

## OVARIAN MASSES AMONG YOUNG WOMEN PREDICT HIGH FREQUENCY OF MALIGNANCY WITH POSITIVE FAMILY HISTORY.

**DR. FAIQA FAYYAZ, MBBS**

Nishtar Hospital, Multan, Pakistan.

**DR. NOOR TANVEER, MBBS**

Nishtar Hospital, Multan, Pakistan.

**DR. SOJHLA AHMAD, MBBS**

Nishtar Hospital, Multan, Pakistan.

### ABSTRACT;

**Background;** Ovarian masses are very common in pre- and postmenopausal women and are usually an incidental finding. The treatment of an ovarian cyst relies on its nature, and accurate preoperative discrimination of benign and malignant cysts is therefore of crucial importance. This study was done to ascertain malignancy in adolescent women having ovarian masses. **Objective;** To determine the frequency of malignancy in adolescents and young women presenting with ovarian masses. **Material and Methods;** Patients (n = 98) fulfilling inclusion criteria from outpatient department of Nishtar Hospital, Multan, Pakistan were included in the study. Informed consent was taken from each patient ensuring confidentiality and the fact that there was no risk to the patient while taking part in this study other than the disease itself. Detailed history and physical examination of our study cases were arranged by the researcher itself. Data were entered and analyzed by SPSS. **Results;** Mean age of our study cases was  $24.27 \pm 5.19$  years (with minimum age of our study cases was 15 years while maximum age was 34 years). Our study results have indicated that majority of our study cases i.e. 59 (60.2 %) were aged equal/less than 25 years. Of these 98 study cases, 43 (43.9 %) belonged to rural areas and 55 (56.1%) belonged to urban areas. Monthly family income up to Rs. 35000 was noted in 58 (59.2%) and more than Rs. 35000 was noted in 40 (40.8%) of our study cases. Of these 98 study cases, 66 (67.3%) were illiterate and 32 (32.7%) were literate. Family history of family cancer was noted in 19 (19.4%) of our study cases. Mean disease duration was  $14.78 \pm 5.13$  months. Mean body mass index of our study cases was  $26.02 \pm 2.13$  kg/m<sup>2</sup> and obesity was present in 23 (23.5 %) of our study cases. Of these 98 study cases, 27 (27.6 %) were having history of use of oral contraceptives. Malignancy was diagnosed in 23 (23.5 %) of our study cases. **Conclusion;** There was high frequency of malignancy noted among women having ovarian masses in our study cases. Ovarian masses were significantly associated with residential status and family history. Gynecologists treating such patients should monitor such suspected cases for early diagnosis which will improve treatment rate and quality of life of our patients.

**Keywords;** Ovarian Masses, Malignancy, Frequency, adolescents.

### INTRODUCTION;

Ovarian cancer is the second most common gynecological malignancy in women with cancer<sup>1</sup>. It is the 8<sup>th</sup> most common cancer among women, fifth leading cause of cancer related death among women, and is the deadliest of the gynecologic cancers<sup>2</sup>. The age standardized incidence rates (ASR) of ovarian cancer in Karachi Pakistan, is 10.2 per 100000 per year<sup>3</sup>. In contrast ASR in India ranged from 0.9 (Silchar town) to 8.4 per 100000 per year<sup>4</sup>. Ovarian cancer accounted for 204000 new cases and 125000 deaths worldwide<sup>5</sup>. It is one of the most aggressive gynecological malignancies having a high mortality rate owing to its advance stage on diagnosis. The mortality rate has not decreased because of its vague symptoms and late diagnosis<sup>6</sup>. Patients with a malignancy should undergo an appropriate staging procedure or debulking surgery carried out in specialized

surgical centers. This is associated with a better median survival<sup>7</sup>. Ovarian tumors can be benign or malignant. Most ovarian tumors are benign. Approximately 3% are malignant. Various studies have addressed the likelihood of malignancy within ovarian mass. The likelihood ranges from 0.38% to 18.67% and is population dependent. Approximately 10% women undergo surgery for an ovarian mass in their life<sup>8</sup>. Ovarian cancer in children and young adults are rare and their type also differs from those diagnosed in old women. Majority of ovarian tumors occurring in girls between ages of birth and 19 yrs are of non-epithelial origin, similar to other malignancies diagnosed in this age group<sup>9</sup>. Ovarian pathology, although rare, must be included in the differential diagnosis of all girls who present with abdominal pain, mass or precocious puberty. It is important for gynecologists to have a high suspicion if a young woman comes with adnexal masses and a low threshold for surgery is required<sup>10</sup>. According to a study conducted on ovarian masses in children less than 18 years old, Germ cell tumors are the most common malignancy, epithelial cell tumors are less likely. Epithelial cysts and teratomas are the most common benign lesions<sup>11</sup>.

