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Original Research Article

Gynaecological Cancers: An Analysis of Prevalence, Demography and Effect of Multi-Modality Cancer Treatment in a Tertiary Care Hospital

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Abstract:

Background: Gynecological malignancies account for the most common cancers among all cancers occurring in India. Dearth in the cancer awareness, non-availability of regular rural cancer screening programmes, pathological variations, in India has led the patients to report at advanced stages of diseasewhich in turn led to unpredictable treatment out comes. The present study attempts to analyze the various Gynecological malignancies encountered in a tertiary care Hospital attached with a full-fledged Cancer Hospital in Kurnool district of Andhra Pradesh.

Aims of the Study: To analyse the prevalence, demography and effect of multi-modality cancer treatment in a Tertiary care Hospital. To find the types of gynaecological malignancies occurring in the district of Kurnool, reporting stages,and final outcome of treatment.

Materials: 127 patients with gynecological malignant diseases were included in the study. 31.49% with Carcinoma cervix, 24.40% patients with ovarian cancer, 22.83% patients, with endometrial carcinoma, 12.59% patients, with Gestational Trophoblastic carcinoma were included.The study was conducted between June 2021 and May 2023 All the included patients were examined thoroughly after history taking (age, parity, past menstrual history, past obstetrical history, and any family history). Demographic data of the patients like, educational status, economic status, rural or urban status were collected.

Results: Therewere 33/127 (25.98%) women in the age group of 45 to 54 years, 27/127 (21.25%) women in the age group of 55 to 64 years and 24/127 (18.89%) women in the age group of 35 to 44 Years. There were 58/127 (45.66%) patients with Squamous cell carcinoma, 44/127 (34.64%) patients showed Adenocarcinoma, Villoglandular carcinoma in 17/127 (13.38%) patients and small cell Neuro-endocrine carcinoma in 08/127 (06.29%) patients had Adeno-squamous type of malignancies.

Conclusions: Malignancies affecting the female genital tract are the leading causes of morbidity and mortality all over the world. Hence it was necessary to bring awareness among the medical fraternity as well as the general populations. Lack of awareness was found to be the main cause for reporting of patients at a very late stage ofthe malignancy.

Keywords: Cancer, Kurnool, Gynecology, Radiotherapy, Chemotherapy and Surgery.

Introduction

In India carcinoma of cervix and Ovaries are commonest among all other gynecological malignancies. [1] Cervical Carcinoma was found to be declining but it remains the second commonest after the carcinoma Breast in India. [2] Each year nearly 1, 22, 844 women are registered with the diagnosis of carcinoma cervix and among them 67, 477 die of the disease. [3] The behavior and etiology of the varying types of ovarian cancers are studied and reported in the literature. Pitutary homebox 2 (PITX2) - induced TGF- β pathway controlled the expression of genes (SNAI1, CDH1, and MMP9) associated with invasion and increased motilityof the ovarian cancers in lead [4] PITX2 over expression also led to loss of epithelial markers and gain of mesenchymal markers which contributed remarkably to ovarian oncogenesis. [4] In addition to CA-125 as a biomarker other biomarkers such as plasma tyrosine-lysine-leucine-40 were found to be elevated markedly in epithelial ovarian cancer. [5] Circulating cell-free DNA and cell-free nuclear DNA levels were

