for precision prevention. This study aims to estimate cost-effectiveness and population impact of parallel panel-germline and somatic BRCA-testing all OC-patients incorporating PARP-i therapy, compared with family-history (FH)/clinical-criteria based germline BRCA-testing in UK and USA health-systems.

**Methodology** Microsimulation cost-effectiveness modelling using data from 2,391 unsellected population-based OC-patients recruited to UK (n = 1,483) and USA (n = 908) research studies. The lifetime costs-&-effects of BRCA1/BRCA2/RAD51C/RAD51D/BRIP1 germline- and somatic BRCA1/BRCA2-testing in all OC-cases (BRCA-mutated patients undergo PARP-i therapy) (Strategy-A), was compared with FH/clinical-criteria based germline BRCA-testing (Strategy-B). Unaffected relatives with germline BRCA1/BRCA2/RAD51C/RAD51D/BRIP1 PVs identified through cascade-testing undergo relevant OC and breast-cancer (BC) risk-reduction interventions (risk-reducing salpingo-oophorectomy, MRI/mammography, chemoprevention or risk-reducing-mastectomy). We also evaluated cost-effectiveness of germline-panel testing alone (without PARP-i therapy). A lifetime horizon with payer/societal perspectives, alongside probabilistic and one-way sensitivity-analyses are presented. Incremental-cost-effectiveness-ratio (ICER): incremental-cost per quality-adjusted-life-year (QALY) gained, was compared to £30,000/QALY(UK) and $100,000/QALY(USA) thresholds. OC-incidence, BC-incidence and prevented deaths were estimated.

**Results** Compared with clinical-criteria/FH-based BRCA-testing, BRCA1/BRCA2/RAD51C/RAD51D/BRIP1 germline- and somatic BRCA1/BRCA2 somatic-testing all OC patients incorporating PARP-i therapy demonstrates UK-ICERs (payer-perspective = £42,433/QALY; societal-perspective = £41,622/QALY) and USA-ICERs (payer-perspective = $145,071/QALY; societal-perspective = $144,564/QALY) are higher than UK/NICE and USA cost-effectiveness thresholds. Strategy-A becomes cost-effective if PARP-i costs fall by 32% (UK) or 33% (USA), or overall-survival (OS) with PARP-i reaches HR = 0.28. Unselected panel-germline testing (without PARP-i therapy) is extremely cost-effective from payer-perspective (UK-ICER = £11,291/QALY; USA-ICER = $68,808/QALY); and societal-perspectives (UK-ICER = £6,923/QALY; USA-ICER = $65,786/QALY). One year’s unselected testing could prevent 199 BC/OC-cases and 236 deaths in UK-women; and 523 BC/OC-cases and 581 deaths in USA-women.

**Conclusion** Unselected panel-germline and somatic BRCA-testing is currently not cost-effective but becomes cost-effective if PARP-i costs fall by 32%-33% or OS reaches HR = 0.28. Regarding germline-testing, unselected panel-germline testing is highly cost-effective and should replace BRCA-testing alone.

**2022-RA-1312-ESGO**  
**FEASIBILITY OF CARBOPLATIN MONOTHERAPY VERSUS CARBOPLATIN-PACLITAXEL IN FRAIL ELDERLY EPITHELIAL OVARIAN CANCER PATIENTS**

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**Introduction/Background** Frail elderly patients with ovarian cancer (OC) are often treated with 3-weekly carboplatin (3wC) rather than carboplatin-paclitaxel (CP). Elderly Women With OC (EWOC)-1 trial demonstrated that 3-weekly carboplatin-paclitaxel (3wCP) achieved better survival outcomes and was more feasible (defined as the ability to complete 6 chemotherapy cycles without disease progression, death, or premature discontinuation due to toxicity) than 3wC in patients ≥70 years old (≥70 yo) with FIGO stage III/IV OC. We compared the feasibility of treatment with 3wC or 3wCP in frail elderly OC patients.