Among Asian countries, Pakistan not only has the highest rate of breast cancer but also of ovarian cancer<sup>12</sup>. According to a study in Karachi, Ovarian cancer is the third most common malignancy in women. In Pakistan, the incidence of ovarian cancer involves a relatively younger age group with a strong family history in every 4<sup>th</sup> case<sup>3</sup>. A study in china showed 13.6% malignancy in ovarian masses in adolescents<sup>13</sup>.

### **MATERIAL AND METHODS;**

A total of young girls and women age 12 to 35 years with adnexal masses of ovarian origin with disease duration of 6 months or more. Ovarian masses were defined as Presence of any one of five categories according to the presence of septa and a solid component as follows to define ovarian masses:

- Unilocular cyst: a cyst without septa and a solid component
- Unilocular solid cyst: a unilocular cyst with a solid component
- Multilocular cyst: a cyst with at least one septum but no solid component
- Multilocular solid cyst: a multilocular cyst with a solid component
- Solid tumor: a tumor where the solid components comprise 80% or more of the tumor when assessed in two-dimensional section

Masses other than ovarian origin, pregnant patients, ovarian masses with other malignancies, ovarian masses which have already metastasized were excluded from our study.

Patients (n = 98) fulfilling inclusion criteria from outpatient department of Nishtar Hospital, Multan, Pakistan were included in the study. Informed consent was taken from each patient ensuring confidentiality and the fact that there was no risk to the patient while taking part in this study other than the disease itself. Detailed history and physical examination of our study cases were arranged by the researcher itself. These study underwent baseline investigations like blood tests (done by a pathologist having more than 5 years experience after post graduation), ultrasonography (done by a consultant Sonologist having more than 5 years experience after post graduation) and Biopsy (done by a pathologist having more than 5 years experience after post graduation) to diagnose status of ovarian masses (malignant). Data was analyzed with statistical analysis program (SPSS). The quantitative variables like age, BMI and duration of disease was presented as mean and standard deviation. Frequencies and percentages were calculated for age groups, pattern of ovarian masses (malignant), family history, use of oral contraceptive drugs, residential status and educational status.

### **RESULTS;**

Our study comprised of a total of 98 patients meeting inclusion criteria of our study. Mean age of our study cases was  $24.27 \pm 5.19$  years (with minimum age of our study cases was 15 years while maximum age was 34 years). Our study results have indicated that majority of our study cases i.e. 59 (60.2 %) were aged equal/less than 25 years. Of these 98 study cases, 43 (43.9 %) belonged to rural areas and 55 (56.1%) belonged to urban areas. Monthly family income up to Rs. 35000 was noted in 58 (59.2%) and more than Rs. 35000 was noted in 40 (40.8%) of our study cases. Of these 98 study cases, 66 (67.3%) were illiterate and 32 (32.7%) were literate. Family history of family cancer was noted in 19 (19.4%) of our study cases. Mean disease duration was  $14.78 \pm 5.13$  months. Mean body mass index of our study cases was  $26.02 \pm 2.13$  kg/m<sup>2</sup> and obesity was present in 23 (23.5 %) of our study cases. Of these 98 study cases, 27 (27.6 %) were having history of use of oral contraceptives. Malignancy was diagnosed in 23 (23.5 %) of our study cases.

