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### BENEFIT OF BEVACIZUMAB ACCORDING TO CA125 DECLINE KINETIC IN FIRST-LINE HIGH GRADE SEROUS OVARIAN CARCINOMA (HGSOC) PATIENTS IN REAL-LIFE SETTING

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**Introduction/Background** CA125 decline, assessed by the CA-125 elimination rate constant K (KELIM) model, is associated with HGSOC intrinsic chemosensitivity. KELIM score is correlated with benefit of adding bevacizumab to chemotherapy after primary debulking surgery in the ICON7 and GOG218 trials. However, benefit of bevacizumab after interval debulking surgery according to KELIM score has not yet been explored.

**Methodology** Data from FIGO stage III/IV HGSOC patients treated with neo-adjuvant chemotherapy were extracted from the real-life French ESME OC registry (NCT03275298). KELIM scores were calculated, standardized and scored as unfavorable if  $\leq 1$  or favorable if  $>1$ .

**Results** Of the 10,263 patients in the ESME OC cohort, KELIM was assessable in 743 HGSOC patients meeting the inclusion criteria, including 124 BRCA-mutated (BRCAm), 324 BRCA-wild type (BRCAwt) and 295 non-tested. Median follow-up was 50.3 months (mo). In PFS and OS multivariate analyses, FIGO stage, BRCA mutation, KELIM score and use of bevacizumab were significant (except bevacizumab which was only associated with PFS). Amongst the BRCA tested population, three different prognostic groups according to BRCA and KELIM statuses were identified: good prognosis associating BRCAm with  $KELIM > 1$  (median PFS 28.8 mo), poor with BRCAwt and  $KELIM \leq 1$  (median PFS 12.0 mo), intermediate with either BRCAm/ $KELIM \leq 1$  (median 16.1 mo) or BRCAwt/ $KELIM > 1$  (median 18.8 mo; with no significant PFS difference between those two intermediate prognosis groups;  $p = 0.58$ ). Similar groups were identified according to OS. Bevacizumab was associated with a benefit in PFS in the overall population but the benefit in OS was only observed for patients with  $KELIM \leq 1$  (median OS 47.2 mo *versus* 33.6 without bevacizumab; HR = 0.68;  $p = 0.014$ ).

**Conclusion** KELIM and BRCA statuses are complementary prognostic tools in HGSOC patients. KELIM provides important information on the tumor intrinsic chemosensitivity beyond BRCA status that might help guide the optimal maintenance treatment including use of bevacizumab.

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### ISOLATED LYMPH NODE RECURRENCE IN EPITHELIAL OVARIAN CANCER-MANAGEMENT AND OUTCOME

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**Introduction/Background** The aim of our study was to assess the clinical outcome of isolated lymph node recurrence in patients with epithelial ovarian cancer treated by surgery and to analyse the impact of various clinico-pathological factors on prognosis.

**Methodology** We conducted a retrospective analysis of all the epithelial ovarian cancer patients who underwent surgery for isolated lymph node recurrence at our institute from 2013 to 2020. Univariate analysis of various factors influencing the Post recurrence disease free survival and Post recurrence survival was done using Kaplan-Meier for categorical variables and cox-proportional hazard progression for continuous variables.

**Results** A total of 21 patients of isolated lymph node recurrence were treated surgically during the study period. The median Disease free interval to develop lymph nodal recurrence was 13 months. All the patients achieved complete cytoreduction to no gross residual disease without any significant morbidity associated with the procedure. The median Post recurrence disease free survival after treatment of lymph node recurrence was 25 months with 3-year Post recurrence survival of 72% and 3-year Overall survival of 85%. Amongst the factors influencing Post recurrence disease free survival, young age ( $< 50$  years), para-aortic lymph node dissection at initial surgery and single site of lymph node recurrence were significantly associated with better prognosis. For the Post recurrence survival, single site of lymph node recurrence was associated with significantly better survival.

**Conclusion** Complete cytoreductive surgery is feasible for epithelial ovarian cancer patients presenting with isolated lymph node recurrence without any significant peri-operative morbidity and when combined with post-operative adjuvant chemotherapy is associated with favourable survival outcomes. Young age, para-aortic lymph node dissection during primary surgery and single site of lymph node recurrence are associated with significantly improved prognosis.

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### TRANSCRIPTOME AND GENETIC PROFILE OF EPITHELIAL OVARIAN CARCINOMA PATIENTS SENSITIVE AND RESISTANT TO PLATINUM DERIVATIVES

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**Introduction/Background** Epithelial ovarian carcinoma (EOC) is known for high mortality due to diagnosis at advanced stages and frequent therapy resistance. This study aimed to address the complex profile of gene expression, germline variants and somatic mutational spectra, signatures, and copy number variations of resistant patients compared to sensitive ones patients and evaluated associations with their clinical data and survival. **Methodology** RNA sequencing (RNASeq) in tumors, whole exome sequencing (WES) in DNA from blood and tumor tissue sample pairs of 50 patients with surgically resected EOC, and evaluation of platinum resistance status and complete follow up.

