with cancer outcomes including surgical resection, overall survival (OS) and progression free survival (PFS). Correlations were investigated between SCD and tumour vascularity.

Result(s)* Capillary rarefaction occurred in all patients during cytotoxic treatment (p=<0.001). This correlated with a decline in VEGF and Ang 1 (p=0.02, p=<0.001). Rarefaction was greater in the subgroup of patients who received Bevacizumab and was strongly correlated with a rise in blood pressure. Baseline SCD was strongly associated with the outcome of debulking surgery (p=0.001). Patients who had a smaller reduction in skin capillary density during treatment had a worse PFS (p=0.01). Vessel density in the tumour reduced after treatment and was more significant in patients who received Bevacizumab. There was no correlation between SCD and tumour vascularity.

Conclusion* Skin capillary rarefaction occurs during both cytotoxic and anti angiogenic treatment in women with ovarian cancer. SCD could be useful as a biomarker of response to treatment and cancer outcomes and act as a surrogate marker of angiogenesis in cancer. It is a reproducible, cheap and non-invasive investigation that is acceptable to patients and shows promise in helping to guide treatment and prognostic information in the era of personalised medicine.

221 ABSTRACT WITHDRAWN

225 AVELUMAB ALONE IN PLATINUM-RESISTANT/REFRACTORY OVARIAN CANCER: SELECTED BIOMARKER ANALYSES FROM THE JAVELIN OVARIAN 200 TRIAL

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10.1136/ijgc-2021-ESGO.360

Introduction/Background* In the randomized phase 3 JAVELIN Ovarian 200 trial (N=566), avelumab alone or combined with pegylated liposomal doxorubicin (PLD) did not significantly prolong progression-free survival (PFS; blinded independent central review) or overall survival (OS) vs PLD alone in patients with platinum-resistant/refractory ovarian cancer (PRROC). Here, we report exploratory biomarker analyses associated with outcomes in the avelumab alone arm.

Methodology Biomarkers analyzed in tumour tissue or blood were somatic and germline mutations by whole-exome sequencing and whole-transcriptomic profiling by RNAseq. Associations were assessed using the Cox proportional hazards model. For continuous biomarkers, hazard ratios (HRs) and 95% CIs were reported using a median cutoff.

Result(s)* Within the avelumab alone arm, higher expression of CD8+ T-cell signature correlated with longer PFS (HR, 0.61 [95% CI 0.43-0.87]), and higher tumour mutational burden (>0.6 mut/Mb) and presence of the high-affinity *FCGR2A* allele correlated with longer OS (HR [95% CI], 0.63 [0.42-0.96] and 0.53 [0.34-0.83], respectively), while presence of APOBEC and homologous recombination deficiency (HRD) mutational signatures were associated with shorter OS (HR [95% CI], 2.17 [1.22-3.89] and 1.68 [1.07-2.62], respectively). In patients with PFS of <6 months, a lower score for several signatures, including P53 and angiogenesis, predicted better outcomes within the avelumab alone arm (HR [95% CI], 0.37 [0.23-0.60] and 0.52 [0.33-0.82], respectively). *BRCA1/2* mutations (germline and/or somatic) were not associated with improved outcomes. Within the avelumab alone arm, higher expression of TGF-β signaling, estrogen receptor early expression signature, and epithelial-to-mesenchymal transition gene signatures correlated with shorter OS (HR [95% CI], 1.64 [1.10-2.47], 1.63 [1.09-2.45], and 1.57 [1.05-2.35], respectively). Higher expression of signatures for mesenchymal cells, cancer-associated fibroblasts, and fat cells were marginally associated with shorter OS (HR [95% CI], 1.47 [0.97-2.23], 1.45 [0.95-2.21], and 1.50 [0.99-2.27], respectively). Multivariable analyses are ongoing.

Conclusion* Although JAVELIN Ovarian 200 did not meet its primary endpoints, these analyses indicate potential subgroups of patients who could have improved outcomes with immunotherapy alone and provide insights into the biology of PRROC that may inform future trials.

