and 0.181–0.837). Additionally, PFI >12 months was associated with better PFS (adjusted HR, 0.489; 95% CIs, 0.291–0.822).

Conclusions PFI >12 months and optimal cytoreduction potentially predicted 13 or more cycles of BMT and were related to improved survival in the first platinum-sensitive recurrence of ovarian cancer.

**Abstract EP277/#369**

**ABDOMINAL TISSUE CONCENTRATIONS CARBOPLATIN AND INFLAMMATORY PROTEIN IN A HIPEC PROCEDURE – ASSESSMENT IN A NOVEL EXPERIMENTAL PORCINE MODEL**

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Objectives Peritoneal dissemination from ovarian cancers is associated with poor prognosis and rapid disease progression. Hyperthermic intraperitoneal chemotherapy (HIPEC) is an antineoplastic treatment, which has improved survival and recurrence-free survival, but little is known about the acquired chemotherapy concentrations in local tissues. The aim of this study was to assess concentrations of carboplatin and inflammatory protein markers during and after HIPEC treatment dynamically and simultaneously in various abdominal organ tissues by means of microdialysis in a novel porcine model.

Methods 8 pigs underwent imitation cytoreductive surgery followed by HIPEC (90 min) using a carboplatin dosage of 800 mg/m². Microdialysis catheters were placed for sampling of drug concentrations in various tissues: peritoneum, liver, bladder wall, mesentery, and in different depths of one mm and four mm in the hepatoduodenal ligament and rectum. During and after HIPEC, dialysates and blood samples were collected over eight hours.

Results No significant differences in mean carboplatin AUCo-last (range: 2657–5176 min × μg/mL), mean carboplatin Cmax (range: 10.6–26.0 μg/mL) and mean carboplatin Tmax (range: 105–206 min) were found between the compartments. In plasma there was a tendency towards lower measures. Inflammatory protein marker analysis is in progress, and there are no available results at the time of submission.

Conclusions Equal carboplatin distribution in abdominal organ tissues, detectable concentrations for at least six hours after HIPEC completion, and a carboplatin penetration depth of minimum four mm were found. There are no available conclusions for the inflammatory protein marker results at the time of submission.

**Abstract EP278/#101**

**APPLICATIONS OF MACHINE LEARNING IN OVARIAN CANCER: A SYSTEMATIC REVIEW**

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Objectives Machine learning (ML) may play a crucial role in ovarian cancer prediction. The objective was to review the literature on the application of ML in OC and report the most commonly used algorithms and their performance compared to existing prediction tools and traditional statistics.

Methods This is a systematic review of published literature from January 1985-March 2021 on the use of ML in OC. An extensive search of electronic library databases was conducted. Four independent reviewers screened the articles initially by title then full text. Quality was assessed using the MINORS criteria.

Results Applications of ML were in clinical datasets (33%), preoperative diagnostics (30.7%), serum biomarkers (21.6%), genomics (12.5%), and cytoreductive outcomes (2.3%). Most commonly applied algorithms were Support Vector Machine (SVM) (28%) and Neural Networks (NN) (25.28%). The number of publications on ML in OC increased three-fold from 20 (1994–2010) to 67 (2011–2021). Only 9 studies compared ML to traditional statistics. Among 29 clinical dataset studies, 4 compared ML with logistic regression (LR). Two studies
reported better performance with ML compared to LR (accuracy: 0.88 vs 0.84, p=0.15), one study performed similarly and one study performed worse. Only one preoperative diagnostic study compared ML with LR. SVMs outperformed LR in classifying ovarian masses as benign or malignant (sensitivity: 0.88 vs. 0.70). five studies reported overall survival outcomes. One study found that NN classifiers outperformed LR in predicting overall survival (AUC: 0.72 vs. 0.62).

Conclusions Most ML models outperformed existing prediction tools and traditional regression models. However, larger datasets would be required to validate findings for future use in this area and identify the areas in which ML can improve OC care.

**EP279/#434 RESULTS OF A CROSS-SECTIONAL STUDY: PREVALENCE AND ASSOCIATED RISK FACTORS OF DEPRESSION IN HOSPITALIZED PATIENTS WITH OVARIAN CANCER**

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**Objectives** The aim of this study was to determine the prevalence of depression in women with ovarian cancer and investigate its relationship with the clinicopathological and epidemiological characteristics of ovarian cancer.

**Methods** This cross-sectional study recruited 228 patients. The state of depression was assessed via self-evaluation using Patient Health Questionnaire-9. Pathohistological and immunohistochemical analyses was used on the material obtained after the surgical removal of ovarian tumors, determining all significant clinical and morphological parameters.

**Results** The overall prevalence of depression in patients with ovarian cancer (45.78%) was higher than those with non-malignant tumors (9.17%) (p < 0.05). Univariate analysis showed that age, marital status, histological type, clinical stage, serum CA125 and HE4 levels, lymph node metastasis, ascites, and Ki-67 expression level (p < 0.05) were risk factors for depression. After entering these variables into a stepwise logistic regression model (backward LR method), the multivariate analysis identified age, histological type (p < 0.05), and high serum CA125 level (p < 0.05) as risk factors for depression in patients with ovarian cancer.

**Conclusions** Ovarian cancer patients have a high risk of depression. Age, histological type, and high serum CA125 level were risk factors associated with the presence of depression symptoms in Chinese women with ovarian cancer.

**EP280/#559 REAL-WORLD PROGRESSION-FREE SURVIVAL AND OVERALL SURVIVAL FOR PATIENTS WITH ADVANCED OVARIAN CANCER UTILIZING PARP INHIBITOR SECOND-LINE MAINTENANCE THERAPY VS ACTIVE SURVEILLANCE**

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**Objectives** Since 2017, the National Comprehensive Cancer Network has recommended PARP inhibitors (PARPi) as second-line (2L) maintenance treatment for patients with BRCA± ovarian cancer (OC). We present recent estimates of real-world PFS and OS for patients on 2L PARPi maintenance therapy vs active surveillance (AS).

**Methods** From an electronic health record database of US Oncology Network (~1,200 physicians from >470 sites), adult females were included if diagnosed with advanced OC, received a 2L platinum-containing regimen for advanced OC, and had ≥2 visits between 1/1/2016 and 12/1/2020. A subset of charts was further reviewed to confirm eligibility and assess PFS. Patients were followed until earliest of: 3/31/2021, last patient record, or death. Kaplan-Meier survival methods and log-rank tests were used to estimate and compare OS and PFS of the groups to 24 months.

**Results** 1154 patients met inclusion criteria for advanced OC and PARPi therapy or AS during the 2L maintenance period. Of these, 143 patient charts were manually reviewed (85 PARPi, 58 AS). PFS probability from initiation of 2L maintenance to 24 months was higher in the PARPi group vs AS (22% vs 10%; P=0.0004) (figure 1). OS probability was also significantly higher in the PARPi group vs AS (62% vs 47% at 24 months; P=0.0364) (figure 2).

**Conclusions** This study of PARPi therapy vs AS confirms the efficacy benefits demonstrated in randomized studies of