found to be lowered markedly during and after treatment as compared to pretreatment levels. [6] BRCA1 promoter hyper-methylation and protein expression in ovarian carcinoma in Indian population was studied by Shilpa et al [7] the study reported no methylation in benign tumors and normal ovarian tissue but EOCs showed methylation at statistical significant levels. Review of literature showed that the most of the benign tumors were occurring between 20 and 40 years of age and the malignant tumours were occurring between 41 and 50 years of age. [8] The common benign tumors were serous cystadenoma (29.9%), followed by mature teratoma (15.9%) and mucinous cystadenoma (11.1%). Serous cyst adenocarcinoma was the predominant malignant tumor (11.3%) and 49.5% them were bilateral. The role of fluorodeoxy glucose PET-computed tomography (FDG PET-CT) in the diagnosis of asymptomatic EOC with rising serum CA-125 was found to be clinching. [9] Neo Adjuvant Chemotherapy Treatment followed by interval debulking and then adjuvant chemotherapy was found to be non-inferior to primary cytoreduction followed by adjuvant chemotherapy. [10] Carcinoma cervix is preventable if regular Pap smears are taken from the women in the community, But in India lacks its awareness programs and no formal screening programs take place in the rural areas. [11] The Pap smear showed lower sensitivity (53%), but the specificity was high (93%). (12) The incidence of invasive cervical cancer was 26.74 per 100,000 in the screening group and 27.49 per 100,000 in the control group. [12] Compliance to treatment for invasive cancer was 86.34% in the screening group and 72.29% in the control group. The screening group showed a 31% reduction in cervical cancer mortality (mortality rate ratio risk ratio = 0.69; 95% CI: 0.54–0.88; P = 0.003) compared to the control group. In rural western India prevalence of HPV infection especially with HPV 16 and HPV18 were detected in 80.6% of Grade 3 CIN and 86.5% of cervical cancer cases. [14]. Community diagnostic methods used recently were Pap smears, visual inspection, and colposcopies to assess cervical lesions and in vivo Raman spectroscopy is an upcoming technique. [15] Imprint cytology (IC) was also studied in recent times for presumptive diagnosis in clinically suspicious cervical cancers and was found that the overall accuracy of IC in detecting cervical cancers in a study by Halder et al. was 96.2%. [16] It was observed in a large study that there was no significant difference in the outcome of patients with Stage Ib-IIa treated with radical surgery, preoperative RT + surgery or radical radiation; their DFS was 60–62% at 8 years. [17] Endometrial cancer was found to be more common Gynecology cancer in the western countries than in India; the incidence rates were low. They presented at an early stage and were associated with a good prognosis. Treatment comprised of surgical staging and adjuvant radiotherapy and/or chemotherapy depending on the final surgico-pathological stage. [18] A recent study was found to have reported decreasing incidences of cancer vulva in women aged above 24 years; 2.25% between 1984 and 1988, down to 0.33% in 2004 to 2008. [19] A recent study of 75 patients who presented with vaginal carcinoma was treated with radiotherapy and the DFS was 50% and OS was 60%. [20] The prevalence of gestational trophoblastic neoplasia (GTN) was 68% in LR and 32% in HR categories [21] with lung being the most common site of metastasis observed in 21% of patients. Treatment was by chemotherapy, of whom 68% were treated with methotrexate (MTX) and 96% achieved a CR.

Materials

A prospective clinical study was conducted in a Radiation Oncology department of Viswabharathi Medical College, Penchikalapadu, of Kurnool district of Andhra Pradesh and Kurnool Medical College and Government General Hospital, Kurnool, A.P between June 2021 and May 2023 to analysis the prevalence, demography and effect of multi-modality cancer treatment among patients of Gynaecological cancers. These Hospitals were also tertiary care Hospitals. The study had the objects to find the types of gynaecological malignancies occurring in the district of Kurnool, reporting stages, and final outcome of treatment. 127 patients diagnosed with various Gynaecological cancers were included. An institution ethics committee approval was obtained and the committee approved consent form and proforma were used in this study.

Inclusion criteria: Patients aged between 20 years and 70 years were included. Patients with histopathological diagnosis of all types of gynecological malignancies were included.

Exclusion criteria: Patients aged below 15 years and above 74 years were excluded. Patients who have already undergone treatment were excluded. Patients with co-morbidities like Diabetes mellitus, bleeding diathesis, immune deficiency diseases were excluded. Patients with Renal, hepatic insufficiency were excluded. All the included patients were examined thoroughly after history taking (age, parity, past menstrual history, past obstetrical history, and any family history). Demographic data of the patients like, educational status, economic status, rural or urban status were collected. The diseases of the patients were classified as perthe TNM classification to know the clinical presentation (site,symptoms and signs) and histopathology. All the patients were subjected to per-abdomen/per speculum examination/per

vaginum examination/per rectal examination. All the patients were subjected calposcopy; Pap smear and where necessary hysteroscopy, Biopsy of the malignant growths depending upon the nature of the malignant tumor. All the data was tabulated in the proforma.

Statistical Analysis: All the variables were expressed in terms of percentages, mean with standard deviation, and median. Multivariate analysis was used to analyze the risk factors and clinical signs and symptoms. Statistical significance was calculated using the Chi square test. The data was entered in to spreadsheet computer program (Microsoft excel 2010) and then exported to data editor page of statistical package for the social sciences (SPSS) version 20.

