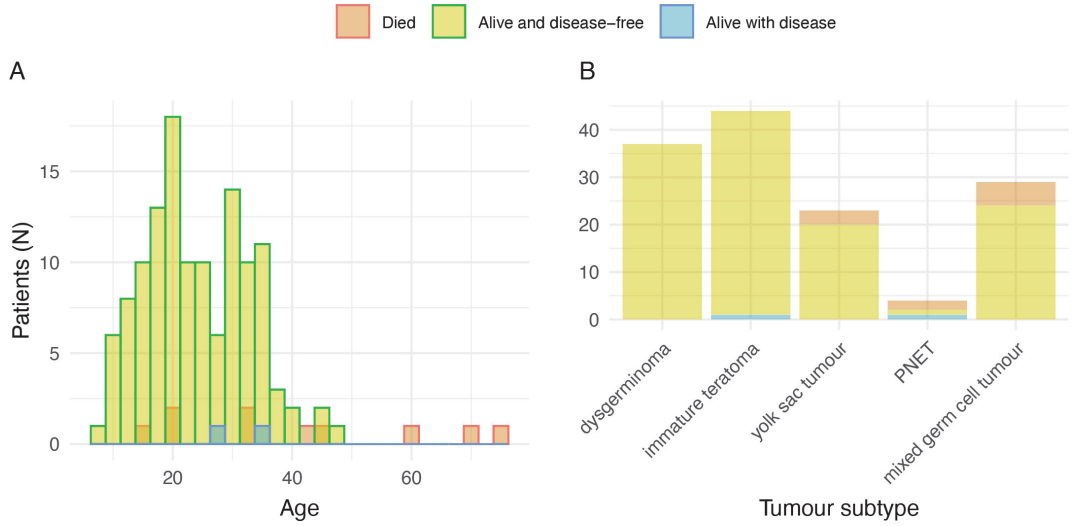

Abstract 414 Figure 1

Result(s)* One hundred and thirty-seven patients were followed-up for a median of 4.6 years with a 5 year survival of 91% (95% CI 86-97%).

Open procedures were likely to be performed for larger (p<0.001) and higher stage tumours (p<0.049), but there was no significant difference in mortality between open (80% n=109) and laparoscopic approaches (16%,n=22).

Assessing the use of surgical staging in our cohort, peritoneal or omental biopsies were infrequently taken (29%, n=40) and were largely negative, returning positive results in 0% of peritoneal and 4% of omental biopsies.

In patients with stage one immature teratoma, outcomes of unilateral cystectomy only (n=9) and unilateral salpingo-oophorectomy (n=29) were compared, with no significant difference in death, recurrence rates or residual disease prevalence between the groups.

The majority (88%, n=120) of patients had fertility-sparing surgery. This was not associated with higher rates of recurrence or death than non fertility-sparing approaches.

Conclusion* Laparoscopic surgery was safe and since routine staging biopsies did not alter outcome, we suggest that their use should be limited. Ovarian cystectomy may be acceptable for early-stage immature teratoma and warrants replication in other cohorts.

415 SINGLE-CELL MAP OF THE DYNAMIC CHANGES UNDERLYING PLATINUM-BASED CHEMOTHERAPY WITH OR WITHOUT BEVACIZUMAB IN HIGH-GRADE SEROUS TUBO-OVARIAN CARCINOMA

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Introduction/Background* The vascular endothelial growth factor (VEGF) plays an import role in emergence and spread of high-grade serous tubo-ovarian carcinoma (HGSTOC). Bevacizumab, a monoclonal antibody targeting VEGFA, has therefore been added to first-line treatment of advanced HGSTOC. We here map the dynamics of different stromal components of the tumour microenvironment under chemotherapy with or without bevacizumab.

Methodology We performed single-cell RNA-sequencing on 62,461 cells sampled from 6 HGSTOC patients before and after neo-adjuvant platin-based chemotherapy with or without bevacizumab. We identified 44 stromal cell subclusters on which we applied Mixed-effects modelling of Associations of Single Cells to identify cell populations associated with bevacizumab exposure and pathological response using the chemotherapeutic response score.

Result(s)* Our study revealed diverse stromal cell subsets associated with bevacizumab exposure. The addition of bevacizumab to frontline chemotherapy increased the odds of endothelial cell (ECs) prevalence by a 3-fold (OR 2.91, 95% CI:2.36-3.58; p<0.001) in comparison to 13-fold when treated with only chemotherapy (OR 13.42, 95%CI:11.29-15.52; p<0.001). Especially for tip cells, essential for vessel sprouting, a negative odds ratio was found for its association with bevacizumab exposure (OR 0.32, 95%CI:0.21-0.50; p<0.001) while chemotherapy only increased the odds of tip cell recruitment (OR 2.67, 95%CI:1.87-3.80; p<0.001). Tip cell receptors KDR, FLT1 and co-receptor NRP1 were significantly downregulated after bevacizumab exposure. In addition, ECs treated with bevacizumab showed lower scores for hypoxia signatures and demonstrated a significant downregulation of hypoxia-induced genes, including HIF1α. Furthermore, bevacizumab was associated with decreased number of regulatory T cells (OR 0.40, 95%CI:0.32-0.51; p<0.001). Interestingly, the addition of bevacizumab was associated with increased influx of tumour-associated macrophages (TAMs). Especially, PDGFC-expressing TAMs were strongly associated with bevacizumab exposure (OR 21.33, 95%CI:9.01-50.46; p<0.001) and poor response (OR 49.06, 95%CI:18.46-130.39 p<0.001). These cells express platelet-derived growth factor-C (PDGFC) and NRP1 providing a possible escape mechanism to activate KDR in absence of VEGFA.

