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Epidemiological Factors and Clinical Profile of Ovarian Tumors in a Teriary Care Hospital- An Observational Study

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KEYWORDS
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ABSTRACT:
Background: Ovarian cancers are very common worldwide and one of the leading causes of death in women. In India Ovarian cancers are second most common in women, these tumors are usually asymptomatic and detected mostly in later stages. The aim of the present study was to observe the epidemiological factors and clinical profile of ovarian tumors in females in tertiary care hospital.
Materials and Methods: A hospital based prospective clinical study on 120 cases diagnosed with ovarian tumors & also ovarian cysts was carried out during a period of 18 months. The data collection was done for 1 year and same patients were followed for 6 months period. The cases were included based on the laid inclusion and exclusion criteria.
Results: It was found that 61% of the patients had benign & 39% had malignant ovarian tumours. Mean age group was 41-50 years for malignant and 30-40 years of benign tumors. 24.1
% of cases were nulliparous and 43.3% were more than three parity. Postmenopausal patients were 58.8%. Serous cystadenoma was found to be the most common benign ovarian tumour. Among the malignant tumours papillary serous cystadenocarcinoma was found to be highest.
Conclusion: The origin and etiopathogenesis of ovarian malignancies is controversial. Insufficient evidence is present about the molecular changes and genetic profile which may be associated with carcinogenesis of ovarian cancer. Hence evaluation of epidemiology and disease progression has to be done in order to diagnose and manage the disease at an earlier stage.

INTRODUCTION

"World Health Organization (WHO) classifies ovarian tumours according to their most probable cell of origin and histomorphological features".[1]Epithelial ovarian carcinoma (EOC) comprise of more than 90% of all ovarian tumours. It is one of the most common and lethal gynaecological neoplasms.[2] Worldwide, ovarian carcinomas are the sixth most common and the seventh leading cause of cancer deaths among women. In India, it is second in order of malignancy of female genital tract first being carcinoma cervix.[3]

Tumours of ovary are common form of neoplasm in women. These tumours are usually asymptomatic hence detected at a very late stage and also due to poor health awareness.[4]They have been given a title of silent killers as they amount to disproportionately high morbidity and mortality by the time they are detected as they have already progressed to an advanced stage with metastasis to liver, lungs, bowel etc. In advanced high grade serous carcinomast he peritoneal cavity has massive ascites.[5]

Rapid growth and metastasis to various organs implies their very aggressive nature. Unlike most neoplasms this does not spread through hematogenous route however pelvic and paraaortic lymph nodes may be involved.[6] The omentum is almost always involved in high grade malignant carcinomas. Functional or dysfunctional cysts of ovary may occur, due to a dysfunction in the hypothalamic-pituitary-ovarian axis. This may reduce spontaneously or after treatment.[7]

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More than 70% of ovarian cancers which are sporadic and peritoneal high-grade serous carcinomas demonstrated mucosal tubal involvement including STICs (SEROUS TUBULAR INTRAEPITHELIAL CARCINOMA). BRCA1 and BRCA2 germline mutations account for approximately 65% to 85% of the genetic alterations associated with genetic ovarian cancer.[8] Previous studies have shown that the p53 gene is mutated in 30-80% of ovarian carcinomas. In each case of ovarian tumour histopathological examination has to be done to find the exact nature of the tumour. Radiological, biochemical, histopathological, cytological studies help in screening, diagnosis staging and management of the neoplasms. Immunostaining is now employed for diagnosis and for other parameters like prognosis, staging, prediction of response to therapy, and for the selection of therapeutic agents.[9] The present study was undertaken to evaluate the epidemiological factors and clinical profile of ovarian tumors in a tertiary health care hospital.

MATERIAL AND METHODS

The current study was a hospital based prospective clinical study of 120 cases of ovarian neoplasms, benign as well as malignant and also functional ovarian cysts admitted in gynaecology ward of Goa Medical College during the period from 1st November 2016 to 1st November 2017. Approval of Institutional Ethical committee was taken. Ovarian tumour patients diagnosed clinically and confirmed radiologically were included in the study. It included OPD admissions as well as referral admissions in Department of OBGY.