**Results** Coding transcriptome profile revealed significant associations of DUT expression with the presence of peritoneal metastases, upregulation of three genes (DDB2, HELQ, and MAD2L2), and downregulation of PRPF19 in platinum-sensitive compared to resistant patient's tumors. Results of WES analysis show that compared to sensitive patients, platinum-resistant ones have a significantly higher overall TP53 gene somatic mutational rate and a lower frequency of mutations in several genes from the Hippo pathway. We also confirmed a pivotal role of somatic mutations in homologous recombination repair (HRR) genes in the platinum sensitivity and favorable prognosis of EOC patients. Additionally, distinct mutational signatures and overall mutational load, somatic mutations in PABPC1, PABPC3, and TFAM co-segregated with the resistance status, high-grade serous carcinoma subtype, or overall survival of patients.

**Conclusion** Taken together, we assessed transcriptomic and genomic landscapes of prognostically different subgroups of EOC patients for further follow up studies focused on utilizing the observed associations in precision oncology. Supported by the Czech Health Research Council grant no. NU20-09-00174, the Ministry of Education, Youth and Sports, INTER-ACTION project no. LTAUSA19032 and Cooperatio program no. 207035, 'Maternal and Childhood Care' by 3rd Faculty Medicine, Charles University.

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#### ONCOLOGIC AND FERTILITY OUTCOMES IN ADVANCED STAGE IMMATURE TERATOMAS

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**Introduction/Background** Malignant ovarian germ cell tumors (MOGCTs) are rare tumors that account for approximately 5% of all ovarian cancers. Immature teratomas (ITs) represent about one third of all MOGCT. The ITs' peak of incidence is 15–30 years old, when the childbearing desire is frequently not completed. Even if most MOGCTs are diagnosed at an early stage, however advanced stages can be found. Our primary aim was to investigate the oncologic outcome of this population and the safety of a fertility sparing surgery (FSS). Secondarily, we have investigated fertility outcomes in patients with advanced stages ITs who underwent FSS.

**Methodology** Clinicopathological data were retrospectively collected and analyzed from a cohort of patients with advanced

stages ITs at San Gerardo Hospital (Monza, Italy) between 1980 and 2019.

**Results** Seventeen patients were included in the study (4 stage II, 12 stage III and 1 stage IV). Of them, 13 underwent FSS and 4 patients received a demolitive surgery. 13 patients received adjuvant chemotherapy (CT) after surgery, and 4 patients were followed with active surveillance. Four patients (31%) who underwent FSS experienced recurrence. All patients are still alive and without evidence of disease during the last follow up. Among nine patients who attempted to become pregnant after FSS, six got pregnant, showing a fertility rate of 67%.

**Conclusion** Despite the small number of this population, this is one of the largest case series based only on patients with advanced stage ITs. FSS appears to be a feasible treatment for advanced stage ITs. Furthermore, FSS followed by adjuvant chemotherapy allows pregnancy in young women whose maternal desire was not yet ultimate.

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#### EPIDEMIOLOGICAL STUDY ON ONCOLOGICAL OUTCOME OF PATIENTS WITH INCIDENTAL FINDINGS OF BORDERLINE OVARIAN TUMORS OR OVARIAN CANCER TREATED WITH A TWO-STEP SURGICAL PROCEDURE

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**Introduction/Background** Centralization of ovarian cancer (OVCA) treatment is known to be associated with prolonged survival. However, preoperative diagnosis might be challenging and sometimes the diagnosis is made unexpectedly after histological work-up. Aim of this study is to evaluate the oncological outcome of patients with incidental findings of OVCA or borderline ovarian tumors (BOT).

**Abstract Table 1** Baseline clinicopathological characteristics among the different study groups

	Total N= 224	Group 1 N= 150	Group 2 N= 74	P-value
Mean age at diagnosis (years ± SD)	59.0 ± 15.3	60.2 ± 14.5	56.5 ± 16.6	.088
Mean BMI (kg/m <sup>2</sup> ± SD)	25.1 ± 5.3	25.0 ± 5.3	25.3 ± 5.2	.731
Preoperative imaging with CT and/or MRI, n (%)	181 (80.8)	138 (92)	43 (58.1)	<.001
Borderline ovarian tumors, n (%)	34 (15.2)	20 (13.3)	14 (18.9)	.184
Serous histology, n (%)	151 (67.7)	99 (66.4)	52 (70.3)	.442
Advanced FIGO stage (III/IV), n (%)	123 (54.9)	91 (60.7)	32 (43.2)	.068
Adjuvant chemotherapy, n (%)	105 (46.9)	83 (55.3)	22 (29.7)	<.001
Neoadjuvant chemotherapy, n (%)	68 (30.4)	37 (24.7)	31 (41.9)	.007

**Methodology** This epidemiological study includes patients with suspicious adnexal mass undergoing surgical treatment at the Bern University Hospital, Switzerland between 2010 and 2020. Patients were allocated in two groups as follows (figure 1): group 1 consists of patients referred to our tertiary