Objectives Approximately 20% of ovarian cancers are due to an underlying germline pathogenic variant. While several genes have been well-established in the development of hereditary ovarian cancer (e.g. BRCA1/2, RAD51C, RAD51D, BRIP1, mismatch repair genes), the role of partner and localizer of BRCA2 (PALB2) remains uncertain. We sought to evaluate the association between PALB2 germline pathogenic mutations and ovarian cancer in the first meta-analysis on this topic.

Methods We conducted a systematic review and meta-analysis in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PROSPERO no.: CRD42021281325). We searched key electronic databases to identify studies evaluating multigene panel testing in patients with ovarian cancer. Eligible trials were subjected to meta-analysis.

Results Thirty studies met inclusion criteria. We found 55,137 cases of ovarian cancer with information available on germline PALB2 pathogenic variant status. Among ovarian cancer cases with PALB2 sequencing data available, 0.4% demonstrated a germline pathogenic variant in the PALB2 gene and the pooled odds ratio (OR) for having a PALB2 mutation was 2.31 (95% CI 0.89–5.98). Among 94 patients with a germline PALB2 pathogenic variant, the pooled odds ratio (OR) for developing ovarian cancer was 2.85 (95% CI 1.58–5.13) relative to 33,855 patients without PALB2 mutations.

Conclusions Our meta-analysis demonstrates that the pooled OR for developing ovarian cancer with an underlying PALB2 germline pathogenic variant was 2.85 (95% CI 1.58–5.13), exceeding the baseline population risk of 1–2%. Further studies related to PALB2 mutations and cancer family history are needed to improve management recommendations for patients.

EP273/#307 QUALITY-OF-LIFE OUTCOMES AFTER CYTOREDUCTIVE SURGERY FOR ADVANCED STAGE OVARIAN CANCER

Objectives This study aims to describe the quality-of-life (QoL) outcomes of patients with advanced-stage ovarian cancer after cytoreductive surgery until two year after surgery.

Methods Data is derived from the PlaComOV-study, a single blinded randomized controlled trial with inclusions between 2018 and 2020. Women with FIGO stage IIIb–IV epithelial ovarian cancer were randomly allocated to have a CRS with or without the use of neutral argon plasma device. The QoL is measured pre-operatively, 4 weeks, 6, 12 and 24 months after CRS. Questionnaires of the European Organization for Research and Treatment of Cancer (EORTC) QLQ-C30 and OV-28 and EQ-5D-5L are used.

Results 326 women were assigned to this trial. At baseline 286 (88%) women had completed QoL questionnaires. At 12 months 228 (80% of the patients alive) and at 24 months 137 (61% of all patients alive) provided QoL data. Complete CRS was the most independent predictor for a higher QoL at 12 months (76.4 vs 62.8 points; p<0.001). The mean global QoL score at 12 months was significantly higher in the PlasmaJet group than in the control group, corrected for surgical outcome (77.1 vs 70.7 points; p=0.023). The use of HIPEC or getting a stoma do not explain these differences.

Conclusions Adjuvant use of the PlasmaJet during CRS for advanced-stage ovarian cancer resulted in a significantly higher QoL at 12 months after surgery. Complete CRS as surgical outcome is the most independent predictor for a higher QoL.

EP274/#330 PREOPERATIVE CANCER ANTIGEN 125 LEVEL AS A PREDICTOR FOR COMPLETE CYTOREDUCTION IN OVARIAN CANCER? A PROSPECTIVE COHORT STUDY AND SYSTEMATIC REVIEW

Objectives The amount of residual tumor after cytoreductive surgery (CRS) for advanced-stage ovarian cancer is correlated with overall survival. This study aims to describe the predictive value of pre-treatment serum cancer antigen 125 (CA-125) and the normalization of serum CA-125 after neoadjuvant chemotherapy (NAC) on surgical outcome.

Methods A systematic review and a prospective clinical study were performed. The Embase, Medline, Web of science, Cochrane Library and Google Scholar databases were searched from database inception to April 2022. The clinical study is part of a randomized controlled trial, the PlaComOV-trial. Patients with FIGO stage IIIb-IV ovarian cancer who underwent CRS were enrolled from 2018 to 2020. A regression analysis was performed to demonstrate correlations between preoperative serum CA-125, reduction of serum CA-125 after NAC and surgical outcome.

Results Fourteen relevant articles were analyzed of which eleven reported that the lower preoperative serum CA-125 the higher the probability of achieving complete CRS. In the prospective clinical study, patients who underwent interval CRS with preoperative serum CA-125 ≤35kU/L had a higher probability of achieving complete CRS than patients with serum CA-125 >35kU/L (85% vs 67%, OR2.791, 95%CI 1.439–5.414, P=0.002). In multivariable analysis, absence of ascites and peritoneal carcinomatosis, FIGO stage and use of PlasmaJet during surgery appeared to be independent predictive factors for complete CRS.

Conclusions In literature, preoperative serum CA-125 ≤35kU/L was associated with a significantly higher percentage of complete CRS. In the present study, preoperative serum CA-125 ≤35kU/L did not present as an independent predictor for complete CRS in multivariable analysis.