DOPPLER ULTRASOUND VERSUS PELVIC MAGNETIC RESONANCE IMAGING IN DIAGNOSIS OF OVARIAN MASS IN TEENAGERS: A PROSPECTIVE STUDY

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Introduction/Background Sonography is the first imaging test to examine women with suspected adnexal masses due to its widespread availability, relatively low cost, and high sensitivity. Magnetic resonance imaging (MRI) offers valuable information for the characterization of numerous ovarian masses. MRI can identify an adnexal mass and may be useful to differentiate between benign and malignant tumors.

Methodology A prospective study, included 32 patients with 20 years or less and with adnexal mass attending OB/GYN clinic, admitted and prepared for surgery at Mansoura University Hospitals. All patients were examined of transabdominal US or transvaginal US (for married) according to scanning conditions. Twenty-three of the studied cases had undergone pelvi-abdominal MRI. The result of Doppler ultrasound and MRI were compared to histopathology as gold standard.

Results The mean age was 17.78±3.47 (8–20) years, mean presentation was lower abdominal pain.

Of the cases with pathologically proven benign lesions; their ultrasound conclusion using IOTA simple rules revealed 86.3% were benign, 10.3% non-benign & non-malignant and 3.4% both benign & malignant detected. Of the cases with malignant lesions; 75% were malignant and 25% benign as detected by Ultrasound conclusion. Of the cases with borderline lesions; 75% are malignant and 25% both benign & malignant as detected by Ultrasound. There was a significant association between MRI findings and histopathological findings. Of the benign masses by histopathology; 90% were benign, 10% inconclusive and 0% malignant as detected by MRI. Of the malignant cases; 100% were malignant as detected by MRI. While in borderline cases; 100% were malignant by MRI.

MRI had 100% sensitivity, 90% specificity, 92.8% accuracy and ultrasound achieved 87.5% sensitivity, 96.2% specificity and 91.2% accuracy.

Conclusion There were no significant differences in sensitivity, specificity, and accuracy of Doppler ultrasound and pelvic MRI in characterization of ovarian masses in teenagers. MRI should be used for when US results are equivocal.

Disclosures The authors declare no conflicts of interest.

MULTI-OMICS CHARACTERIZATION OF CHEMOREFRACTORY HIGH-GRADE SEROUS CANCER

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Introduction/Background Neoadjuvant chemotherapy (NACT) is the preferred treatment strategy for high-grade serous (ovarian) cancer (HGSC) patients, if optimal cytoreduction is estimated unachievable at the time of the diagnosis. In such cases, intrinsic sensitivity to standard-of-care (platinum and taxane combination therapy) is a major determinant of the disease progression. With data from 159 NACT-treated patients, diagnosed during years 2009–2022 and enrolled in the prospective DECIDER study, we sought to define the cellular and molecular features associated with intrinsic resistance to chemotherapy.

Methodology Herein, we tested for association between patient survival and genomic summary statistics for mutation signatures, sub-clonal heterogeneity, and driver aberrations. Furthermore, we used mRNA sequencing data for agnostic, hypothesis-generating, analyses to infer differential pathway activity the between chemo-refractory and responsive cancers. The groups were defined according to outcome from the primary therapy (progressive/stable disease vs. partial/complete response) and progression-free interval (<45 days vs. >6 months). The novel hypotheses were further explored with whole-genome sequencing, methylation sequencing, and imaging data.

Results Homologous recombination (HR) deficiency and loss-of-function mutations in HR genes were associated with longer patient survival in a multivariable Cox regression model. In terms of other genomic or clinical features, the chemoresistant cancers resembled the responsive cancers. A Progeny analysis of differential pathway activity suggested that the JAK-STAT pathway activity was lower in the carcinoma cells of the chemo-refractory cancers. A gene set enrichment analysis of Reactome pathways supported this finding, indicating lower expression of Interferon alpha/beta and gamma pathway transcriptional target genes and interleukins CXCL10 and CXCL11.

Conclusion Our analyses support a model where the primary response to neoadjuvant chemotherapy of HGSC is mediated by the immune system. Immunologically cold tumours have a poor response to the treatment, which is manifested in a chemo-refractory disease.

Disclosures The authors declare no conflicts of interest.

DESIGNING A CLINICAL TRIAL WITH CHAT GENERATIVE PRE-TRAINED TRANSFORMER (CHATGPT) ON THE ROLE OF HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY (HIPEC) IN OVARIAN CANCER

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Introduction/Background We live in an area of artificial intelligence (AI), currently used in research and medical practice. One of the most recent developments is Chat Generative Pre-trained Transformer (ChatGPT), launched on November 30, 2022 by OpenAI, an AI laboratory. The ChatGPT faced serious critiques from the scientific community particularly its use on manuscript writing. However, soon its potential use and aid in medical education and scientific writing have been appreciated by many researchers and publishing groups. We aimed to investigate the ChatGPT’s performance on designing a new randomised clinical trial (RCT) on the role of hyperthermic intraperitoneal chemotherapy (HIPEC) in ovarian cancer.

Methodology We commend following to ChatGPT “Design a new randomized controlled clinical trial on the role of HIPEC...”