Abstracts

EP135/#747 A RETROSPECTIVE ANALYSIS OF CLINICAL AND PATHOLOGIC CHARACTERISTICS OF ENDOMETRIAL CANCER CASES ACCORDING TO MISMATCH REPAIR PROTEIN STATUS

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Objectives Since 2016 our institution has performed reflex immunohistochemistry assessment of mismatch repair (MMR) protein expression in all newly diagnosed endometrial cancer patients. In this study we assessed the impact of MMR status on clinical and pathologic tumor characteristics

Methods We retrospectively analyzed 248 cases according to MMR deficient (MMRd) and proficient (MMRp) status for the following clinical and pathologic characteristics: Age and stage at presentation, histology, depth of invasion, lymph-vascular space invasion (LVSI), lower uterine segment involvement (LUSI) and adjuvant therapy received. A sub-analysis of endometrioid cancer cases was also undertaken

Results 72 (29%) of tumors exhibited loss of MMR protein expression. Most women were diagnosed with stage 1 disease (69.1% of MMRd and 73.8% of MMRp cases). Average age at presentation was 66 years in both groups. No statistically significant difference was seen with respect to depth of invasion, LVSI, LUSI or adjuvant treatment. Differences in the use of radiation (P=0.15) and chemotherapy (P=0.19) between the groups did not reach statistical significance. All patients with MMRd had endometrioid histology except 1 patient with serous histology. Subgroup analysis of endometrioid cancers revealed statistically significant higher stage at diagnosis (p<0.01), more LUSI (p<0.05), and consequently increased rates of adjuvant radiation (p<0.05) for patients with MMRd

Conclusions MMRd tumors are universally of endometrioid histology. MMRd in endometrioid tumors correlated with a more aggressive subtype which presented at a higher stage requiring more aggressive adjuvant treatment

EP136/#823 ABERRANT BETA-CATENIN DISTRIBUTION AS POTENTIAL PROGNOSTIC BIOMARKER IN ENDOMETRIAL CANCER

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Objectives Based on the TCGA results for endometrial cancer, aberrant beta-catenin distribution may be a predictive biomarker for recurrence in early stage, low grade endometrioid endometrial cancer.

Methods This retrospective single institution cohort study reviewed 316 patients with endometrial cancer from 2017 to 2021. Uterine serous, carcinosarcoma, clear cell endometrial histologies were excluded. Stage, FIGO grade, beta-catenin status by immunohistochemistry (aberrant nuclear distribution vs. wild-type plasma membrane distribution), recurrence status (local vs. distant) were obtained from the medical records.

Stage was classified as early (stage IA/IB) or advanced (stage II/IIA/IIIB/IIIC/IVB). X2 test, Fisher test, and logistic regressions were performed.

Results 213 patients were included. The majority had stage IA (50.00%, n=106) or FIGO grade I disease (69.8%, n=148). Recurrences were observed in 40 patients (18.9%) vs. no recurrences in 172 patients (81.3%). Recurrences did not correlate with beta catenin distribution: 20% (n=19) of aberrant beta-catenin recurred vs. 17.9% (n=21) of wild-type beta-catenin recurred (p=0.70). Local and distant recurrences did not vary significantly by beta-catenin status (p=0.36). Most recurrences occurred in the vaginal cuff (37.50%, n=15), followed by lung (17.50%, n=7). The odds ratio (OR) for beta-catenin aberrant distribution on recurrence risk was non-significant at 1.17 (0.59, 2.32). In a sensitivity analysis of early-stage, low-grade patients (n=109), recurrence also did not vary significantly by beta-catenin distribution (p=0.64).

Conclusions Aberrant beta-catenin distribution did not significantly correlate with recurrence in early stage, low grade endometrioid uterine cancer. Further research is warranted to evaluate the effect of aberrant beta-catenin distribution on endometrial cancer prognosis.

EP137/#843 ANTI-LIPOLYSIS-STIMULATED LIPOPROTEIN RECEPTOR MONOCLONAL ANTIBODY INDUCES APOPTOSIS AND SHOWS AN ANTITUMOR ACTIVITY IN ENDOMETRIAL CANCER

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Objectives Advanced endometrial cancer (EC) has a poor prognosis. Since the efficacy of current chemotherapy is limited, new therapeutic agents are needed. We focused on lipolysis-stimulated lipoprotein receptor (LSR), a membrane protein highly expressed in EC cells, and developed a new anti-LSR monoclonal antibody (mAb). In this study, we aimed to investigate the function of LSR and the antitumor activity of anti-LSR mAb in EC.

Methods The relationship between LSR expression and clinical outcomes was investigated using immunohistochemistry in 230 clinical samples of EC. We newly developed a chimeric chicken-mouse anti-LSR mAb and investigated its antitumor activity in EC cell xenograft mouse model. To clarify the function of LSR, we conducted in vitro assays using EC cell lines (HEC1 and HEC116).

Results High-LSR expression was significantly associated with poor overall survival, deep myometrial invasion, and metastasis in EC patients (p < 0.05, respectively). LSR-knockdown suppressed the activation of the MEK/ERK signaling pathway and subsequent matrix metalloproteinases (MT1-MMP and MMP2), which downregulated cell proliferation, invasion, and migration in HEC1 and HEC116. Our anti-LSR mAb suppressed the phosphorylation of ERK1/2, increased the expression of cleaved caspase-3, and significantly inhibited the tumor growth in EC cell xenograft mouse model (tumor volume, 407.1 mm³ versus 726.3 mm³, p = 0.019). Moreover, anti-LSR mAb also suppressed the activation of the MEK/ERK signaling pathway in vitro.
Conclusions LSR is associated with tumor growth, invasion, metastasis, and poor prognosis in EC. Anti-LSR mAb is a potential therapeutic agent which induces apoptosis and shows a significant antitumor effect in EC.