**Table No. 1**  
**Stratification of Malignancy with regards to residential status.**  
 (n = 98)

Residential status	Malignancy		P – value
	Yes (n=23)	No (n=75)	
Rural (n=43)	03	40	<b>0.001</b>
Urban (n=55)	20	35	
<b>Total</b>	<b>98</b>		

**Table No. 2**  
**Stratification of Malignancy with regards to family history.**  
 (n = 98)

Family History	Malignancy		P – value
	Yes (n=23)	No (n=75)	
Yes (n=19)	15	04	<b>0.000</b>
No (n=79)	08	71	
<b>Total</b>	<b>98</b>		

### DISCUSSION;

Ovarian masses are very common and 10% of women have an operation during their life for investigation of an ovarian mass. These masses are typically found in asymptomatic women who have imaging for another reason, or for investigation of non-specific abdominal or pelvic pain. In premenopausal women, these cysts are typically benign; however, it is important to determine if further investigation is required. The overall incidence of a symptomatic ovarian cyst in a premenopausal female being malignant is approximately 1 in 1000, increasing to 3 in 1000 at the age of 50 years<sup>14,15</sup>.

Our study comprised of a total of 98 patients meeting inclusion criteria of our study. Mean age of our study cases was  $24.27 \pm 5.19$  years (with minimum age of our study cases was 15 years while maximum age was 34 years). Our study results have indicated that majority of our study cases i.e. 59 (60.2 %) were aged equal/less than 25 years. A study conducted by Tangjitgamol et al<sup>16</sup> from Thailand has reported 21 years mean age which is close to our study results. A study conducted by Gupta et al<sup>17</sup> has reported similar results.

Of these 98 study cases, 43 (43.9 %) belonged to rural areas and 55 (56.1%) belonged to urban areas. Monthly family income up to Rs. 35000 was noted in 58 (59.2%) and more than Rs. 35000 was noted in 40 (40.8%) of our study cases. Of these 98 study cases, 66 (67.3%) were illiterate and 32 (32.7%) were literate. Family history of family cancer was noted in 19 (19.4%) of our study cases. Mean disease duration was  $14.78 \pm 5.13$  months. Mean body mass index of our study cases was  $26.02 \pm 2.13$  kg/m<sup>2</sup> and obesity was present in 23 (23.5 %) of our study cases. Saluja et al from India<sup>18</sup> reported similar findings which are consistent to our study results.

Of these 98 study cases, 27 (27.6 %) were having history of use of oral contraceptives. Malignancy was diagnosed in 23 (23.5 %) of our study cases. A study conducted by Ashraf et al<sup>19</sup> has reported 35 % malignant masses which is close to our study results. Saluja et al from India<sup>18</sup> reported benign masses on clinical assessment to be 75 and malignancy in 25 % while on ultrasound 70 % benign and 30 % were malignant. These findings of Saluja et al<sup>18</sup> are close to our study results. Another study conducted by Parmer et al<sup>20</sup> also reported 25.33 % malignancy which is in compliance with our study results.

## CONCLUSION;

There was high frequency of malignancy noted among women having ovarian masses in our study cases. Ovarian masses were significantly associated with residential status and family history. Gynecologists treating such patients should monitor such suspected cases for early diagnosis which will improve treatment rate and quality of life of our patients.

