Oral (O07)

Gynecologic Cancer Screening

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Diagnosis of early-stage epithelial ovarian cancer (EOC) using comprehensive serum glycopeptide spectra analysis combined with artificial intelligence (CSGSA-AI)

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Objective: We aimed to develop an artificial intelligence (AI)-based comprehensive serum glycopeptide spectra analysis (CSGSA-AI) method in combination with convolutional neural network (CNN) to detect aberrant glycans in serum samples of patients with epithelium ovarian cancer (EOC).

Methods: A total of 97 serum samples were collected from patients with early-stage EOC at the time of ovarian mass detection prior to the initiation of any treatment (stage I). The non-EOC control group (n=254) comprised both healthy women (n=220) and women with gynecologic benign diseases (n=34). We used AlexNet, the latest CNN-based technology, as a discrimination tool for CSGSA to identify early-stage EOC. To facilitate CNN training, we converted numerical data of glycopeptide expression to 2D barcode images and let CNN learn and distinguish early-stage EOC. CNN was trained using 60% samples and validated using 40% samples. To further enhance the learning efficacy and diagnostic performance of CNN, we added cancer antigen 125 (CA125) and HE4 information into the 2D barcode by changing the color (multicolored model).

Results: The sensitivity, specificity, positive predictive value, negative predictive value and area under the curve (AUC) of CSGSA-AI were 79%, 96%, 89%, 92%, and 88%, respectively. When CNN was trained with 2D barcodes colored on the basis of serum levels of CA125 and HE4 (multicolored model), AUC of 95% was achieved.

Conclusion: CSGSA-AI has the potential to be a useful tool for diagnosis of early-stage epithelial ovarian cancer.

Oral (O08)

Epithelial Ovarian Cancer including Borderline Tumor

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Quality-adjusted time without symptom or toxicity and quality-adjusted progression-free survival of first-line maintenance niraparib in patients with advanced ovarian cancer

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Objective: This post hoc analysis of the phase 3 PRIMA trial examined quality-adjusted time without symptom or toxicity (QA-TWiST) and quality-adjusted progression-free survival (QA-PFS) of patients with ovarian cancer on first-line maintenance niraparib vs. placebo.

Methods: QA-TWiST analyses were performed, defining TOX as the mean duration where patients experienced grade ≥ 2 adverse events (fatigue/asthenia, nausea, vomiting, abdominal pain, and abdominal bloating) from randomization to disease progression/censoring. Mean QA-TWiST was calculated as