INCLUSION CRITERIA

1. Ovarian tumour patients diagnosed clinically and confirmed radiologically.
2. Presence of anechoic, solid element ovarian tumour.
3. If it is cystic with echoes, then diameter> 5 cm will be included.

EXCLUSION CRITERIA

1. Cystic growth with echoes and diameter <5cm
2. Tubo-ovarian mass.
3. Adnexal mass with infective origin.

Initial workup included detailed history and examination findings. Patient's and relatives' contact numbers were taken. Risk Of Malignacy Index(RMI) was calculated for the sample size of 120 patients. Every patient was subjected to a battery of required investigations for surgical interventions, chemotherapy. The resected tissues from surgeries were sent for histopathological examination in the Department of Pathology, Goa Medical College. Collected data was then analyzed using SPSS software. Data was expressed in terms of percentage and means with standard deviation.

RESULTS

There were 2025 cases of gynaecological admissions in the department ward in the study period of November 2016 to November 2017. Out of them 242 cases were of genital malignancies (11.95%). 120 cases among 242 were of ovarian neoplasms (49.6%). Sixty one percent of above patients had benign ovarian tumour and 39% were diagnosed to be malignant ovarian tumours. The incidence of ovarian neoplasm were found to be highest in the age group 41-50 years that is 29 patients from sample size of 120. Lowest incidence was found in the extremes of age group i.e in <20 years and > 70 years.[Table 1]

Table 1: Distribution based on age

Age group	Frequency	Percentage
<20	8	6.7
21-30	16	13.3
31-40	23	19.2
41-50	29	24.2
51-60	20	16.7
61-70	19	15.8
>70	5	4.2
Total	120	100

Eighty percent of the patients were married. Majority of the patients belonged to upper middle class (50%), followed by lower middle class (30%) high class (15.8%), poor class (3.3%) and upper high class (0.8%). Pain in abdomen was the commonest presenting complaint in 57.5% of cases followed by abdominal distension (18.3%) and abdominal mass (17.%)[Table 2]

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Table 2: Distribution based on presenting complaints

Presenting complaints	Frequency	Percentage
Abdominal distension	22	18.3
Abdominal mass	21	17.5
Bleeding per vaginum	4	3.3
Incidental	1	0.8
Irregular menses	1	0.8
Menorrhagia	1	0.8
Pain in abdomen	69	57.5
Vomiting	1	0.8
Total	120	100

Most common clinical complaint was pain in abdomen (63%). Loss of appetite was mostly seen as a presenting complaint in 42.5% malignant ovarian neoplasms. Three patients (2.5%) presented with post hysterectomy mass in the abdomen while 4.2% patients presented with bowel bladder disturbances. The duration of complaint in majority of cases were 1-6 months (69.2%) followed by >6 months (13.3%), 15 days to 1 month (10%) while least had complain of less than 15 days (7.5%).

Majority of ovarian carcinoma were seen in parous patients among which 43.3% were of more than three parity. Least were two parity and 24.1% of patients were nulligravidas.[Table 3]

Table 3: Distribution based on parity

Parity	Frequency	Percentage
Nulligravida	29	24.1
Para 1	16	13
Para 2	23	19.1
Para 3 and more	52	43.3
Total	120	100

Irregular menses were seen in 19.2% patients while dysmenorrhea was observed in 34.7% patients. Among 120 patients 32% had history of consumption of various drugs which could be due to varied systemic or medical illness requiring daily medications. Also only 20% of subjects had history of consumption of oral contraceptive pills. History of using hormone replacement therapy was given by only 3% of patients. Positive family history was associated in 14.9% cases of ovarian cancer.

