analysis of variance, $p < 0.05$).

Conclusion: The spatial resolution revealed an EM gradient within Met but not Pri. This provides an unprecedented view of the EM gradient during the progression of cancer such as OCC. Our study provides the first spatially resolved in situ evidence of intermediate or hybrid EM states within the tumor samples of similar morphology.

Poster (O08)

Epithelial Ovarian Cancer including Borderline Tumor

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DKK3, down-regulated in invasive epithelial ovarian cancer was associated with chemoresistance and enhanced paclitaxel susceptibility via inhibition of β -catenin-P-glycoprotein pathway

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Objective: This study aimed to assess aberrant Dickkopf-3 (DKK3) expression in epithelial ovarian carcinoma and to determine the therapeutic role of DKK3 in ovarian cancer.

Methods: DKK3 protein expression was examined by immunohistochemistry using tissue blocks from 82 patients with invasive ovarian adenocarcinoma, and 15 normal, 19 benign, and 10 borderline tumors as controls. Survival data were estimated using Kaplan-Meier estimates, and multivariate analysis was performed using the Cox regression method. Paclitaxel-resistant cell lines were manufactured with TOV-21G and OV-90 ovarian cancer cell lines. The protein expression and cell viability were assessed by Western blotting and MTT assay, respectively.

Results: DKK3 was significantly down-regulated in invasive carcinoma compared to normal, benign, and borderline tumors. Univariate analysis showed that higher FIGO stage, DKK3 loss, suboptimal debulking operation, and chemo-resistance were significantly associated with low disease-free survival of serous carcinoma patients. DKK3 loss occurred in 56.1% invasive carcinoma cases and was significantly associated with chemo-resistance in serous adeno carcinoma ($p = 0.029$). Paclitaxel-resistant cell lines were successfully established. Western blot analysis showed that DKK3 was lost in paclitaxel-resistant

cells and as expected, β -catenin and P-glycoprotein were upregulated. Secreted DKK3 exerted an anti-proliferative effect and induced paclitaxel susceptibility in paclitaxel-resistant cells ($p < 0.01$). Secreted DKK3 was internalized into cells, reduced β -catenin activity, hence inhibited P-glycoprotein, suggesting an axis link between them.

Conclusion: DKK3 loss was frequent in invasive epithelial ovarian cancer and significantly associated with chemo-resistance. Secreted DKK3 has an anti-proliferative effect on paclitaxel-resistant cells by inhibiting β -catenin and P-glycoprotein, suggesting that DKK3 could be therapeutics targeting paclitaxel-resistant ovarian cancer.

Poster (O09)

Conservative & Fertility Preservation

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Fertility sparing surgery in malignant ovarian germ cell tumors (MOGCTs): 15 years experiences

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Objective: Our aim is to evaluate the reproductive outcome of fertility-sparing surgery and chemotherapy among young women diagnosed with malignant ovarian germ cell tumor (MOGCT) of any stage.

Methods: In current retrospective study we evaluated 79 patients with MOGCT whom visited at Imam Center, Vali-Asr Hospital, Gynecology Oncology department during 2001–2016. Reproductive outcomes (menstruation status & childbearing) followed fertility preserving surgery and adjuvant chemotherapy by filling questionnaires. Statistical analysis was done with SPSS software, χ^2 tests were done, and significance determined at $p \leq 0.05$.

Results: Among 79 young women who underwent fertility-sparing treatment, 72 patients followed up for reproductive outcome and 7 patients excluded due to death (3 cases), XY genotyping (3 cases), and bilateral ovarian involvement (1 case). The mean age at presentation was 23 years (range=19–33 years). The 5 and 10-year disease-free survival rate was 87% and 94.4%, respectively. The overall survival rate was 94.4% at 5 and 10 years. Regular menstruation recovered in 60 of 72 patients after treatment (83%). All patients without adjuvant chemotherapy experienced regular menstruation while normal menstruation retrieved in 78% in adjuvant chemotherapy group at the end of treatment. This retrieval of regular menstruation was not

depended on the age or number of chemotherapy cycles. The 19 of 26 patients who attempted for pregnancy were leading to delivery (73%). No one required infertility treatments. Mean of chemotherapy cycles and age is related to successful pregnancy. **Conclusion:** we showed patients with MOGCT could become pregnant and give birth if they desire. Advanced tumor stage was not the convincing factor for avoiding fertility preservation. Fertility sparing surgery with adjuvant chemotherapy is a safe treatment and results in high fertility rate.