229 AVELUMAB COMBINED WITH PEGYLATED LIPOSOMAL DOXORUBICIN IN PLATINUM-RESISTANT/REFRACTORY OVARIAN CANCER: BIOMARKER ANALYSES FROM JAVELIN OVARIAN 200

[1]E Pujade-Lauraine*, [2,3]J Ledermann, [4]A Oza, [2,3]R Kristeleit, [5,6]I Ray-Coquard, [7]G Richardson, [8]C Sessa, [9]K Yonemori, [10,11]S Banerjee, [12,13]A Leary, [14]X Mu, [14]Y Liu, [14]K Ching, [14]S Deng, [15]J Perkins Smith, [14]A Donahue, [16]K Fujiwara, [17,18]B Monk. *[1]ARCAGY-GINECO, Paris, France; [2]UCL Cancer Institute, London, UK; [3]UCL Hospitals, London, UK; [4]Princess Margaret Cancer Centre, Toronto, Canada; [5]Centre Léon Bérard, Service de Cancérologie Médicale, Université Claude Bernard Lyon 1, Lyon, France; [6]GINECO, Lyon, France; [7]Cabrini Hospital, Department of Medical Oncology, Bellinzona, Switzerland; [8]Oncology Institute of Southern Switzerland (IOSI), Ospedale San Giovanni, Bellinzona, Switzerland; [9]National Cancer Center Hospital, Chuo-ku, Department of Breast and Medical Oncology, Tokyo, Japan; [10]The Royal Marsden NHS Foundation Trust, London, UK; [11]The Institute of Cancer Research, London, UK; [12]Gustave Roussy Cancer Campus, Villejuif, France; [13]GINECO, Villejuif, France; [14]Pfizer, San Diego, USA; [15]Pfizer Inc, New York, USA; [16]Saitama Medical University International Medical Center, Hidaka, Saitama, Japan; [17]Arizona Oncology (US Oncology Network), Phoenix, USA; [18]University of Arizona College of Medicine, Creighton University School of Medicine, Phoenix, USA*

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Methodology Biomarkers analyzed in tumour tissue or blood were somatic and germline mutations by whole-exome sequencing and whole-transcriptomic profiling by RNAseq. Associations were assessed using the Cox proportional hazards model. For continuous biomarkers, hazard ratios (HRs) and 95% CIs were reported using a median cutoff.
Result(s)* Within the avelumab alone arm, higher expression of CD8+ T-cell signature correlated with longer PFS (HR, 0.61 [95% CI 0.43-0.87]), and higher tumour mutational burden (>0.6 mut/Mb) and presence of the high-affinity *FCGR2A* allele correlated with longer OS (HR [95% CI], 0.63 [0.42-0.96] and 0.53 [0.34-0.83], respectively), while presence of APOBEC and homologous recombination deficiency (HRD) mutational signatures were associated with shorter OS (HR [95% CI], 2.17 [1.22-3.89] and 1.68 [1.07-2.62], respectively). In patients with PFS of <6 months, a lower score for several signatures, including P53 and angiogenesis, predicted better outcomes within the avelumab alone arm (HR [95% CI], 0.37 [0.23-0.60] and 0.52 [0.33-0.82], respectively). *BRCA1/2* mutations (germline and/or somatic) were not associated with improved outcomes. Within the avelumab alone arm, higher expression of TGF-β signaling, estrogen receptor early expression signature, and epithelial-to-mesenchymal transition gene signatures correlated with shorter OS (HR [95% CI], 1.64 [1.10-2.47], 1.63 [1.09-2.45], and 1.57 [1.05-2.35], respectively). Higher expression of signatures for mesenchymal cells, cancer-associated fibroblasts, and fat cells were marginally associated with shorter OS (HR [95% CI], 1.47 [0.97-2.23], 1.45 [0.95-2.21], and 1.50 [0.99-2.27], respectively). Multivariable analyses are ongoing.
Conclusion* Although JAVELIN Ovarian 200 did not meet its primary endpoints, these analyses indicate potential subgroups of patients who could have improved outcomes with immunotherapy alone and provide insights into the biology of PRROC that may inform future trials.