The association of addictions with ovarian tumors when assessed only one person had agreed to being a smoker and 15/120 had accepted that they were occasional smokers. Among alcohol consumption 9/120 people gave history of consuming alcohol and 8 among them were occasional alcoholics. Only 2/ 120 were addicted to drugs.[Table 4]

Table 4: Distribution based on addictions

	Smoking		Alcohol		Drugs	
	n	%	n	%	n	%
No	104	86.7	103	85.8	117	97.5
Occasional	15	12.5	8	6.7	1	0.8
Yes	1	0.8	9	7.5	2	1.7
Total	120	100	120	100	120	100

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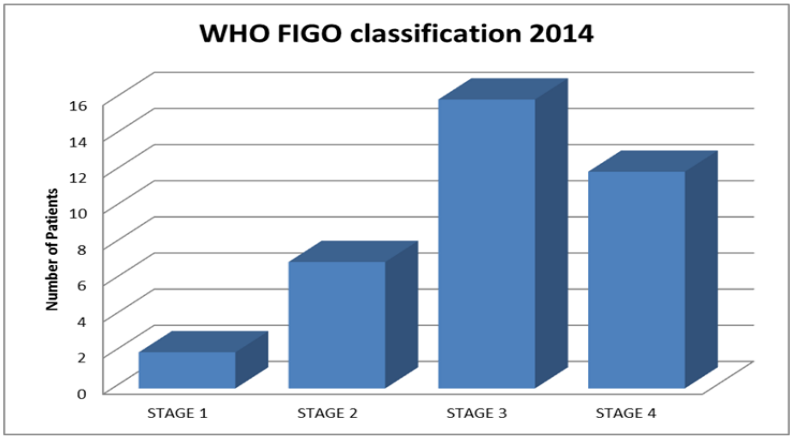
In patients with ovarian tumours, there was positive history of systemic illness of hypertension, diabetes mellitus, COPD, IHD, hypoprotenimia among 15%, 13.3%, 14.2%, 11.7% and 9.2% patients respectively. Based on the histopathological diagnosis maximum patients were found to be having papillary serous cystadenocarcinoma among the various malignant ovarian cancer (14.2%) followed by borderline serous cystadenocarcinoma (9.2%). Among benign tumours mature cystic teratoma topped the list being 14.2%.[Table 5]

Table 5: Distribution based on Histopathology

Histopathology	Frequency	Percentage
Ovarian cyst	6	5
Serous cystadenoma	7	5.8
Mucinous cystadenoma	7	5.8
Mature cystic teratoma	13	10.8
Mature cystic teratoma of both ovaries	1	0.8
Papillary serous cystadenocarcinoma	17	14.2
Mucinous cystadenocarcinoma	6	5
Papillary cystadenofibroma	1	0.8
Well differentiated adenocarcinoma	2	1.6
Moderately differentiated adenocarcinoma	2	1.6
Poorly differentiated adenocarcinoma	2	1.6
Paraovarian cyst	5	4.2
Endometriotic cyst	7	5.8
Ovarian cyst with chronic nonspecific cervicitis	1	0.8
Borderline serous cystadenocarcinoma	4	3.3
Borderline mucinous cystadenocarcinoma	11	9.2
Brenners tumour	1	0.8
Clear cell carcinoma	1	0.8
Dysgerminoma	1	0.8
Endometriod carcinoma	1	0.8

Based on the WHO FIGO classification 2014, maximum patients belonged to stage 3 at admission (43.2%) followed by stage 4 (32.4%), stage 2 (19%)and least was stage 1 (5.4%).[Figure 1]

Figure 1: WHO FIGO classification 2014



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DISCUSSION

In the present study ovarian tumour constitutes 49.6% of all gynaecological admissions. Benign tumours were observed in 61% and malignant tumours in 39% cases. The overall incidence of benign tumours was more than malignant tumours which was in accordance with most of the authors. Our study was similar to a study conducted by Manivasagan et al[10] wherein the incidence of benign tumours was found to be 59.5% and also to Hemanth Kumar et al[11] which showed 70% incidence of benign tumours. Malignancies of ovary are seen in all age groups. Age has a strong correlation with etiopathogenesis of ovarian cancer and as age advances the chances of progression to malignany increases. The minimum age at presentation was 14 years and maximum age was 83 years in our study.