## REFERENCES:

1. Meys EMJ, Rutten IJG, Kruitwagen FPM, Slangen BF, Bergmans MGM, Helen JMM, et al. Investigating the performance and cost-effectiveness of the simple ultrasound-based rules compared to the risk of malignancy index in the diagnosis of ovarian cancer (SUBSONiC-study): protocol of a prospective multicenter cohort study in the Netherlands. *BMC Cancer*. 2015;15:482.
2. Ovariancancer.org [Internet]. Ovarian Cancer National Alliance; c2016. [Accessed on 12 Sep 2016]; Available from <http://www.ovariancancer.org/about/statistics/>
3. Bhurgri Y, Shaheen Y, Kayani N, Nazir K, Ahmed R, Usman A, et al. Incidence, trends and morphology of ovarian cancer in Karachi (1995-2002). *Asian Pac J Cancer Prev*. 2011;12(6):1567-71.
4. Murthy NS1, Shalini S, Suman G, Pruthvish S, Mathew A. Changing trends in incidence of ovarian cancer - the Indian scenario. *Asian Pac J Cancer Prev*. 2009;10(6):1025-30.
5. Sankaranarayanan R1, Ferlay J. Worldwide burden of gynaecological cancer: the size of the problem. *Best Pract Res Clin Obstet Gynaecol*. 2006 Apr;20(2):207-25.
6. Elmasry K. Screening for ovarian cancer: progress and challenges. *J Fam Plann Reprod Health Care*. 2006 Jul;32(3):173-5.
7. Woo YL, Kyrgiou M, Bryant A, Everett T, Dickinson HO. Centralisation of services for gynaecological cancer. *Cochrane Database Syst Rev*. 2012;3:CD007945.
8. Rco.org.uk [Internet]. Management of Suspected Ovarian Masses in Pre menopausal Women. Green-top Guideline No. 62. RCOG/BSGE Joint Guideline, November 2011. [Accessed on 11 Sep 2016] Available from URL: [https://www.rcog.org.uk/globalassets/documents/guidelines/gtg\\_62.pdf](https://www.rcog.org.uk/globalassets/documents/guidelines/gtg_62.pdf)
9. [Ward E1](#), [DeSantis C](#), [Robbins A](#), [Kohler B](#), [Jemal A](#). Childhood and adolescent cancer statistics, 2014. *CA Cancer J Clin*. 2014 Mar-Apr;64(2):83-103.
10. Carter J, Pather S, Abdel-Hadi M, Nattress K, Dalrymple C, Beale P. Not all ovarian cysts in young woman are benign: a case series and review of the management of complex adnexal masses in young women. *Aust N Z J Obstet Gynaecol*. 2006 Aug;46(4):350-5
11. Brown MF, Hebra A, McGeehin K, Ross AJ 3rd. Ovarian masses in children: a review of 91 cases of malignant and benign masses. *J Pediatr Surg*. 1993 Jul;28(7):930-3.
12. Bhurgri Y, Bhurgri A, Hassan SH, Zaidi SH, Rahim A, Sankaranarayanan R, et al. Cancer incidence in Karachi, Pakistan: first results from Karachi Cancer Registry. *Intl J Cancer*. 2000 Feb 1;85(3):325-9
13. Liu H, Wang X, Lu D, Liu Z, Shi G. Ovarian masses in children and adolescents in China: analysis of 203 cases. *J Ovarian Res*. 2013 Jul 4;6:47. doi: 10.1186/1757-2215-6-47. eCollection 2013.
14. Jih J, Mukherjea A, Vittinghoff E, Nguyen TT, Tsoh JY, Fukuoka Y, et al. Using appropriate body mass index cut points for overweight and obesity among Asian Americans. *Prev Med*. 2014;65:1-6.
15. [Yeoh M](#)<sup>1</sup>. Investigation and management of an ovarian mass. [Aust Fam Physician](#). 2015 Jan-Feb;44(1-2):48-52.
16. [Tangjitgamol S](#)<sup>1</sup>, [Hanprasertpong J](#), [Manusirivithaya S](#), [Wootipoom V](#), [Thavaramara T](#), [Buhachat R](#). Malignant ovarian germ cell tumors: clinico-pathological presentation and survival outcomes. [Acta Obstet Gynecol Scand](#). 2010;89(2):182-9.
17. [Gupta B](#)<sup>1</sup>, [Guleria K](#)<sup>1</sup>, [Suneja A](#)<sup>1</sup>, [Vaid NB](#)<sup>1</sup>, [Rajaram S](#)<sup>1</sup>, [Wadhwa N](#)<sup>2</sup>. Adolescent ovarian masses: A retrospective analysis. [J Obstet Gynaecol](#). 2016 May;36(4):515-7.
18. Saluja JK, Roy PK, Mahadik K. validity of clinical signs and symptoms of ovarian masses. *National J Integrated Res Med*. 2014;5(4):67-71.
19. [Ashraf A](#), [Shaikh S](#), [Akram AIA](#), [Kamal F](#), [Ahmad N](#). The relative frequency and histopathological pattern of ovarian masses. [Biomedica](#). 2012;28(1):98-102.
20. Parmer P, Sehgal S, Mathur K, Yadav A. Histological study of ovarian tumors in a tertiary care hospital. *Int J Med Res Prof*. 2017;3(2):96-98.