published a protocol for establishing EC organoids from all types and grades of EC (Berg et al, Nat Comms Med 2021). We here present data from a prospectively collected biobank of organoids including all EC molecular subclasses. Models have been extensively profiled and evaluated for drug response, supporting high heterogeneity in EC.

Methods Organoids were prospectively derived from resected EC tissue from consenting patients and cultured long-term in a chemically defined medium. Orthotopic xenograft mouse models, representing all subtypes of EC, were established by intra-uterine injection of organoids. All organoids were characterized by IHC, WES and RNA sequencing, and by single cell phenotyping. Organoids were treated with carboplatin, paclitaxel, and small molecule inhibitors against PARP, CHEK1/2, PIK3CA/mTOR, and CDK4/6.

Results The organoids reflect the main molecular EC subtypes, including POLE, MSI, copy-number low and copy-number high models. We identified matched molecular alterations in patient tissue and corresponding organoids, even after long-term culturing and expansion in vivo. Model-specific chemotherapy responses were observed and reproduced in mouse models for selected organoids. Carboplatin-resistant organoids had more alterations in platinum-related genes, including BAX, DAB2IP, ATM and CASP2. However, type of genetic alteration differed between the resistant organoids. Treatment with small-molecule inhibitors identified heterogenous drug responses.

Conclusions This state-of-the-art preclinical platform provides clinically relevant tools for use in preclinical drug trials.

21/#810 A CURRENT PERSPECTIVE ON ENDOMETRIAL CARCINOMA (EC) RISK CLASSIFICATION: RESULTS FROM AN EUROPEAN MULTICENTRE INITIATIVE

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10.1136/ijgc-2022-igcs.65

Objectives EC management has been plagued by poor interobserver reproducibility of histomorphologic features for a long time. More recently integration of TCGA-inspired molecular classification into pathology reporting and treatment guidelines was recommended. It was the aim to investigate the impact of adding molecular classification to a patient cohort diagnosed in an era before molecular classification was introduced to routine practice.

Methods Consecutive primary EC patients diagnosed in five major European gynonc centres in 2016 were identified and retrospectively submitted to molecular testing. Original risk classification ('RC16', ESMO/ESTRO/ESGO 2016) was compared to current molecular-based risk assessment ('RC20', ESGO/ESTRO/ESP 2020).

Results 226 patients were identified, complete clinical and molecular data was available from 212 cases with a median follow-up time of 52.6 months. Median age was 65.0 years (30.9–90.9), 187 cases (88,2%) were endometrioid histotype. Grading included 92(43,4%) G1, 72(34.0%) G2, and 47 (22.2%) G3 tumors. 107(50.5%) patients were diagnosed with FIGO stage IA, 55(25.9%) with IB, n=17(8.0%) with II, and 33(15.6%) with stage III/IV disease. Molecular classification yielded 46(21.7%) MMR-D, 18(9.0%) POLE, 47(22.2%) p53abn, and 100(47.2%) NSMP tumors. If RC16 was compared to RC20, an alteration of risk was observed in 20.2% with a higher risk in 16(7.5%) and lower risk in 27(12.7%) respectively.

Conclusions We were able to demonstrate significant alterations of endometrial carcinoma risk-assessment in a substantial number of patients after adding TCGA-derived molecular data to conventional risk classification. Molecular based management may help to avoid over- and undertreatment and will give rise to precision medicine strategies in endometrial carcinoma patient care.

Poster rounds with the professors: Group E5

22/#211 SURVIVAL IMPACT OF ADJUVANT RADIOTHERAPY IN UTERINE CARCINOSARCOMA – A SEER BASED STUDY

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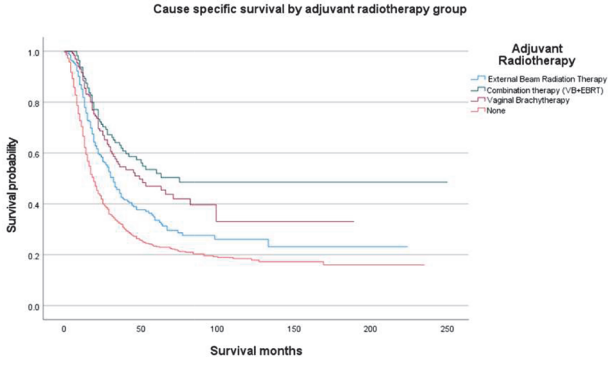
10.1136/ijgc-2022-igcs.66

Objectives While the role of adjuvant radiotherapy (aRT) has been well-established in the treatment of high-risk endometrial cancer, randomized trial data regarding aRT use in uterine carcinosarcoma (UCS), a rare subtype, is limited. Our objective is to compare the survival impact of aRT versus chemotherapy alone in the treatment of UCS using the Surveillance, Epidemiology, and End Results (SEER) database.

Methods The SEER database was queried for all patients diagnosed with stage II-IV UCS. Patients were excluded who did not undergo surgery and chemotherapy. Survival was analyzed using the Kaplan-Meier method. Multivariate Cox regression analysis was used to evaluate the survival impact of aRT while



Abstract 22/#211 Figure 1

controlling for patient age, diagnosis year, race/ethnicity, stage, grade, number of positive regional lymph nodes, and tumor size.

