



Ca-125 Marker Study with Histological Correlation in Ovarian Tumor

KEYWORDS

CA-125, Ovarian tumour, ELISA

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ABSTRACT *Aim & Objective: To diagnose neoplasm with the use of CA-125 and to correlate it with stage of tumor. To use CA-125 as a prognostic marker. To study the changes in values of CA-125 after treatment and to study the effectiveness of the treatment. To use CA-125 values to study recurrence or metastasis after treatment. Materials & Methods: Total 100 patients who were admitted to various departments of G.G.Hospital, Jamnagar during the time period of January-2010 to July-2011 were selected. These patients were investigated for CA-125 level in their serum with the use of ELISA both pre operative and post operatively. Ca-125 value was correlated with histopathological diagnosis of suspected mass. Results: The specificity, overall sensitivity, sensitivity in malignant conditions, positive predictive value, negative predictive value are 83.33%, 63.79%, 83.33%, 84.09%, 62.5% respectively. Conclusion: As CA-125 test has low sensitivity and low specificity it cannot be used as a sole diagnostic measure and other supportive investigations are also required in many cases for diagnosis.*

Introduction:

Epithelial ovarian carcinoma represents epithelial ovarian tumor which is the most lethal gynecologic malignancy in the world¹. It is approximately 90% of all types of malignant ovarian neoplasms². Most ovarian cancers are diagnosed in the late stage of the disease .so there are wide spread recurrences and death rate is very high³ So, there is need to search tests or methods to detect ovarian tumor in early stage. CA-125 test is one of the diagnostic approach in ovarian carcinoma. it is used in surface epithelial malignancy and more important in serous type of ovarian tumor than mucinous. 79% of ovarian cancer patients have elevated CA-125 level. It is useful in follow up cases also⁴. MUC16 was expressed by 85% of serous, 65% of endometrioid, 40% of clear cell and 36% of undifferentiated adenocarcinomas, but by only 12% of mucinous cancers⁵.

Material and Methods: :

Total 100 patients who were admitted to various departments of G.G.Hospital, Jamnagar during the time period of January-2010 to July-2011 were selected. These patients were investigated for CA-125 level in their serum with the use of ELISA (ENZYME Linked Immunosorbant Assay) test to diagnose malignancy. Both Pre operative and Post operative values were measured to see the changes in CA-125 value after tumor resection. Post operative value was measured after 45 days of surgical resection. Ca-125 value was correlated with histopathological diagnosis of suspected mass.

Results:

The specificity, overall sensitivity, sensitivity in malignant conditions, positive predictive value, negative predictive value are 83.33%, 63.79%, 83.33%, 84.09%, 62.5% respectively.

Discussion:

Total-100 cases were studied. These cases were patients admitted to various departments of G.G. Hospital, Jamnagar. These included patients with suspected malignant mass in Ovary, simple ovarian cyst, haemorrhagic cyst, der-

moid cyst, adenocarcinoma of uterus, carcinoma cervix, Lung, malignant Ascitis. Pre operative value of CA-125 was measured in every case for diagnostic purpose. Pre and post operative values of CA-125 were measured for prognostic purpose as well as to detect recurrence or metastasis. Pre-operative CA-125 measured of every patient before surgery or before starting radiotherapy. Post-operative values of all malignant conditions were measured after one and half month post operatively or after 3 cycles of radiotherapy. Benign conditions and CA-125 non related malignancy were not included in post operative follow up.

Table 1: CA-125 LEVEL IN OVARIAN TUMOR

SR.NO.	DIAGNOSIS	<35	>35	Total
1	Simple cyst	25	2	27
2	Benign cystadenoma	15	5	20
3	Borderline cyst adenoma	1	7	8
4	Ovarian carcinoma	5	25	30
5	Lung carcinoma	6	1	7
6	Other	7	1	8
7	Total	58	42	100

Table 2: CA-125 CUT OFF VALUE TO DIAGNOSE CARCINOMA

Various workers	No. Of Cases	CUT-OFF value
Helzlsouer KJ et al ⁶	110	>35u/mL
Y Touitoul et al ⁷	33	>35u/mL
Paweł Sedlaczek et al ⁸	99	>35u/ml
Bese T et al ⁹	120	>20u/ml
Chhanda Das et al ¹⁰	50	>35u/mL
Present study	100	>35u/mL

Present study has CA-125 sensitivity of 61%. It is correlated with Helzlsouer⁶. et al, Skates¹¹. et al., Brenda¹² et al., Jacobs¹³. et al. study which show respective sensitivity of 57%, 68%, 54%, & 54%. Present study has 83.33% CA-125 sen-

sitivity in ovarian carcinoma. It is correlated with Yumru¹⁴. et al, Mani¹⁵. et al., Roupaj¹⁶ et al. Nustad¹⁷.et al. study which show respective sensitivity of 78.94%, 90%, 93%, & 90%.

Present study has CA-125 specificity of 83.33% which correlated with Mani¹⁵. et al., Jacob¹³. et al, which show respective specificity of 81% & 92%. In present study, it is somewhat low, because in this study we have taken cases of endometriosis, simple cyst, lung malignancy in which CA-125 can be positive.

Present study has found that CA-125 value rises with advanced stage and sensitivity is increasing with tumor stage. (stage I,II,III,IV with sensitivity of 50%, 82.7%, 100%, 100% respectively.) Murry¹⁸ et al. also found correlation of CA-125 value with tumor stage and he found that CA-125 values of stage I were high in 50% cases, in stage II 90% cases had high value, in stage III and stage IV 100% of the cases had high values of CA-125. Rossi¹⁹ et al. showed stage I & II patient had CA-125 <500 & stage III & IV had CA-125 value >500 u/ml.

Present study has found correlation between CA-125 value and recurrence was significant in stage III and IV. Chhanda Das¹⁰ et al and Gundogdu²⁰ et al also noted same observation.

Conclusion:

Overall sensitivity is very low around 62 -65 % because it is elevated in other conditions like products of conception, endometriosis, cervical carcinoma, PID, lung conditions and GIT conditions. But its sensitivity in ovarian malignancy is > 80% and only small percentage of stage I carcinomas cannot be detected.

As CA-125 test has low sensitivity and low specificity it cannot be used as a sole diagnostic measure and other supportive investigations are also required in many cases for diagnosis.

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