

Conclusion: CA 19-9 is elevated in several conditions but most likely to be raised in dermoid cysts and mucinous tumours. CA19-9 levels need to be interpreted along with clinical and radiological findings.

Ovary: Oral Abstract

Clinical outcomes of cytoreductive surgery and HIPEC in advanced and recurrent epithelial ovarian cancers with peritoneal carcinomatosis

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Introduction: The role of surgery for peritoneal carcinomatosis (PC) has slowly evolved from palliation to potential curative intent. Attempting to remove all visible tumor deposits, "surgical cytoreduction" (CRS) was reported in 1930s for ovarian cancer and eventually became an accepted therapy with proven survival benefit. The new approach of combining CRS and hyperthermic intraperitoneal chemotherapy (HIPEC) to treat peritoneal metastasis offer hope for long term survival in this group of patients. The risk and benefit of this approach continued to be debated. A prospective study was conducted to understand the perioperative outcomes of CRS and HIPEC. **Aim:** To evaluate the perioperative outcomes associated with CRS and HIPEC in Advanced and Recurrent Epithelial Ovarian Cancer with PC.

Method: Prospective analysis of patients undergoing CRS and HIPEC from November 2014 to July 2015 was done. Inclusion criteria included localized disease in peritoneal cavity, no distant metastasis and PS <2. Grade 3/4 complications from day of surgery until 30 days postoperatively were recorded.

Results: We performed CRS and HIPEC in 20 patients from November 2014 to June 2015. HIPEC Plus regimens included Cisplatin (50 mg/m²) and Lipodox (15 mg/m²) intraperitoneally and Ifosphamide (1300 mg/m²) and Mesna (260 mg/m²). Infusion time was 90 minutes with a temperature range of 41-43°C. Out of 20 patients 6 (30%) underwent primary debulking surgery and 14 (70%) underwent secondary debulking surgery. PCI score ranged from 2-26 (mean 13.65). Mean operating time was 6.42 hrs and average blood loss was 1046 ml. Average hospital stay was 8 days and SICU stay was 4.9 days (range 3-14 days). Total 26 adverse events were observed of which grade 1 were 11 (42%), grade 2 were 8 (30%), grade 3 (11.5%) and grade 4 were 2 (8%). Most common complication was hematological (8) followed by respiratory (6), sepsis (4) renal (2), GI (2). 4 patients (5 events) developed grade 3 or 4 complications in the form of septicemia, pulmonary embolism, GI fistula of which 2 patients expired and remaining recovered although required prolonged hospitalization. Increased morbidity were observed in cases with symptomatic relapse, higher PCI score and CA 125 level higher than 250 U/ml. Most of the adverse events were grade 1 and 2 and were managed by observation only or GCSF support, transfusions and other minor interventions. The combined grade 3-4 morbidity was 20% (4 out of 20) which consisted of neutropenia, infection and respiratory complications. One patient required relaparotomy and two patients expired attributed to pulmonary embolism and septicemia respectively.

Conclusion: Enthusiasm associated with improvement in survival is often dampened by increased perioperative mortality and morbidity figures and therefore CRS and HIPEC has not yet been considered standard of care by many centres. HIPEC after extensive cytoreductive surgery for ovarian cancer is a procedure with acceptable morbidity that patients can tolerate. More follow up is needed to determine the effect of HIPEC on survival. Till such time more data are obtained by way of larger randomised trials, this approach remains investigational.

Ovary: Oral Abstract

Audit on the role and efficacy of PET/CT in recurrent ovarian cancer settings in a tertiary care centre in India

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Ovarian cancers tend to recur in 15-70% cases. CA-125 - is a tumor marker used for monitoring therapeutic response, and in surveillance, for recurrent disease. However, it has a limited role as a persistent high level can signify either recurrence or persistence of residual tumor. Metastases from ovarian

cancer primarily involve the peritoneum rather than parenchymal sites; thus, the presence of small-volume recurrence or metastatic deposits on the visceral surfaces poses a challenge for interpretation of CT and MR images. PET/CT utilizes its property of higher accumulation in malignant cells to provide both anatomic and functional information for diagnosing malignant tumors.

Objectives: The objectives of the study were to find the correlation between PET/CT findings and final histopathological diagnosis after a secondary cytoreductive surgery in suspected ovarian cancer recurrences.

Materials and Methods: PET/CT was done in cases with rising or above normal CA-125 and no radiological findings. These patients with abnormal PET/CT findings were taken up for a secondary cytoreductive surgery and histopathological proven were taken as the standard against which PET/CT positive findings was compared.