Results: In the present prospective study 127 patients with gynecological malignant diseases were included. There were 40/127 (31.49%) patients with Carcinoma cervix; 01 (02.5%) in the age group of 15 to 24 years, 06 (15%) in the age group of 25 to 34 years, 09 (22.5%) in the age group of 35 to 44 years, 10 (25%) in the age group of 55 to 64 years, 08 (20%) in the age group of 65 to 74 years. There were 31/127 (24.40%) patients, with Ovarian cancer; 03 (09.67%) in the age group of 15 to 24 years, 08 (25.80%) in the age group of 25 to 34 years, 09 (29.03%) in the age group of 35 to 44 years, 06 (19.35%) in the age group of 55 to 64 years, 08 (25.80%) in the age group of 65 to 74 years. There were 29/127 (22.83%) patients, with Endometrial carcinoma; 0 (0%) in the age group of 15 to 24 years, 07 (24.13%) in the age group of 25 to 34 years, 10 (34.48%) in the age group of 35 to 44 years, 06 (20.68%) in the age group of 55 to 64 years, 04 (13.79%) in the age group of 65 to 74 years. There were 16/127 (12.59%) patients, with Gestational Trophoblastic carcinoma; 04 (25%) in the age group of 15 to 24 years, 03 (18.75%) in the age group of 25 to 34 years, 02 (12.5%) in the age group of 35 to 44 years, 0 (0%) in the age group of 55 to 64 years, 0 (0%) in the age group of 65 to 74 years. (Table 1)

The commonest malignancy was carcinoma cervix, followed by ovarian cancer and endometrial cancer. The difference in the incidence was statistically significant with p value was 0.001 (p value was less than 0.05 taken as significant). There were 33/127 (25.98%) women in the age group of 45 to 54 years, 27/127 (21.25%) women in the age group of 55 to 64 years and 24/127 (18.89%) women in the age group of 35 to 44 Years. (Table 1) All the types of carcinomas were also common in the age group of 55 to 64 years. The median age was 51.5 years in the study.

Table 1: Showing the incidence of gynecological cancers according toage of the patients (n-127)

Age groups Number- %	Carcinoma Cervix 40- 31.49%	Ovarian Tumor 31- 24.40%	Endometrial Carcinoma 29- 22.83%	Vaginal Cancer 05-03.93%	Gestational Trophoblastic carcinoma 16-12.59%	carcinoma of Vulva 06-04.72%	P value
15 to 24- 05 03.93%	01	00	00	00	04	00	
25 to 34- 18 14.17%	06	03	02	00	07	00	
35 to 44- 24 18.89%	09	05	07	00	03	00	0.001
45 to 54- 33 25.98%	10	08	10	01	02	02	
55 to 64- 27 21.25%	08	09	06	01	00	03	
65 to 74- 20 15.74%	06	06	04	03	00	01	
Total- 127	40	31	29	05	16	06	

Demographic factors and their relevance to the types of malignant diseases of the female genital tract wee depicted in the Table 2. The social factor of status of living (either urban or rural) was significant statistically showing the prevalence among the women living in the rural area especially in carcinoma of cervix, ovarian cancer and vaginal cancers. (Table 2) The educational status was not significant in the study. Social factor of economic status was significant statistically with middle income group women showing prevalence for carcinoma cervix and ovarian cancers, rural women showing prevalence to endometrial carcinoma with p values less than 0.05. (Table 2) women with higher Para and gravida status were shown to have prevalence to all the malignancies of genital tract in the study with p values less than 0.05. (Table 2) Family history was significant in carcinoma cervix and ovarian cancers with p values less than 0.05. Similarly bad menstrual history was positive in carcinoma cervix and ovarian cancers. (Table 2)

Table 2: Showing the demographic data of the subjects in the study(n-127).

