even after multiple chemotherapy lines, platinum sensitivity is associate with a longer therapy-free interval. The aim of this study was to investigate platinum resistance in long-term OvCa survivors.

Methodology Patients diagnosed with OvCa at the Tuebingen University Women's Hospital between 2000 and 2012 were retrospectively identified and follow-up data was collected. For patients surviving at least 8 years a detailed chart review was performed. Platinum resistance was defined as disease progression during platinum-based chemotherapy or 6 months after the last platinum dose administration.

Result(s)* From a total n=745 of patients with adequate follow-up data, n=223(30%) survived at least 8 years after primary diagnosis. Median follow-up was 12.1 years and median age at diagnosis was 54.7 years. Relapse was recorded in 87/223(39%) patients, of which 28/87(32%) developed platinum resistance at some point. Platinum resistance was observed after the second line chemotherapy in most patients (median: 2, range: 1–4). 23/28 patients received further chemotherapy lines (median: 2, range: 0–8). Rechallenge with a platinum-based chemotherapy has been used in 9/28(32%) patients. Median overall survival of these 28 patients was 9.3 years (8.2–18.4, IQR3.7) and 4.1 (0.4–16.8, IQR3.8) years after platinum resistance.

Conclusion* We were able to demonstrate long-term survival after platinum resistance in a substantial number of ovarian carcinoma patients. Suggesting therefore, that other parameters influence the disease behaviour. Further research of patient characteristics, environmental and genetic features and treatment modalities will help to further understand factors contributing to long-term survival.

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PLASMAJET GIVES LESS TISSUE DAMAGE THAN ELECTROCOAGULATION DEVICE DURING CYTOREDUCTIVE SURGERY FOR ADVANCED-STAGE OVARIAN CANCER

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Introduction/Background* The aim of surgery for advanced-stage ovarian cancer is complete cytoreductive surgery, because

this is the most important independent prognostic factor for prolonged survival. Yet this can be difficult to achieve when there are micrometastases on the mesentrium or intestines. The PlasmaJet® Surgical device is an instrument to remove these micrometastases, but little is known about the depth of tissue damage compared to electrocoagulation devices.

Methodology A prospective study was performed to determine the histological depth of thermal damage in tissues in a series of 106 histological slides of 17 advanced-stage ovarian cancer patients to compare thermal damage depth after use of the PlasmaJet® Surgical device with electrocoagulation devices. Depending on which tissue types were resected during complete cytoreductive surgery, samples were collected from reproductive organs (uterus, ovaries), intestines (ileum, colon, rectum) and omentum, mesentrium and peritoneum. A systematic review of the literature on tissue damage with the PlasmaJet® Surgical device was carried out.

Result(s)* Average thermal damage depth was 0.15 mm (range 0.03-0.60 mm) after use of the PlasmaJet and 0.33 mm (range 0.08-1.80 mm) after use of electrocoagulation (P<0.001). Greater disruption of the tissue surface was often observed after electrocoagulation use. These results correspond with the available literature.

Conclusion* Based on our case series and review of literature, we conclude that PlasmaJet treatment produces significantly less thermal damage than electrocoagulation treatment. It is therefore considered a safe alternative, aiding in the achievement of complete cytoreductive surgery in patients with advanced-stage ovarian cancer without complications due to perforation of hollow organs.

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PERIOPERATIVE DYNAMIC EVALUATION OF FOLATE RECEPTOR ALPHA EXPRESSION IN OVARIAN CARCINOMA

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Introduction/Background* The human folate receptor α (FOLR1) is overexpressed in ovarian cancer and has been correlated with the transformed phenotype in ovarian cancer, platinum sensitivity, and tumor growth. The highly restricted

Abstract 188 Figure 1

distribution of FOLR1 in normal tissues may increase its diagnostic and therapeutic potential through targeted agents currently under development. We characterized the FOLR1 serum expression in benign and malignant ovarian pathology pre- and postoperatively.

Methodology Patients with suspected ovarian cancer treated at our Institution between 2018-2021 were prospectively enrolled. Pre- and/or postoperative (1-8 days after) blood samples were taken. Quantitative measurement of FOLR1 serum concentration was carried out by ELISA.

Result(s)* Median age of participating patients was 53 (range 40-78). On definitive pathology 13 (22%) patients had benign adnexal masses and 46 (78%) had serous ovarian cancer. Thirty-seven (63%) patients had FIGO stage III-IV and 15 (25%) received neoadjuvant chemotherapy (NACT). Preoperative FOLR1 was significantly higher in the malignant group versus cases with benign pathology (mean 2190 ng/mL vs 499 ng/mL, $p=0.001$). NACT patients had a significantly lower preoperative FOLR1 than chemotherapy naïve patients (mean 1001 ng/mL vs 2765 ng/mL, $p=0.012$). Additionally, the preoperative FOLR1 in chemotherapy naïve patients was significantly higher in advanced-stage disease FIGO III-IV versus early-stage disease FIGO I-II (3317 ng/mL vs 1179 ng/mL, $p=0.023$). In paired pre- and postoperative samples no significant FOLR1 difference was noted ($n=19$, $p=0.64$), however for paired samples taken up to 3 days postoperatively a significant increase was seen in the postoperative value (1547 ng/mL vs 1768 ng/mL, $p=0.047$, $n=7$). Interestingly, 1/7 (14%) cases demonstrated a decrease in postoperative FOLR1 in the first 3 days while 8/12 (66.6%) cases had a decrease in postoperative FOLR1 4-8 days after ($p=0.027$).

