surgery have suggested a survival advantage with local therapy. Radiotherapy has traditionally been used for palliation, but recent advances enable higher doses with less toxicity. Options include treating only macroscopic disease or regional RT to encompass microscopic spread. Aims: To assess feasibility of delivering radical radiotherapy for oligo-recurrent ovarian cancer and compare conventionally-fractionated VMAT with stereotactic radiotherapy.

Methods Retrospective analysis of 134 patients with recurrent ovarian cancer who underwent secondary surgical debulking identified three groups: Group_A pelvic mass <4 cm, nodal disease, ≤ 3 lesions (38 patients); Group_B tumour 4.1–8 cm, 3–5 lesions (42 patients); Group_C tumour >8 cm, >5 lesions (54 patients). CT scans from 25 patients (10 Group_A, 10 group_B, 5 group_C) were used for the dosimetric study. Four plans were produced: SBRT 30Gy/3 fractions, SBRT 30Gy/5 fractions, VMAT 60Gy/25fractions, SIB-VMAT Regional CTV 45Gy/25fractions with integrated boost 55Gy/25fractions. Plans acceptance required target volume coverage while meeting all QUANTEC and SABR-C normal tissue tolerances.

Results Thirteen (52%) patients had pelvic, 4 (16%) nodal and 8 (32%) abdominal disease. SBRT 30Gy/3 was feasible in 70% Group_A patients but only 30% Group_B, while 30Gy/5 fractions was 100% in both groups. VMAT feasibility was 90%, 100%, 80% and SIB-VMAT 80% 90%, 80% for Groups A,B,C respectively.

Conclusions Definitive radiotherapy is feasible for oligo-recurrent ovarian cancer. While stereotactic radiotherapy is effective for nodes and small volume disease, tumoricidal doses can be delivered for even bulky disease with conventionally-fractionated approaches.

EP219/#675 IN VITRO SAFETY EVALUATION OF OVARIAN TISSUE SUCCESSFULLY TRANSPLANTED IN AN OVARIECTOMIZED PATIENT WITH BILATERAL BORDERLINE OVARIAN TUMOR

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Objectives Borderline ovarian tumors (BOT) are found bilaterally in 15–40% with one-third of the patients less than 40 years of age. We report a nulliparous 36 years- old woman with suspicious tumors in right (52X30 mm) and left (83X53 mm) ovary (Ca125=79,6).

Methods She underwent bilateral salpingo-oophorectomy (frozen sections of both ovaries and abdominal wash cytology positive for serous BOT), omentectomy, sentinel lymph node dissection and appendicectomy. According to the pre-surgical consent we retrieved a piece of ovarian cortex from a macroscopically healthy portion of the left ovary. In the IVF lab they cut it in 18 microsamples 2by2mm and kept them in 4 vials following slow-freezing protocol. After eight months one vial with 9 slices was thawed rapidly, 3 were directly embedded in paraffin for immunohistochemical analysis, 3 were placed in 2D culture and 3 were placed in 3D culture conditions.

Results No malignant cell was observed and microscopically the slice concerned part of ovarian cortex with stroma including one oocyte. One year after uneventful follow-up we thawed 2 vials giving 1 of 8 slices for frozen section (negative).We took abdominal wash cytology (negative) and created a left lateral peritoneal pocket inducing a graft of Surgicel© with the ovary-slices with no sutures. Three months after we noticed the first endocrine restoration (pre-op E2<5 and then E2=54) and five months post-op her menstrual period came.

Conclusions In vitro cyto-culture is a new approach to control the ovarian tissue re-implanted in cancer survivors. Until now there are no clinicopathological findings to contraindicate stimulation and proceed to IVF.

EP220/#471 HIGH EXPRESSION OF PHOSPHODIESTERASE 1 (PDE1A) PROMOTES POOR PROGNOSIS AND ASSOCIATED WITH PLATINUM BASED CHEMOTHERAPY RESISTANCE IN EPITHELIAL OVARIAN CANCER

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Objectives Phosphodiesterase 1A (PDE1A) belongs to phosphohydrolytic enzymes resulting integration of Ca2+ and cyclic nucleotide mediate signaling in various cancers. However, its role in epithelial ovarian cancer (EOC) has not been clarified yet. Therefore, in this study we aim to evaluate the functional role and clinicopathological significance of PDE1A in EOC

Methods Expression level of PDE1A was screened by RNA sequencing of EOCs and normal ovarian epithelial tissues, GEO dataset and immunohistochemitry of EOCs. Associations of clinicopathological features and prognosis with PDE1A in EOC patients were analyzed and the its functional roles were evaluated in EOC cell lines.

Results Significantly overexpression of PDE1A was observed in EOCs compared to borderline, benign and normal nonadjacent ovarian epithelial tissues by IHC. Also, overexpression of PDE1A was significantly associated with serous, high grade, and advanced FIGO stage. Importantly, overexpression of PDE1A was associated poor overall survival and disease free survival compared with low expression of PDE1A in EOCs, and was associated with platinum based chemotherapy resistance. In vitro results demonstrated the knockdown of PDE1A was significantly associated with decreased cell invasion, migration, proliferation, and colony forming abilities supporting the oncogenic role in EOC. Also, FACS annexin V double staining assay revealed significant increased apoptosis in PDE1A knockdown EOC cell lines.

Conclusions Our study is the first work to identify an oncogenic role and association with chemotherapy resistance of PDE1A in EOC which may provide insights into the application of PDE1A as a novel predictive biomarker for prognosis and chemotherapy and a potential therapeutic target in EOC patients