Observation	Carcinoma Cervix 40	Ovarian Tumor 31	Endometrial Carcinoma 29	Vaginal Cancer 05	Gestational Trophoblastic carcinoma 16	carcinoma of Vulva 06
Living status						
Urban	13	12	10	03	09	03
Rural	27	09	19	02	07	03
P value	(p- 0.041)	(p- 0.011)	(P- 0.251)	(p- 0.04)	(p- 0.314)	(p- 0.114)
Education						
Illiterate	06	03	04	01	03	01
Primary	07	04	06	02	02	02
Secondary	11	08	07	00	05	00
Undergraduate	08	09	05	02	06	00
Graduate	06	05	03	00	00	00
Post graduate	02	02	04	00	00	00
	(p- 0.113)	(0.214)	(p- 0.161)	(p0.301)	(p- 0.501)	(p-0.011)
Economic status						
Poor Middle income High income	14 22 04	08 17 06	14 08 07	01 03 01	04 07 06	04 01 01
	(p- 0.031)	(p- 0.041)	(p- 0.025)	(p0.311)	(p-0.118)	(0.281)
Gravida						
G1G2G3G4 Above G4	05 06 08 10 11 (p- 0.013)	04 06 07 11 03 (p-0.037)	02 08 07 07 05 (p-0.014)	00 00 00 03 02 (0.049)	02 02 04 05 03 (p- 0.012)	00 00 00 04 02 (p-0.041)
Family History YesNo	 13 27 (p- 0.047)	 08 23 (p- .028)	 11 18 (p- 0.411)	 02 03 (p0.314)	 09 07 (p- 0.511)	 03 03 (p- 0.027)
Bad Obstetric History YesNo	 28 12 (0.001)	 04 27 (p- 0.711)	 11 18 (p- 0.051)	 01 04 (p0.423)	 08 08 (p- 0.311)	 04 02 (0.123)
Bad Menstrual History YesNo	 25 15 (0.047)	 14 17 (p- 0.036)	 12 17 (p- 0.502)	 02 03 (p0.061)	 11 05 (p- 0.732)	 02 04 (p- 0.402)

The incidences of symptomatology of the malignant diseases of genital tractwere tabulated in the Table 3.

Table 3: Showing the common presenting symptoms among the patients (n-127)

Clinical features	Carcinoma Cervix 40	Ovarian Tumor 31	Endometrial Carcinoma 29	Vaginal Cancer 05	Gestational Trophoblastic carcinoma16	carcinoma of Vulva 06	Total
Post menopausal bleeding	34	12	28	02	00	00	76
Inter menstrual bleeding	11	08	19	02	12	00	52
Mass per abdomen	0	19	02	00	10	00	31
Post coital bleeding	18	05	11	05	05	05	49
Vaginal discharge	27	02	12	05	06	05	57
Pain in the	01	09	03	00	11	00	24

abdomen							
Abdominal fullness	0	07	02	00	11	00	20
Urinary and Stool incontinence	04	07	06	03	04	05	29
Itching of the vulva	00	00	00	00	00	06	06
Mass on the vulva	00	00	00	00	00	06	06
Discharge from the vulva	06	00	00	04	00	06	16

Among the 127 patients included in this study Stage I carcinoma cervix was observed in 07 (05.51%) patients, Stage II in 13 (10.23%), Stage III in 13 (10.23%) and Sage IV in 07 (05.51%) patients.

Stage I ovarian cancer observed in 06 (04.72%) patients, Stage II in 07 (05.51%), Stage III in 14 (11.02%) and Sage IV in 04 (03.14%) patients. Stage I Endometrial carcinoma was observed in 06 (04.72%) patients, Stage II in 09 (07.08%), Stage III in 10 (07.87%) and Sage IV in 04 (03.14%) patients. Stage I Gestational Trophoblastic carcinoma was observed in 04 (03.14%) patients, Stage II in 02 (01.57%), Stage III in 11 (08.66%) and Sage IV in 01 (0.78%) patients. (Table 4)

68/127 (53.54%) of the patients belonged to Stage II and III staged malignancies in the study. 26/127 (20.47%) patients belonged to stage I disease and 19/127 (14.96%) belonged to stage IV disease in the study. (Table 4)

Table 4: Showing the number of cases observed in different stagesof malignancy (n-127)

Name of the Disease	**Stage-I**			**Stage- II**		**Stage-III**			**Stage-IV**	
	A	**B**	**C**	**A**	**B**	**A**	**B**	**C**	**A**	**B**
Carcinoma Cervix40	02	03	02	07	06	05	04	04	03	04
Ovarian Tumor 31	01	04	01	05	02	05	03	06	02	02
Endometrial Carcinoma 29	01	03	02	06	03	04	04	02	03	01
Vaginal Cancer05	00	00	01	01	01	00	01	00	00	01
Gestational Trophoblasticcarcinoma 16	01	01	02	01	01	03	04	02	00	01
Vulvae carcinoma 06	00	01	01	00	00	02	00	00	01	01
Total	05	12	09	20	13	19	16	14	09	10

