HOMOLOGOUS RECOMBINATION DEFICIENCY AND CYCLIN E1 AMPLIFICATION ARE CORRELATED WITH IMMUNE CELL INFILTRATION AND SURVIVAL IN HIGH-GRADE SEROUS OVARIAN CANCER

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Conclusions Molecular profiles and TME are associated with OS. Molecular profiles show that TME differs per profile, with higher immune cell densities showing a favorable OS, even within the profiles. HGSOc does not reflect one entity but comprises different entities based on molecular profile and TME which could assist with patient-tailored treatment in the future.

Poster rounds with the professors: Group 06

PREDICTION OF PLATINUM-BASED CHEMOTHERAPY RESISTANCE IN EPITHELIAL OVARIAN CANCER USING APPARENT DIFFUSION COEFFICIENT OF MAGNETIC RESONANCE IMAGE AND MACHINE LEARNING ALGORITHM

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Methods The ADC of MRI was preoperatively evaluated on the largest solid portion of the ovarian mass on the axial MRI maps. All patients underwent platinum-based chemotherapy after cytoreductive surgery. Logistic regression and machine learning applications were used to investigate the role of the ADC and clinical factors for the prediction of platinum-based chemotherapy resistance in ovarian cancer.

Results Of the 168 patients, 97 had high-grade serous ovarian cancer (HGSOc) and 71 had non-HGSOc patients; 33 clear cell carcinoma, 18 mucinous carcinoma, 15 endometrioid carcinoma, 5 low-grade serous carcinoma. The patients were divided into the platinum-sensitive group (n=146) and the platinum-resistant group (n=22). The gradient boosting machine algorithm showed the highest accuracy in differentiating histologic types of ovarian cancers (accuracy: 0.91, AUC: 0.93). In the ROC curve, CA 125 and the ratio of solid to the total area were significantly associated with platinum-based chemotherapy resistance (AUC: 0.758, AUC: 0.687, respectively). The deep learning algorithm demonstrated increased accuracy (AUC: 0.814). In the regression analysis, the area of the solid portion was significantly related to the resistance to chemotherapy (hazard ratio: 1.033, p=0.014).

Conclusions The ADC and area of the solid portion on MRI using machine learning can be helpful to predict histologic types and resistance of platinum-based chemotherapy in EOC.