Results: The mean age in our group of patients with suspected recurrence was 53 years (Range 39-74 years). Of the 52 patients with suspected recurrence, 40 patients with a PET-CT scan with findings suggestive of an avid uptake underwent surgery. 22 patients had serous histology, 12 mucinous and 8 had clear cell carcinoma. Stage-wise distribution at the time of primary surgery is as follows stage I-3, stage II-7, stage III-26, stage IV-4. Of the 40 patients who underwent a second look surgery 32 had histopathologically confirmed recurrence. PET-CT detected a total of 86 lesions in the 40 patients who underwent surgery. Of these, 38 were in the lymph nodes 28 in para-aortic and 10 in pelvic, 32 were peritoneal lesions and 14 were pelvic, 2 were metastatic in the parenchyma of liver. Detection of the lesion on PET-CT was size dependant, of the 9 lesions were missed on PET-CT, 7 were less than 0.5 cm. The mean diameter of the lesions detected was 2.2 cm (range 0.3-6.2 cm). PET-CT accurately identified 62 of 70 histopathologically proven lesions. The overall lesion-based sensitivity of PET-CT is 88.6%, specificity 56.2%, Positive predictive value being 72.1%, negative predictive value of 69.2%. Accuracy of detecting lesions greater than 1 cm is 78.6% (44 of 56 lesions).

Conclusions: Correlation between PET/CT and histopathological disease: k (cohen value) = 0.81 which suggests excellent correlation. For selected patients with ovarian cancer recurrence may benefit from a comprehensive radiographic imaging survey (PET-CT) at the time of even no or minimal CA-125 elevation in early detection and successful cytoreductive surgical resection and an increase in overall survival.

Ovary: Oral Abstract

Clinicopathological review of epithelial ovarian tumors in young females and reproductive and survival outcome: Ten years experience from a tertiary center

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Objective: To find out the prevalence of epithelial ovarian tumors in young females and correlation with reproductive and survival outcome.

Design: Retrospective study.

Setting: Tertiary referral hospital.

Methods: A retrospective analysis of females from 9-35 year of age group treated for ovarian tumors between January 2003 to July 2013 was performed. Variables studied included age, presenting symptoms, imaging, tumor markers, surgical findings, type of surgery, histopathology reports and follow-up.

Main Outcome Measures: Histopathological variant, FIGO stage, reproductive and survival outcome.

Results: A total of 155 patients were found to have ovarian tumors. Mean age at time of diagnosis was 24.9 ± 1.8 years (range 9-35). Clinical presentation in majority of the cases was abdominal pain in 68 (43.8%), ascites in 13 (8.3%) mass in abdomen in 25 (16%), followed by irregular menstrual cycles in 15 (9.6%), infertility in 18 (11.6%) 12 (7.7%) were found to be incidental on ultrasound examination while 4 women were found to have virilising symptoms. There were 76 (49.1%) cases of epithelial ovarian tumors, 6 (0.03%) of borderline tumors and 30 (19.3%) were of malignant ovarian tumors while 40 (25.8%) were benign. Stage IA (N = 80), Stage I 8 (N = 2), Stage III (N = 6) and Stage IV (N = 12). Females were further subdivided into three age groups 9-15 years, 15-25 years and 25 to 35 years for determining outcome of epithelial tumors. Reproductive and survival outcome were studied in each stage.

Conclusions: Limited data exists about the histological type distribution, surgical treatment and overall survival of epithelial ovarian tumors in women aged below 35 years. Young patients have higher overall progression-free survival and a better clinical outcome than older patients. Any women presenting with pain and nonspecific symptoms should be investigated and evaluated properly.

Ovary: Oral Abstract

Association of organochlorine pesticides and risk of epithelial ovarian cancer: A case control study

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Background: Organochlorine pesticides (OCPs) belongs to the class of hydrocarbons characterized by its cyclic structure. Due to their persistent nature OCP gets accumulated in the food chain and cause possible adverse health effects specifically various hormone mediated disorders. Ovarian cancer is also one of the hormone dependant cancer and begins with the transformation of cells that comprises the ovaries including surface epithelial, germ cells, etc. It has been suggested that endocrine disruption, exposure to xenobiotic and subsequent oxidative stress may antedate ovarian cancer and contribute to its pathogenesis. However, no report regarding any association of OCP level with etiology of epithelial ovarian cancer is so far available among North Indian population.

Methods: A total of 120 subjects were included in this case control study, consisting of 60 histological proven cases of epithelial ovarian cancer and 60 controls subjects. Quantification of OCP levels was done by Perkin Elmer Gas Chromatograph (GC) equipped with 63Ni selective Electron Capture Detector. **Results:** Levels of b-HCH, endosulfan I, p'p'-DDT, p'p'-DDE and heptachlor were found significantly high in cases of epithelial ovarian cancer as compared to control. A significant association was also observed between higher levels of b-HCH and heptachlor and EOC with odds ratio of 2.76 and 2.97 respectively.

Conclusion: Results indicate the plausible role of OCPs with the pathogenesis of epithelial ovarian cancer among North Indian population. Moreover, it is one of the first report suggesting significant level of heptachlor among north Indian women population with epithelial ovarian cancer.

Ovary: Oral Abstract

Female adnexal tumour of probable wolffian origin: A rare case report

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Introduction: Female adnexal tumour of probable wolffian origin (FATWO), is a rare neoplasm arising within the leaves of a broad ligament or hanging from it or a fallopian tube. It is considered a tumour of low malignant potential which shares similar histological and immunochemical features with mesonephric remnants.