There were 58/127 (45.66%) patients with Squamous cell carcinoma, 44/127 (34.64%) patients showed Adenocarcinoma, Villoglandular carcinoma in 17/127 (13.38%) patients and small cell Neuro-endocrine carcinoma in 08/127 (06.29%) patients had Adeno-squamous type of malignancies. The prevalence was statistically significant for all the types of carcinomas in this study with p value less than 0.05 **(Table 5).**

Table 5: Showing the incidence of different types of histopathological types of malignancies (n-127)

Histological Type	**Number**	**Percentage**	**P value**
Squamous Cell carcinoma	58	45.66	0.001
Adenocarcinoma	44	34.64	0.001
Villoglandular carcinoma	17	13.38	0.001
small cell Neuro-endocrine carcinoma	08	06.29	0.001

Histopathology of Carcinoma of ovary in this study was studied and observed that Papillary serous cyst Adenocarcinoma was in 29.03%, serous Cystadenocarcinoma was in 25.80%, Mucinous cyst Adenocarcinoma in 19.35%, clear cell carcinoma in 12.90%, Teratoma in 06.45% and Dysgerminoma in 06.45% patients **(Table 6).**

Table 6: Showing the type of histological pattern among the ovarian tumors (n-31)

Histological type of Ovarian tumors	**Number**	**Percentage**
papillary serous cyst Adenocarcinoma	09	29.03
serous Cystadenocarcinoma	08	25.80
Mucinous cyst Adenocarcinoma	06	19.35
clear cell carcinoma	04	12.90
Teratoma	02	06.45
Dysgerminoma	02	06.45

The treatment protocols followed in the study and the patients subjected to these methods were tabulated in the Table 7. Among the 40/127 (31.49%) patients with carcinoma cervix surgery and radiotherapy were used 12/40 (30%) patients, surgery and chemotherapy in 05/40 (12.5%) patients, Surgery, chemotherapy and Radiotherapy were used in 08/40 (20%) patients.

Only 02/40 (05%) patients underwent only surgery, 01/40 (02.5%) patient only chemotherapy and 01/40 (02.5%) patient only radiotherapy. Among the 31/127 (24.40%) patients with ovarian tumors, surgery and radiotherapy were used 11/31 (35.48%) patients, surgery and chemotherapy in 08/31 (25.80%) patients, Surgery, chemotherapy and Radiotherapy were used in 02/31 (06.45%) patients. 04/31 (12.90%) patients underwent only surgery, 01/31 (03.22%) patient only chemotherapy and 01/31 (03.22%) patient only radiotherapy. Among the 29/127 (22.83%) patients with Endometrial carcinoma, surgery and radiotherapy were used 13/29 (44.82%) patients, surgery and chemotherapy in 07/29 (24.13%) patients, Surgery, chemotherapy and Radiotherapy were used in 02/29 (06.89%) patients.

Only 3/29 (10.34%) patients underwent only surgery, 02/29 (06.89%) patient only chemotherapy and 01/29 (03.44%) patient only radiotherapy. In total 43/127 (33.85%) patients underwent surgery and radiotherapy followed by 24/127 (18.89%) patients surgery and chemotherapy and radiotherapy and chemotherapy in 16/127 (12.59%) patients (Table 7) Surgery alone was used in 16/1217 (12.59%) patients.

Table 7: Showing the treatment protocols followed based on the staging in different gynecological diseases (n-127)

Name of theDisease	Surgery	Chemo Therapy	Radiotherapy	S+R	S+C	R+C	S+C+R
CarcinomaCervix 40	02	01	01	12	05	11	08
OvarianTumor 31	04	01	01	11	08	02	02
EndometrialCarcinoma 29	03	02	02	13	07	02	02
VaginalCancer 05	01	01	01	01	01	00	00
Gestational Trophoblastic carcinoma 16	04	02	02	04	02	01	01
Vulvae carcinoma 06	02	01	00	02	01	00	00
Total	16	08	07	43	24	16	13

Among the 40 patients with carcinoma cervix 34/40 (85%) had total cure for the duration of follow up of 24 months, recurrence was observed in 05 (12.5%) and one patient died (02.5%). Among the 31 patients with ovarian tumors 28/31 (90.32%) had total cure for the duration of follow up of 24 months, recurrence was observed in 02 (06.45%) and one patient died (03.22%). Among the 29 patients with endometrial carcinoma 19/29 (65.51%) had total cure for the duration of follow up of 24 months, recurrence was observed in 06/29 (20.68%) and one patient died (03.44%). Among the 16 patients with gestational trophoblastic carcinoma 13/16 (81.25%) had total cure for the duration of follow up of 24 months, recurrence was observed in 03/16 (18.75%) and no mortality. In patients with vaginal carcinoma and carcinoma of vulva there was no recurrence and deaths. **(Table 8)** The cure rate was statistically significant with p value less than 0.05.