235 BORDERLINE OVARIAN TUMORS (BOT): CLINICO-PATHOLOGICAL FEATURES, ONCOLOGICAL AND FERTILITY OUTCOMES

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10.1136/ijgc-2021-ESGO.362

Introduction/Background* BOT are heterogeneous subset of epithelial ovarian tumors, predominantly diagnosed at earlier stages with overall excellent prognosis. Though less but the risk of recurrence remains a matter of concern. In this study, we analyzed the clinicopathological variables, oncological and fertility outcomes of BOT.
Methodology This was a retrospective, cross-sectional study conducted at the department of Obstetrics & Gynaecology, Aga khan hospital Karachi from 2002 to 2018.
Result(s)* A total of 73 patients with BOT were included with a mean age of 43 years. Thirty five (48%) patients had fertility sparing surgery (FSS) while 38(52%) underwent debulking surgery. Pre-operative CA-125 IU level was 125 in FSS group and 67 in debulking group.

Laparotomy was the common surgical approach in both the groups with Only 5 (14%) patients in FSS group had minimal access surgery. Only 3 patients (8%) had residual disease in debulking group.

Majority of patients in both FSS and debulking groups had FIGO stage 1 disease 34 (97%) and 34(89%) respectively. The serous histological type was common in both the groups while unilateral lesion more prevalent in the FSS group (83% vs. 68%).

Recurrence was reported in 3(8.6%) patient in FSS group, while 1 (2.6%) in debulking group. The average time to recurrence was 31 months (11-51 months). Among the 4 recurrences 3 had either capsule breach or surface disease and 3 had mucinous and 1 was serous histotype. Among the recurrences 3 were in stage 1 and one in stage 3C. Cytology was positive in 4(11.4%) patients in FSS group and 8(21%) patients in debulking group but it did not have any impact on recurrence. Three patients (8.5%) conceived in FSS and had live births. Surgical approach was laparotomy in these patients and all of them had stage 1A disease.
Conclusion* BOT have an excellent prognosis. Relapses occur late in the trajectory of disease and hence regular follow-ups are important. Recurrences are independent of age and are more common in mucinous tumors with surface disease and can occur even in early stages.

236 WHAT CAN WE LEARN FROM THE 10 MM LYMPH NODE SIZE CUT-OFF ON THE CT IN ADVANCED OVARIAN CANCER AT THE TIME OF INTERVAL DEBULKING SURGERY?

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10.1136/ijgc-2021-ESGO.363

Introduction/Background* The benefit of a systematic lymphadenectomy is still debated in patients undergoing neo-adjuvant chemotherapy (NACT) followed by interval debulking surgery (IDS) in ovarian cancer (OC). The objective of this study was to evaluate the predictive value of the pre-NACT and post-NACT CT in predicting definitive histological lymph node involvement. The prognostic value of a positive node on the CT was also assessed.
Methodology A retrospective, unicentric cohort study was performed including all patients with ovarian cancer who

Abstract 236 Table 1 Diagnostic value of CT (pre- or post-NACT) in predicting histological involvement of lymph nodes in patients who underwent NACT followed by interval debulking surgery with lymphadenectomy for ovarian

	Patients with histological positive nodes	Patients with histological negative nodes	Total patients
Patients with negative nodes on pre-NACT CT	44	41	85
Patients with positive nodes on pre-NACT CT	24	9	33
Total patients	68	50	118

Sensitivity= 35.29%, IC 95%=24.08% to 47.83%
Specificity= 82.00%, IC 95%=68.56% to 91.42%
Positive Likelihood Ratio= 1.96, IC 95%=1.00 to 3.85
Negative Likelihood Ratio= 0.79, IC 95%=0.63 to 0.98
Positive Predictive Value= 73.03%, IC 95%=58.00% to 84.15%
Negative Predictive Value= 47.85%, IC 95%=42.45% to 53.31%
Accuracy= 54.91%, IC 95%=45.48% to 64.08%

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