Conclusion* Elevated serum FOLR1 values correlated with malignancy and advanced stage while NACT significantly reduced FOLR1 values, in correlation with disease burden. We describe here a significant postoperative surge of FOLR1 that decreases >3 days after surgery that requires subsequent investigation. The full diagnostic and therapeutic potential of FOLR1 is yet to be explored and further analysis in corresponding tissue samples is ongoing.

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HOMOLOGOUS RECOMBINATION DEFICIENCY TESTING IN ADVANCED OVARIAN CANCER: DESCRIPTION OF THE ENGOT HRD EUROPEAN INITIATIVE

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Introduction/Background* Recently 3 Phase III first-line studies, PAOLA-1/ENGOT-ov25 (Ray-Coquard *et al.* NEJM 2019), PRIMA/ENGOT-ov26/GOG-3012 (Gonzales Martin *et al.* NEJM 2019) and VELIA/GOG-3005 (Coleman *et al.* NEJM 2019) have demonstrated that the addition of a PARP inhibitor (PARPi) to platinum-based therapy+/-bevacizumab improved progression-free survival (PFS) in advanced ovarian cancer (AOC) patients. The benefit was greater when the tumor was homologous recombination deficient (HRD) according to Myriad myChoice test, independently of BRCA status. The PAOLA-1 olaparib+bevacizumab maintenance regimen was approved in USA/Europe/Japan for HRD positive patients. The European initiative aims at evaluating various HRD tests on PAOLA-1 tumor samples to identify new reliable and feasible HRD tests

Methodology The HRD initiative has 2 components; one based on artificial intelligence with various partners and the other, the European HRD ENGOT initiative (EHEI), is led by academic research laboratories (RL) from ENGOT groups. The HRD test evaluation protocol for the EHEI RL includes 3 phases. The phase 1 (2019/12) brought together European RL. Because non-BRCA Homologous Recombination Repair (HRR) mutations have not been found predictive of PARPi activity in PAOLA-1 (Pujade-Lauraine *et al.*, SGO 2021)) RL tests based on these mutations were not selected for the next phases. Phase 2 evaluated the correlation between RL tests and the Myriad myChoice test on tumor samples from 85 PAOLA-1 BRCA wild type patients using the KAPPA statistics. Phase 3 is the final PFS evaluation on more than 350 additional patient samples.

Result(s)* A total of 20 RL from 21 ENGOT groups participated to the EHEI phase 1. Half of them had a test mainly based on an HRR gene panel. Three RL did not pursue for various reasons (capacity, financial or regulatory). The remaining 7 RL from 6 countries (table 1) completed the phase 2 in May 2021 and may proceed to phase 3.

Conclusion* The EHEI is a unique collaboration of European academic laboratories involved in gynecologic oncology translational research with the aim of providing a reliable biomarker (HRD) for selecting AOC patients who could benefit most from PARPi+/-bevacizumab in first-line therapy. HRD tests performance will be described after their phase 3 is completed.

Abstract 201 Table 1 The 7 research laboratories which completed the phase 2 ENGOT European HRD initiatives

ENGOT-group (country)†	Affiliation†	Technical-sum-up†
MANGO- (Italy)‡	Humanitas, Milano, Italy‡	WES: Scoring algorithm-based-on-the-presence-of-stretches-of-LOH,‡
SAKK- (Switzerland)‡	Geneva-University-Hospitals,‡	HRD-phenotype-score-based-on-whole-genome-CNVs-(ThermoFisher-Oncoscan-SNP-assay)‡
GINECO-(France) and-DGOG-(Netherlands)‡	Gustave-Roussy-and-Leiden-University-Medical-Center‡	Immunofluorescent-detection-of-RAD51-foci.‡
BGOG- (Belgium)‡	Catholic-University-Leuven-(KU-Leuven)-and-VIB-Centre-for-Cancer-Biology, Leuven‡	Capture-based-targeted-NGS-SNP-panel.‡
GINECO- (France)‡	Centre Léon Bérard, Lyon‡	HRD-Solution-developed-with-SOPHIA-GENETICS-¶ Targeted-sequencing-(28-genes)-Low-coverage-WGS-¶ Proprietary-Deep-learning-algorithm‡
AGO- (Germany) and-The-Netherlands-Cancer-Institute-(NKI)‡	University-of-Köln-(KU)-and-The-Netherlands-Cancer-Institute-(NKI)‡	BRCA1-like-copy-number-profile-based-on-low-coverage-WGS‡
NOGGO- (Germany)‡	La-Charité-(Berlin)-and-Hamburg‡	LOH, scarring‡