Table 8: Showing the final outcome in the study after a follow up of 24 months (n-127).

Type of Malignant tumor (number)	Total cure	Recurrence	Mortality	P value
CarcinomaCervix 40	34	05	01	0.001
OvarianTumor 31	28	02	01	0.001
EndometrialCarcinoma 29	19	06	04	0.001
VaginalCancer 05	05	0	0	0.001
Gestational Trophoblasticcarcinoma 16	13	03	0	0.001
Carcinoma Vulva 06	06	0	0	0.001

Discussion

The present study consisted of 127 patients with different gynecological malignancies, attending the Department of OBG at Viswabharathi Medical College and Hospital between June 2021 and May 2023. Table 1 showed the prevalence of malignancies as per the age and site of the malignant tumors. There were 40/127 (31.49%) patients, with Carcinoma cervix, 31/127 (24.40%) patients, with Ovarian cancer, 29/127 (22.83%) patients, with Endometrial carcinoma and 16/127 (12.59%) patients, with Gestational Trophoblastic carcinoma. (Table 1) There were 33/127 (25.98%) women in the age group of 45 to 54 years, 27/127 (21.25%) women in the age group of 55 to 64 years and 24/127 (18.89%) women in the age group of 35 to 44 Years. (Table 1) All the types of carcinomas were also common in the age group of 55 to 64 years. The eldest patient was aged 73 years and the youngest patient was aged 22 years. As the