Conclusion* We here provide initial evidence on the mechanisms underlying early response to bevacizumab and frontline chemotherapy in HGSTOC, including tip cell impairment,

reduced hypoxia and a decrease in regulatory T cells. However, bevacizumab exposure increased the influx of PDGFC-expressing macrophages capable to bypass VEGFA-dependent angiogenesis.

417 THE PROGNOSTIC VALUE OF THE PERITONEAL CANCER INDEX (PCI) AFTER SUGARBAKER FOR THE EFFECT OF NEOADJUVANT CHEMOTHERAPY IN ADVANCED OVARIAN CANCER

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Introduction/Background* Advanced epithelial ovarian cancer (EOC) is a severe disease with high mortality rate. Achieving complete cytoreduction (R=0; CCR) is crucial for the patient's prognosis. Extensive peritoneal carcinomatosis is often the limiting factor for achieving CCR in EOC and therefore is the deciding factor for therapy planning. The Peritoneal Cancer Index (PCI) after Sugarbaker has been an established tool to describe the extension of the disease. A patient presenting a PCI < 25 is considered to be operable[1]. We examined the predictive power of various markers (CA-125, CT-scans, PCI) for achieving complete cytoreduction after neoadjuvant chemotherapy (NACT).

Methodology The data of 23 patients treated in our hospital between 01/2015 und 12/2020 with inoperable EOC were retrospectively analyzed. Clinical and radiological data were collected and statistically analysed (univariate analysis: Chi-Square Tests, Mann-Whitney U test and multivariate analysis: Binary logistic regression, ROC-curve).

Result(s)* The reduction of the PCI itself after neoadjuvant chemotherapy showed to be a powerful predictor for complete cytoreduction (CCR), but it also showed to be significant even if the different PCI baseline values were considered. The reduction of the initial PCI score by minimum 8.5 points was a better predictor for CCR than the PCI < 25.

Neither the RECIST analysis[2] of the CT-scans nor the reduction of the tumor marker CA-125 proved to be a significant predictor.

Conclusion* Whether CCR can be achieved during debulking surgery, is best predicted by the reduction of the PCI. A combination of the three markers might be even more powerful. Larger studies are needed to confirm this.

451 PATIENT CHARACTERISTICS AND TREATMENT PATTERNS BY BRCA/ATM MUTATION STATUS IN OVARIAN CANCER PATIENTS: AN EHR ANALYSIS IN THE PRIOR-2 STUDY

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Introduction/Background* Previous studies have reported median progression-free survival (PFS) of 12-18 months in ovarian cancer (OC). Testing for BRCA1/2 or ATM gene mutations in OC can inform treatment choice. Data on the treatment experience of patients with OC by BRCA/ATM mutational status in the United States (US) is needed.

Abstract 451 Table 1 Treatments received and transition rates through lines of therapy or death

Landmark	6 Months		12 Months		24 Months	
BRCA/ATM Mutational Status	Yes	No	Yes	No	Yes	No
Number Treated	203	221	237	253	264	282
Received PARP Inhibitor (any line),%	25.6	6.3	43.5	17.4	51.5	24.5
Received Bevacizumab (any line),%	14.8	17.2	21.1	29.6	25.4	34.4
Transitions through lines of therapy,%						
receiving/completed 2L treatment or died	31.5	21.3	54.4	46.6	63.6	63.5
receiving/completed 3L treatment or died	4.9	5.0	23.2	15.0	39.8	32.6

Methodology We identified female adults, ≥18 years, with OC from Optum's de-identified electronic health record (EHR) database (1/1/2017 – 6/30/2020; N=16.6M female lives). Index date was first diagnosis of OC. Patients were observed for 12-months pre-index to capture baseline demographic, clinical and prognostic characteristics. Treatment with platinum-taxane CT, PARPi, bevacizumab and transition rates through lines of therapy or death by BRCA/ATM mutational status was examined.

Result(s)* Among 1,901 OC patients tested for BRCA/ATM gene mutation, 616 (32.4%) were positive, 682 (35.9%) were negative and 603 (31.7%) had unknown status. Mean (SD) age was 59.5 (10.9) and 62.2 (12.1) years for patients with BRCA/ATM mutation and no mutation. No meaningful differences by BRCA/ATM mutational status (yes vs no) were found in the proportion of patients with stage 3/4 cancer (52.1% vs 52.1%), visceral metastasis (35.9% vs 31.8%) or ascites (30.8% vs 30.2%), at presentation; or in 1L platinum-taxane CT initiation (55% at 6 months). PARPi use differed by BRCA/ATM status and increased over time (table 1).

Conclusion* While there are few differences in characteristics between patients by BRCA/ATM status, PARPi use was higher in patients with BRCA/ATM mutation; patients with no BRCA/ATM mutation were more often treated with bevacizumab. There is need for further research to understand the role of BRCA/ATM status on treatment choice and outcomes.

454 GENETIC PROFILE BY WHOLE EXAM SEQUENCING OF A PATIENT'S BORDERLINE TUMOR AND ITS RELAPSE: A CASE REPORT

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