Median age for benign tumour is 31-40 years (28.57%) risk of two folds for ovarian cancer. In the present study 81.7% patients reported of never using OCP's and only 18.3% gave history of regular consumption of OCP's.

Study by Yogambal et al[15] showed that pain in the abdomen was the most common symptom in the patients presented (66.9%) followed by lump in the abdomen which was seen in 28.1 % of cases. Similar results were shown by Padma Priya et al[14] in 2016 having 64% of patients present with pain in abdomen but only 19% with lump in the abdomen. This picture is similar to our study which showed 63% patients having pain in abdomen as the most common presenting complaint followed by vague abdominal discomfort (54%) and lump in the abdomen in 49.2% of the cases.

A strong family history refers to those with two or more first degree relatives diagnosed with breast, ovarian or bowel cancer. This implies a strong possibility that these women have BRCA1/2 mutations. In a study conducted by Mohammed Farouk Mostafa [16], positive family history for ovarian, breast and colon cancers was present in 13.7% of the patients which is similar to our study (14.9%). In a recent study evaluating epithelial ovarian cancer among Pakistani women, the number of patients with positive family history for cancer was 18.7%.

The incidence serous tumours in our study was 30.2%, this figure was 29.9% in the study done by Mondal et al[12] and 32.6% in a study by Jha et al.[17] However this figure was almost double in a study done by Shradha et al[18] (67%). Thus the above table implies that serous tumours constitute maximum of the benign ovarian whereas that for malignant tumor is 41- 50 years (40.27%)in our study which is comparable with study conducted by Hemanth Kumar et al[11] which had maximum incidence of benign tumours in the age group of 31-40 years and maximum incidence of malignant tumours in the age group of 41-50 years. Also the age incidence of malignant ovarian tumours is comparable to many other studies K. Mondal et al[12] and Mohamed et al[13] and Padma Priya et al.[14]

Proposed theory is that as parity increases incidence of ovarian malignancy decreases.A study conducted by Hemnath Kumar pradhan et al[11] higher incidence of ovarian neoplasms seen in nulliparous women. (27.77%). This may be explained by repeated ovulation related injury to ovary due to prolonged estrogen exposure or infertility. Infertility is associated with a relative

tumours. Serous cystadenoma constituted the most common among all the benign serous tumours. Mucinous ovarian tumours comprised 5.8%, Jha et al[17] had the incidence of 15.6% and K. Mondal et al[12] had 11.1%. The incidence of dermoid cyst(mature cystic teratoma) was 14.2 % in our study which was comparable to K. Mondal et al[12] 15.9% and Shradha et al[18] 11.6%. Among malignant tumours serous carcinomas constitute 11.6% in our study. Serous cystadenocarcinoma is the most common among all of them. Hemanth kumar et al[11] constitutes 12.5% of malignant tumours which is similar to our study. Among mucinous carcinomas, mucinous cystadenocarcinoma constituted 5% in our study which was similar to Mondal et al[12] which had incidence of 3.3%.

Majority of the patients in our study group belonged to Stage III of FIGO classification system of 2014 (43.2%) which was in accordance with Saini et al[19] (47.5%). K. Mondal et al[12] diagnosed only 60% in stage III. Least number of patients belonged to Stage I (5.4%) 75.6% of patients belonged to stage III and stage IV combined.

CONCLUSION

The origin and etiopathogenesis of ovarian malignancies has been a controversial topic and the cell of origin has not been defined. Insufficient evidence is present about the molecular changes and genetic profile which may be associated with carcinogenesis of ovarian cancer. Hence evaluation of epidemiology and disease progression has to be done in order to diagnose and

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manage the disease at an earlier stage.

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