burden of the disease of Cancer was found to be high in India as per the 2011 census, there was a necessity of accurate notification to theGovernment by all the treating physicians. [22] The most common cancer (40- 31.49%) in this study was Carcinoma cervix followed by ovarian tumors (31- 24.40%) and then endometrial carcinomas (29- 22.83%) in this study. (Table 2) The lesser common malignancies were Gestational Trophoblastic Carcinoma (16-12.59 %), Vaginal (05- 03.93%) and the Vulval carcinoma (- 04.72%) in this study. (Table 2) Kumar et al from their study of on 58 malignant cases of Gynecology found, cervical carcinoma as the most common disease with 56.9%, followed by endometrial carcinoma (22.4%), and ovarian cancers (15.5%). The vaginal and Vulval cancers were found to be the lowest with 3.4% and 1.7% cases respectively. [23] In 2017 Jeph et al [23] conducted a similar study and found that among the 504 patients, nearly 67.2% had cervical cancer, followed by Carcinoma ovary in 21.8% patients, carcinoma Endometrium in 08%, Carcinoma vulva in 02.5% and Carcinoma fallopian tubes in0.1%. The commonest age group in their study was 51-60 years (29.5%) followed by 61-70 years (24.8%) and 41-50 years (23.8%). [24] According to GLOBOCAN 2018 census, nearly 1157294 new cancer cases were enrolled in India in both the genders across all age groups. In them 162468 cases were of breast cancer with a mortality of 87090 cases. The five-year prevalence across all age groups was 405456 cases. [25] The median age was 51.5 years in the study. The most common cancer (40- 31.49%) in this study was Carcinoma cervix followed by ovarian tumors (31- 24.40%) and the maximum cases occurred in the age group of 35 to 64 years (27- 21.25%). But in a similar study by Pradhan M, Dhakal HP et al [26] majority of the patients were in the age group of 51-60 years. In this study the most common symptom was Post-menopausal bleeding in 76/127 (59.84%), Vaginal discharge in 56/127 (44.09%) and inter menstrual bleeding in 52/127 (40.94%) patients. In a similar study by Pahwa S, Kaur A et al [27] 34/141 (12.05%) patients presented with post-menopausal bleeding followed by 27/282 (09.57%), patients presented with both PM bleeding and vaginal discharge. Similarly the retrospective study from a tertiary centre in Bihar showed an analysis of patients of cervical carcinoma in the age group of 4th and 5th decades and the mostcommon symptoms were postmenopausal bleeding and abnormal uterine bleeding. [28] There were 58/127 (45.66%) patients with Squamous cell carcinoma, 44/127 (34.64%) patients showed Adenocarcinoma, Villoglandular carcinoma in 17/127 (13.38%) patients and small cell Neuro-endocrine carcinoma in 08/127(06.29%) patients had Adeno-squamous type of malignancies. (Table 5) In the study by Pahwa S, Kaur A et al [27] cervical cancer was SCC in 81.31%, Adenocarcinoma in 10.98%, Villoglandular carcinoma in 03.29% and Adenosquamous in 04.12% and small cell Neuro-endocrine carcinoma was observed in 02.19% patients. Similar reports were published by Kumar et al [24] with 66.6% patients with Squamous cell carcinoma. Ovarian malignancies constituted to 15.11%, with a median age of 45 years in the study by Bray et al. [22] In the study by Agarwal et al [29] the incidence of ovarian tumors was in 15.24% patients. Histopathology of Carcinoma of ovary in this study was studied and observed that Papillary serous cyst Adenocarcinoma was in 29.03%, serous Cystadenocarcinoma was in 25.80%, Mucinous cyst Adenocarcinoma in 19.35%, clear cell carcinoma in 12.90%, Teratoma in 06.45% and Dysgerminoma in 06.45% patients (Table 6). The presenting complaints of ovarian malignancies in this study were lower pain abdomen and abdominal fullness as were noted in other studies. 12/31 (38.70%) patients with ovarian carcinomas were in stage III. They were managed with surgery and chemotherapy. Patients reported in advanced stages in our study and were managed withchemotherapy and radiotherapy. Among the 29 Endometrial carcinoma patients, Stage I Endometrial carcinoma was observed in 06 (04.72%) patients, Stage II in 09 (07.08%), Stage III in 10(07.87%) and Sage IV in 04 (03.14%) patients. In the study by Pahwa S et al uterine Adenocarcinoma was found to be the most common malignant tumor with an incidence of 44.44%. In 43/127 (33.85%) patients' surgery and radiotherapy were used followed by 24/127 (18.89%) patients surgery and chemotherapy and radiotherapy and chemotherapy in 16/127 (12.59%) patients(Table 7) Surgery alone was used in 16/127 (12.59%) patients. In a study by Pahwa S, Kaur A et al [27] 55.55% patients were managed with surgery followed by radiotherapy. In this study a triple incision technique was used for radical Vulvectomy with bilateral inguinal lymph node dissection. In this study a 66 years old female was subjected to wide surgical excision of carcinoma of vulva and lymph node dissection. Histopathology of carcinoma of vulva was Squamous cell carcinoma in this study (100%) Vaginal cancer comprised of 03.93% of patients in this study. It was observed in 03.44% of patients in a similar study conducted by Kumar et al. [24] in their study Squamous cell carcinoma was the histological pattern observed. The patients presented with complaints of frequent micturition and vaginal bleeding as presenting complaints. [30] Radiation therapy was used as a treatment of choice in these patients in this study. All the Vaginal carcinoma patients in this study presented with Squamous cell carcinoma (100%). Limitations Because of COVID scenario there was delayed follow up of patients,

morbidity, mortality and recurrence of disease was not enquired because of lost to follow up. In this study among the 40 patients with carcinoma cervix 34/40 (85%) had total cure for the duration of follow up of 24 months, patients with ovarian tumors 28/31 (90.32%) out of 31 showed cure rate of 90.32%. 29 patients with endometrial carcinoma 19/29 (65.51%) had total cure. (Table 8) Similar results were reported by few authors like Pingley S, Shrivastava SK and Kumar R et al. [20, 23]

Conclusions: Malignancies affecting the female genital tract are the leading causes of morbidity and mortality all over the world. Hence it was necessary to bring awareness among the medical fraternity as well as the general populations. Lack of awareness was found to be the main cause for reporting of patients at a very late stage of the malignancy. Bring out Health awareness and multimodality treatment schedules is the more appropriate option for early diagnosis and prevention of complications. Regular screening of malignancy in women and Development of treatment protocols for all types and stages of malignant gynecological diseases increases the effectiveness of the programmes. Education about reporting of change in menstrual pattern, foul smelling discharge, maintenance of vaginal and Vulvar hygiene, awareness regarding STDs and safe sexual practice should be encouraged.

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