Case: Here we present a case report of a 40 years old, nulliparous female who presented with acute pain abdomen and fever since 2 days. Her LMP was 30.09.2015 and her past menstrual cycles were irregular. She was nulliparous with history of infertility. In past medical history revealed her to be a known diabetic for 5 years, with uncontrolled blood sugars. Patient was hemodynamically stable. On per abdominal examination there was generalized tenderness all over the abdomen with guarding and rigidity. On per speculum examination vaginal discharge was noted with unhealthy cervix. Per vaginal examination revealed a tender mass of approximately 8 cm × 6 cm was felt on left fornix. All her base line investigations were normal. The salient investigations like CA-125 35.60 IU/L, CEA 3.46, Beta-HCG 2.29 were normal. On imaging, MRI showed a well defined solid cum cystic space occupying lesion of 9 cm × 8 cm arising from left adnexa with evidence of right hemorrhagic adnexal cyst 6 cm × 7 cm and hydro/hemosalpinx noted. There was well defined space occupying lesion in the pelvis on the left of the uterus which is likely a broad ligament leiomyoma. Diagnosis of acute abdomen was made with adnexal mass probably infectious in origin. Injectable antibiotics were started. In view of acute pain abdomen decision for surgical intervention was taken. Laparoscopic findings revealed bilateral ovarian abscess with left sided broad ligament mass (solid consistency)

probably leiomyoma. Right tube and ovary were normal. Drainage of tubo-ovarian abscess with left salpingo-oophorectomy with right salpingectomy with adhesiolysis was done and sent for histopathology. HPE reported Female adnexal tumour of probable wolffian origin (FATWO) which was positive for vimentin and CD10, possibly arising from left sided broad ligament. Patient underwent radical hysterectomy with omentectomy with appendectomy was done in view of FATWO.

Conclusion: Female adnexal tumour of probable wolffian origin (FATWO), is a rare neoplasm which is usually considered as benign, although in some cases metastasis on recurrences have been reported even after a long interval following the initial diagnosis. Pre-operative diagnosis of FATWO is very difficult because of the rarity of the disease and paucity of the literature available.

Ovary: Oral Abstract

Role of human epididymis protein 4 for detection of ovarian carcinoma in adnexal masses: A pilot study

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Introduction: HE4 is a novel tumour biomarker used for early diagnosis of ovarian cancer. This study evaluated the diagnostic accuracy of HE4 alone and in combination with CA125, risk of malignancy index (RMI), risk of malignancy algorithm (ROMA).

Methods: It was a cross sectional study conducted recruiting 88 women with adnexal masses who were planned for surgery. After baseline work up and ultrasound examination, serum samples were collected for estimation of CA 125 and HE4 levels. Serum HE4 levels were estimated using ELISA kit. RMI and ROMA score were calculated and diagnostic accuracy of HE4, CA 125, RMI, ROMA and their combination were compared. Cut off for HE4 and ROMA score were calculated using ROC curve.

Results: Of 88 subjects, 66 were analyzed with 19 malignant (including 5 LMP) and 47 benign cases. The median value of HE4 among malignant cases was found to be significantly higher than among the benign cases. PPV and NPV of HE4 at a cut off 130.8 pMol/ml was 85.7% and 77.9% respectively. Highest PPV (88.9%) with acceptable NPV (80.7%) was found with ROMA followed by HE4 (PPV 85.7%; NPV 77.97%), RMI (PPV 76.92%; NPV 83%) and CA125 (PPV 52%; NPV 80.85%).

Conclusion: HE4 levels were lower in Indian population both in malignant and benign tumours as compared to other studies. HE4 is a good discriminator and gives best accuracy when it is combined with CA125 in a logistic algorithm, ROMA.

Ovary: Oral Abstract

Gestational trophoblastic neoplasia: Retrospective analysis of clinical profile, treatment pattern and outcome

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Background: Gestational trophoblastic disease is a spectrum of cellular proliferation arising from the placental villous trophoblast. Gestational trophoblastic neoplasia (GTN) is a collective term for GTD that invade locally or metastasize. GTD includes hydatidiform mole (complete and partial) and GTN include invasive mole, choriocarcinoma, placental site trophoblastic tumor and epithelioid trophoblastic tumor.

Aim: To evaluate clinicopathological profile, treatment pattern and clinical outcome in patients with gestational trophoblastic neoplasia (GTN).

Materials and Methods: Twelve cases of gestational trophoblastic neoplasia treated between 2012 to November 2015 in Department of Radiotherapy – II, PGIMS, Rohtak were evaluated in this retrospective study. Data was analyzed on the basis of age, histopathology, stage, type of treatment received and treatment related toxicities. Disease free survival was estimated.

Result: Out of 12 women 7 (58 %) had hydatidiform mole, 4 (33%) invasive mole and 1 (8%) had choriocarcinoma. All the cases were given chemotherapy. Two patients had low risk disease. Among high risk group seven patients