Results A total of 2,362 patients were identified. A significant improvement in cause specific survival (CSS) was noted in patients who underwent combination therapy (vaginal brachytherapy [VB] plus external beam radiation therapy [EBRT]) versus chemotherapy alone (hazard ratio [HR] 0.805, 95% confidence interval [CI] 0.674–0.961, p<0.05). VB and EBRT each given exclusively versus chemotherapy alone resulted in improved overall survival (OS) ([VB HR 0.852, 95% CI 0.788–0.920, p<0.001], [EBRT HR 0.758, 95% CI 0.646–0.889, p=0.001]), but not cause specific survival (CSS). No difference in survival was found in VB or EBRT alone versus combination therapy, or in EBRT versus VB.

Conclusions Combination aRT with chemotherapy shows superior CSS compared to chemotherapy alone. This SEER database study validates aRT use in this rare subset of high-risk endometrial cancer.

23/#722 PROCEDURAL INTERVENTIONS FOR OLIGOPROGRESSION DURING TREATMENT WITH IMMUNE CHECKPOINT BLOCKADE IN GYNECOLOGIC MALIGNANCIES

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10.1136/ijgc-2022-igcs.67

Objectives To evaluate feasibility and outcomes of procedural interventions for oligoprogressive disease among patients with gynecologic cancer treated with immune checkpoint blockade (ICB).

Methods Patients with gynecologic cancers treated with ICB between 1/2013–10/2021 who underwent procedural interventions including surgical resection (OR), interventional radiology ablation (IR), or radiation therapy (RT) for oligoprogressive disease were identified. Procedures performed before ICB initiation, or ≥6 months (mos) after ICB completion were excluded. Long ICB duration prior to intervention was defined as ≥6 mos. PFS and OS were calculated from procedure date until disease progression or death, respectively.

Results During the study period, 887 patients received ICB. Among patients with oligoprogressive disease, 41 underwent procedural intervention: 10 OR, 3 IR, and 28 RT. Primary tumor type included uterine (74%) and ovarian (23%). ICB regimen included PD-1/PD-L1 inhibitor (46%), PD-1/PD-L1 inhibitor + tyrosine kinase inhibitor (29%), PD-1/PD-L1 inhibitor + CTLA-4 inhibitor (12%), and PD-1/PD-L1 inhibitor + other (12%). Sites of oligoprogression included abdomen (32%), lung (17%), bone (17%), distant lymph node (17%), and vagina (10%). Subsequent treatment included continuation of same therapy (49%), other ICB (10%), or chemotherapy (29%). Short vs long ICB duration pre-procedure demonstrated median PFS of 9.2mos versus 5.6mos, and median OS of 36.1mos and 22.0mos, respectively.

Conclusions Procedural interventions for patients with oligoprogression on ICB are feasible and demonstrate favorable outcomes. Early intervention appears to associate with prolonged PFS & OS. With expanding use of ICB, it is important to investigate combined modalities to maximize therapeutic benefit for patients with gynecologic cancers.

Poster rounds with the professors: Group 07

24/#263 COST STUDY OF PLASMAJET SURGICAL DEVICE VERSUS CONVENTIONAL CYTOREDUCTIVE SURGERY IN ADVANCED-STAGE OVARIAN CANCER PATIENTS

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10.1136/ijgc-2022-igcs.68

Objectives Adjuvant use of Neutral Argon Plasma (PlasmaJet® Surgical Device) during cytoreductive surgery (CRS) for advanced-stage epithelial ovarian cancer (EOC) improves surgical outcome. The aim of this study is to examine the costs of adjuvant use of the PlasmaJet during surgery compared to conventional cytoreductive surgery in advanced-stage EOC.

Methods The patients were randomly assigned to surgery with or without the PlasmaJet. Analysis of the intra – and extramural healthcare costs were performed. Costs were divided in three categories: Costs of the diagnostic phase (T1), inpatient care up to discharge, including costs of surgery (T2), and outpatient care including chemotherapy until six weeks after the last cycle of chemotherapy (T3).

Results Overall, 327 patients underwent cytoreductive surgery (surgery with PlasmaJet: N=157; conventional surgery: N=170). The mean total health costs were significantly higher for CRS with adjuvant use of PlasmaJet compared to conventional CRS (€ 19,414 vs. € 18,165, p=0.017). Costs are divided in costs of the diagnostic phase (€ 2,034 vs. € 1,974, p=0.890), costs of inpatient care (€ 10,956 vs. € 9,556, p=0.003) and costs of outpatient care (€ 6,417 vs. € 6,628, p=0.147).

Conclusions Mean total health care costs of the use of PlasmaJet in CRS were significantly higher than for conventional CRS. This difference is fully explained by the additional surgery costs of the use of PlasmaJet. However, surgery with the use of the PlasmaJet leads to a significant higher percentage of complete CRS and a halving of stomas. A cost-effectiveness analysis will be performed once survival data are available.