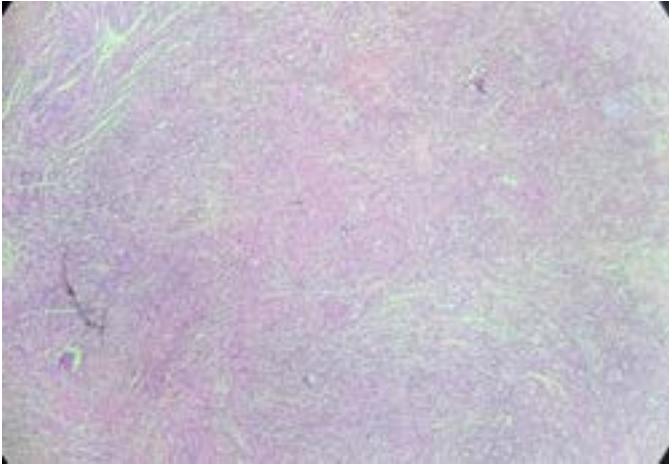


Fig 4: Cervical Squamous cell carcinoma, H&E, 10X

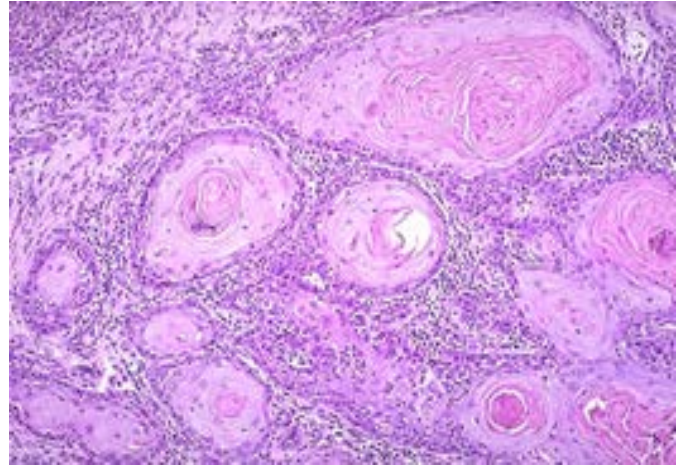


Fig 2: Leiomyosarcoma, H&E, 10X

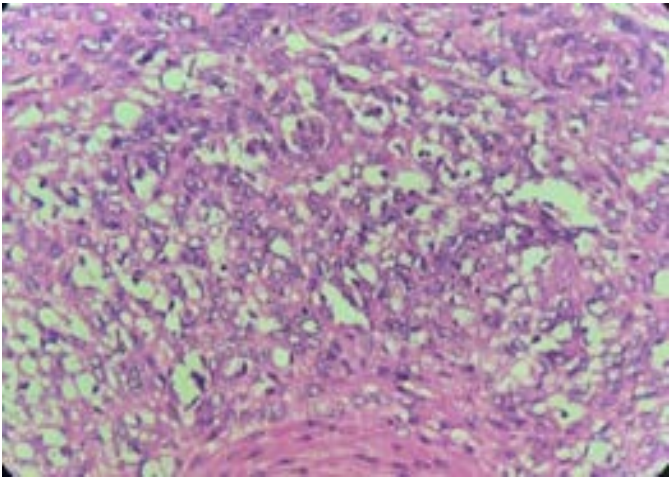


Fig 5: Endometrial Carcinoma, H&E, 40X

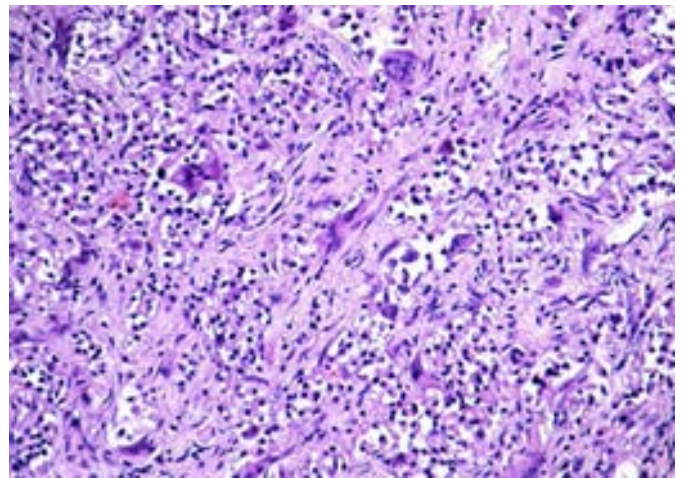


Fig 3: Dysgerminoma, H&E, 4X

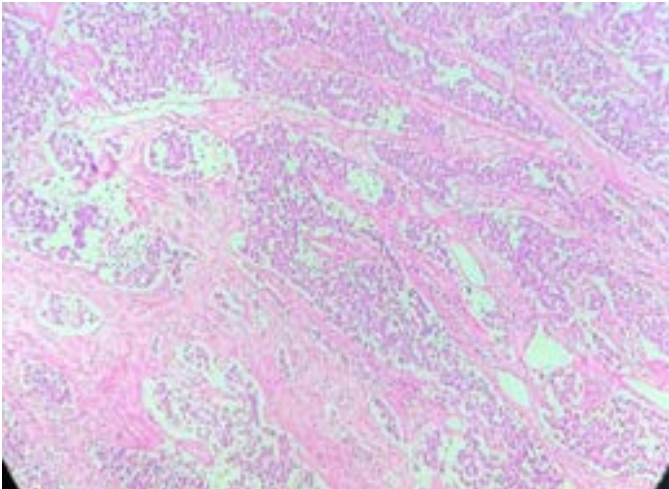
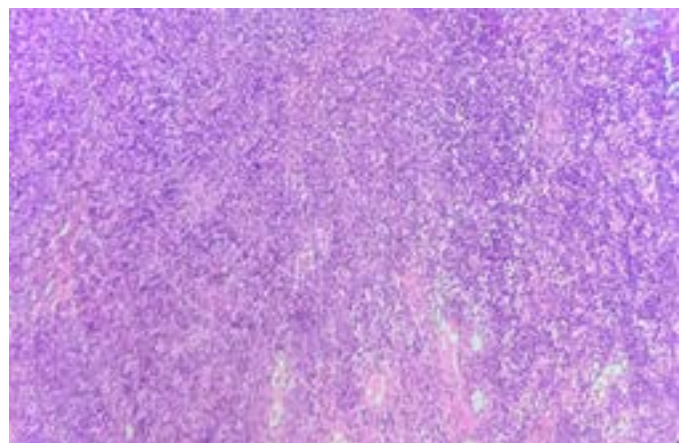


Fig 6: Poorly differentiated malignancy of ovary, H&E, 4X



## Discussion

Saba Shabbir et al states 11.33% of all Gynaecological consist of ovarian tumours; In our study 40.44% comprise of ovarian tumours. Murthy NS et al state that during the period 2015-20, the age-standardized incidence rates (ASR) for ovarian cancer varied from 0.9 to 8.4 per 100,000 person years amongst various registries. The trend analysis by period showed an increasing trend in the incidence rate of ovarian cancer in most of the registries, with a mean annual percentage increase in ASR ranged from 0.7% to 2.4 %. In comparison to GLOBOCAN 2020 cervical malignancies constitute top 5 malignancies in women. In our study 29.36% constituted cervical malignancies. With increased awareness, screening programmes, cervical malignancies rates are rapidly reducing. In comparison to the data by National cancer institute constitute 28.1%, in our study 26.18% were diagnosed with endometrial malignancies. Rest 4.02% were diagnosed with fallopian tube, vaginal and vulval malignancies.

## Conclusion

According to this study, cancer cervix is the commonest Gynaecological malignancy in this population followed by ovarian and corpus uterine malignancies<sup>5</sup>. Most of the Gynaecological malignancies is reported in advanced stage.

In India lack of awareness and limited resources play an important role. More efforts are needed to increase the awareness in general population regarding common abnormal presenting symptoms. Proper screening, timely diagnosis and treatment can save many lives. Though cancer cervix is a preventable and easily accessible cancer, the incidence is still high. By strengthening the health programs including regular Pap smear screening, public awareness campaigns, HPV vaccination and

follow up surveillance, prevention, early diagnosis and treatment of cancer cervix is possible<sup>5</sup>.