**Methodology** Data from two cancer centres was retrospectively analysed for newly-diagnosed stage III/IV OC patients ≥70 yo treated with 3wC or 3wCP. Frailty was scored using the Charlson-Comorbidity Index (CCI) and ECOG performance status. Toxicity was graded using CTCAE v5.0.
Results 107 patients received 3wC (n=31) or 3wCP (n=76, 2 receiving 3wC with weekly paclitaxel). Patients treated with 3wC rather than 3wCP were older ((median age 83 vs. 75 (p<0.001)) with more comorbidities (median CCI 4 vs. 3 (p<0.001)). Treatment was discontinued for 4 of the 31 (13%) 3wC patients and 6 of the 76 (8%) patients who received 3wCP, with death and disease progression the most common reasons for discontinuation respectively, although the difference in discontinuation rate was not significant (p>0.05). Dose reductions occurred in 16% (5/31) of patients who received 3wC and 57% (43/76) of patients treated with 3wCP, most commonly due to haematological toxicity and peripheral neuropathy respectively.

Conclusion In spite of the limitations of our retrospective analysis, 3wCP appears as feasible as 3wC monotherapy for frail ≥70yo FIGO stage III/IV OC patients, in keeping with the EWOC-1 data, and should be considered in this cohort given that it has been shown to achieve better survival outcomes. Toxicity profiles differ and dose reductions may be required in each treatment arm.

Abstract 2022-RA-1312-ESGO Figure 1 Overview of toxicities leading to dose reduction and treatment discontinuation in 3wCP and 3wC cohorts

Abstract 2022-RA-1313-ESGO CLINICAL SIGNIFICANCE OF HER2/neu, MUC1, ESTROGEN AND PROGESTERONE RECEPTOR EXPRESSION IN MALIGNANT EPITHELIAL OVARIAN TUMORS

Introduction/Background Ovarian cancer is a common malignancy associated with poor outcomes. The tumour microenvironment (TME) has been shown to be important in tumorigenesis and prognosis. Tumour associated macrophages (TAM) are the most abundant type of immune cells in TME. Depending on stimuli, TAM may become anti-tumorigenic M1-type or pro-tumorigenic M2-type (CD163+). The significance of TAM in young women with ovarian tumours has not been previously established. We aimed to characterise the TAM in the TME of both borderline (BOT) and malignant ovarian tumours in young women.

Methodology Patients under the age of 50, who underwent surgical management for borderline or malignant ovarian tumours at a large tertiary UK institution in 2010–2015 were included. Full clinical, pathological and outcome data were collected. Primary tumour sections were reviewed and immunohistochemically stained. Intra-tumoral and stromal CD68+/CD163+ cells were scored following the International Immuno-Oncology Biomarker Working Group guidelines. Percentage stromal infiltration was calculated in relation to the stromal area and mean cell count and percentage infiltration per case calculated.

Results 57 patients; 23 with BOT and 24 cancers, were included. The mean age was 38 years, and the commonest histological type was serous carcinoma (n=21). Intra-tumoral carcinoma. MUC1, HER2/neu, Estrogen, Progesterone antibodies were applied immunohistochemically to pathological samples of the patients and the expression status of these markers, relationship between clinical-pathological features and prognosis were analyzed by statistical methods.

Results In all patients in the low grade serous ovarian cancer and clear cell carcinoma groups MUC1 stained strongly positive. The frequency of MUC1 positive staining was lower in mucinous carcinoma; but it was observed that in high grade serous ovarian cancer it was higher (p<0.01). Half of the mucinous carcinoma group HER2/neu stained strongly positive. In the high grade serous ovarian cancer pathology group who were resistant to platinum therapy estrogen receptor was found to be positive in all 16 patients.

Conclusion High positive staining of MUC1 was determined in low grade serous ovarian cancer and clear cell carcinoma group patients. The higher estrogen-progesterone receptor expressions in platinum resistant patients in high grade serous ovarian cancer group, the detection of HER2/neu positivity in half of the population in the mucinous carcinoma group is an important result of this study. For targeted therapy results should be taken into account in these epithelial ovarian cancers which are difficult to manage.