Poster (O10)

Basic/Translational Science

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Identification of the therapeutic and prognostic significance of STAU2 in ovarian cancer

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Objective: Of all the gynecologic cancers, ovarian cancer (OC) accounts for the most deaths worldwide. Factors such as chemotherapy and extensive abdominal metastasis may be important reasons leading to the high mortality of OC patients. Staufen homolog 2 (STAU2) is a member of the family of double-stranded RNA-binding proteins involved in cell fate decision by regulating mRNA transport, mRNA stability, translation, and ribonucleoprotein assembly. Past research have shown that STAU2, an anti-apoptotic protein, can participate in DNA replication and/or maintain genome integrity. However, the role of STAU2 in OC remains unknown.

Methods: GEPIA2 (<http://gepia2.cancer-pku.cn/#index>) is an analysis tool containing RNA sequence expression data of 9,736 tumors and 8,587 normal samples from TCGA and the GTEx projects, using a standard processing pipeline. In this study, we used the “Single Gene Analysis” module of GEPIA2 to analyze the differential mRNA expression of tumor and normal tissues, perform pathological stage analysis, and analyze the prognosis value of claudins. The p-value cutoff was 0.05. The Human Protein Atlas (<https://www.proteinatlas.org/>) provides analysis of the secreted and membrane proteins, as well as an analysis of the expression profiles for all proteins targeted by pharmaceutical drugs and proteins implicated in cancer. In this study, we confirmed the expression of STAU2 in OC via immunohistochemistry using The Human Protein Atlas. Metascape (<https://metascape.org/gp/index.html>) includes analysis of bio-pathway enrichment, protein interaction network structure, and abundant gene annotation functions based on

more than 40 public database. In this study, we performed an enrichment analysis of STAU2 and its most related genes by the Express Analysis module. TIMER (<https://cistrome.shinyapps.io/timer/>) is a comprehensive resource for systematical analysis of immune infiltrates across diverse cancer types. In this study, “Gene” module was used to evaluate the correlation between STAU2 level and the infiltration of immune cells. And we evaluated the correlation among clinical outcome and abundance of immune infiltrates expression using “Survival” module.

Results: STAU2 expression among several cancers were analyzed, and we found the transcription level of STAU2 in OC tissues was significantly higher than normal tissues. We further confirmed that STAU2 in OC tissues overexpressed compared with normal tissues via immunohistochemistry. OC patients with higher expression of STAU2 were significantly associated with poorer overall survival ($p=0.0014$) and disease-free survival ($p=0.039$). Besides, the pathological stage of OC patients was closely related to the expression of STAU2 ($p=0.0295$), concluding that STAU2 may promote the progress of OC. GO/KEGG analysis showed the differential expression of STAU2 and its related genes were mainly associated with regulation of mRNA stability, endocytosis and ubiquitin mediated proteolysis. Then we found that CD8+ T cells expression (coefficient=0.175, $p=5.64e-3$), CD4+ T cells (coefficient=0.205, $p=1.13e-3$) and macrophages (coefficient=0.353, $p=9.66e-9$) infiltration increased, while B cells (coefficient=-0.201, $p=1.36e-3$) and dendritic cells (coefficient=-0.13, $p=3.98e-2$) infiltration decreased with high STAU2 expression. The Cox proportional hazard model showed CD4+ T cells ($p=0.001$), macrophages ($p=0.001$), neutrophils ($p=0.030$) and STAU2 expression ($p=0.038$) were significantly associated with the clinical outcome of OC patients.

Conclusion: In summary, STAU2 may play a great influence on immune cell infiltration and may represent a valuable prognostic biomarker and therapeutic target for ovarian cancer.

Poster (O11)

Gynecologic Pathology, Genetics and Epidemiology

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Molecular characterization and its correlation with tumor mutation burden in Chinese ovarian cancer patients

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Objective: The breakthrough have been brought in therapy of ovarian cancer by poly(ADP-ribose) polymerase PARP inhibitor