Illiteracy, low socioeconomic status, early sexual activity and multiparity were associated with cancer cervix. Early diagnosis by screening including HPV-based screening and timely management of cervical cancer is to be stressed for better outcome<sup>12</sup>.

Along with that provision of accessible and affordable health care to lower socio economic group is essential. This in turn would reduce the morbidity and mortality due to Gynaecological cancers.

## References

1. Archana Kumari<sup>1</sup>, Nidhi Singh<sup>2</sup>. Clinical Profile of Patients Presenting with Ovarian Tumors at a Tertiary Care Teaching Hospital in Jharkhand, India. Volume 7 | Issue 7 | July 2020 | ICV: 98.46 |
2. Madhu Tandra Sarkar<sup>1</sup>, Hiralal Konar<sup>2</sup>, Deepak Raut<sup>3</sup>. Clinico-pathological Features of Gynecological Malignancies in a Tertiary Care Hospital in Eastern India: Importance of Strengthening Primary Health Care in Prevention and Early Detection. Asian Pacific Journal of Cancer Prevention, Vol 14, 2013.
3. Arshdeep Kaur, Amisha Chawla, Mridu Manjari. Incidence and Clinicopathological Correlation of Cervical Cancer in a Tertiary Care Center: A 5-year Retrospective Study. AMEI's Curr Trends Diagn Treat 2019;3(2):64-67.
4. Neha E. L., Nishi Roshini Kondakasseril. Socio-demographic, reproductive and clinical profile of women diagnosed with cervical cancer in a tertiary care center in middle Kerala, 2017 Jun;4(6):2112-2117.
5. Rakshana Karim, Sama dana Wahab, Shamshad Begum, Fazeelat Jamala, Nasreen Kish war, Alia Hassan. Frequency and pattern of Gynaecological malignancies at a tertiary care hospital, Peshawar an



overview of five years of a retrospective study. JKCD June 2019, Vol. 9, No. 2.

6. Bhardwaj B and Gunjan R. Gynec-Onco-Registry of a Tertiary Centre of North India. Ann Short Reports. 2020; 3: 1052.

7. Yang X and Wang J (2019) The Role of Metabolic Syndrome in Endometrial Cancer: A Review. Front. Oncol. 9:744. Doi: 10.3389/fonc.2019.00744.

8. Paapa Dasari, Sonal Garg. Fertility preservation surgeries in gynecological malignancies at a tertiary care institute in South India. Published by Wolters Kluwer – Med know- 10.232.74.22.

9. Sayma Afroz\*, Gulshan Ara, Fahmida Sultana. Pattern of Gynaecological Malignancies in a Tertiary Care Hospital. Open Journal of Obstetrics and Gynecology, 2019, 9, 449-457.

10. Agarwal S, Malhotra KP, Sinha S, Rajaram S. Profile of gynecologic malignancies reported at a tertiary care center in India over the past decade: Comparative evaluation with international data. February 7, 2021, IP: 106.193.209.66.

11. Shanthi Ethirajan, Mohana Priya D.\*, Aarthi C. Study on pattern of Gynaecological malignancies at Saveetha Medical College and Hospital, Tamil Nadu, India. August 2018 · Volume 7 · Issue 8.

12. Maheshwari A, Kumar N, Mahan Shetty U. Gynecological cancers: a summary of published Indian data. South Asian J Cancer. 2016;5(3):112-20.

13. Frances Mary Modugno, PhD, MPH and Robert P. Edwards, MD. Ovarian Cancer: Prevention, Detection and Treatment of the Disease and Its Recurrence. Molecular Mechanisms and Personalized Medicine Meeting Report. 2012, October; 22(8): S45–S57. Doi: 10.1097/IGC.0b013e31826bd1f2.

14. Morbidity of metabolic syndrome in endometrial cancer versus at a tertiary care hospital Neha A Nim bark. Gynaecology, Journal, www.gynaecology journal.com 2020; 4(1): 34-38.

15. Swasti, Urvashi P. Jha, Sumaid Kaul. Primary Fallopian Tube Serous Adenocarcinoma. Vol. 10 No. 3, July-September 2008.

16. Sushila Chaudhary, Savita Rani Singhal, Latika, Anjali Gupta. Study of sociodemographic profile and pattern of Gynaecological malignancies in a tertiary care Centre. 2016 Aug;5(8):2640-2643.