**EP138/#375**  INCIDENCE AND CHARACTERISTICS OF OVARIAN CANCER FOLLOWING ENDOMETRIAL CANCER – IMPLICATIONS FOR COUNSELING IN THE ERA OF CONSERVATIVE MANAGEMENT – A SEER ANALYSIS

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Objectives Ovarian preservation in young endometrial cancer (EC) patients is controversial and requires further consideration. We aimed to assess the risk for ovarian cancer (OC) following EC in patients who underwent ovarian preservation as part of the initial EC staging and to characterize this group of patients.

Methods With permission of the Surveillance, Epidemiology and End Results (SEER) program of the United States National Cancer Institute, clinicopathological and prognosis information of women diagnosed with EC and following OC were analyzed. Patients were divided into groups: Group A – EC patients that had BSO performed; Group B – EC patients that had ovarian preservation performed. Incidence of OC and survival rates were compared.

Results 383 patients diagnosed with OC following EC were documented. Of them 260 patients had a known BSO performance status. Incidence of OC did not differ between groups (IRR 1.07, CI 0.83–1.39, p=0.59). Survival rates were significantly shorter in ovarian preservation patients compared to patients with BSO performed as part of their EC staging and treatment. However, when analyzing by age, in women diagnosed with EC up to age of 49 years old, no differences in survival rates were found comparing the two groups.

Conclusions Ovarian preservation in EC patients under the age of 49 years may be considered safe, with no impact on OC incidence or survival, benefiting a longer natural hormonal status. In EC patients who went through ovarian preservation a close follow-up for at least 7 years from the EC diagnosis is recommended.

**EP139/#416**  OUTCOMES OF SENTINEL LYMPH NODE MAPPING FOR PATIENTS WITH ENDOMETRIAL CARCINOMA AND CERVICAL OR EXTRA-UTERINE INVOLVEMENT (T2, T3A, OR T3B).

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Objectives Investigate the oncologic outcomes of patients with endometrial carcinoma and extra-uterine tumor spread who underwent sentinel lymph node biopsy (SLNBx).

Methods Patients diagnosed between 2012–2015 with endometrial carcinoma, who underwent minimally-invasive hysterectomy and had cervical (T2), serosal/adnexal (T3A), or vaginal/parametrial involvement (T3B) were identified in the National Cancer Database. Patients who underwent SLNBx (with or without LND) or systematic LND alone (defined as at least 20 LNs removed) were identified. Overall survival (OS) was compared with the log-rank test. A Cox model was constructed to control for confounders.

Results A total of 2108 patients were identified; 1090 (51.7%) with cervical, 745 (35.3%) with serosal/adnexal, 246 (11.7%) with parametral/vaginal involvement and 27 (1.3%) with T3 not specified. A total of 1786 (84.7%) patients had SLND (78.1% with para-aortic LND), while 322 (15.3%) underwent SLNBx. Rate of LN metastases was 35.8% in the SLND and 32.6% in the SLNBx group, p=0.27. Rates of chemotherapy (p=0.36) and radiotherapy (p=0.34) were comparable. There was no OS difference between patients who had SLNBx or SLND (p=0.60; 4-yr OS rates 71.5% and 73.9%) even after controlling for confounders (HR 1.10, 95% CI: 0.84, 1.45). OS was comparable for patients with T2 (p=0.60), T3A (p=0.34), T3B (p=0.38). Patients who had SLNBx alone (n=103), had lower incidence of LN metastases (22.3%, p=0.005), but did not have worse OS compared to those who had sLND (p=0.87; 4-yr OS rate 72.2% and 73.9%).

Conclusions Patients with extra-uterine involvement have a high incidence of LN metastases. SLNBx is associated with similar OS compared to LND.

**EP140/#780**  VAGINAL Hysterectomy FOR THE TREATMENT OF LOW-RISK ENDOMETRIAL CANCER: INTERIM SURGICAL AND ONCOLOGICAL ANALYSIS

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Objectives The purpose of this study was to evaluate the role of vaginal hysterectomy for the treatment of patients with low-risk endometrial cancer.

Methods We retrospectively reviewed the medical records of patients who underwent vaginal hysterectomy for treatment of endometrial cancer or its precursor lesions at a single center in São Paulo, Brazil. Medical data obtained included comorbidities, pre and postoperative histological diagnosis, perioperative outcomes, adjuvant treatments and oncological and surgical follow-up.

Results Medical records from 34 consecutive patients who underwent vaginal hysterectomy for endometrial cancer or its precursor lesions between April 2019 and November 2021 were analyzed. Mean age was 61.9 years and body mass index (BMI) was 34; 76.5% of patients were obese (BMI ≥ 30). Medical comorbidities including hypertension (67.7%) and diabetes (35.3%) were commonly noted. Sixty-one percent of patients had two or more comorbidities. Mean operative time and hospital stay were 109 minutes and 1.2 days, respectively. Four (11.8%) patients had conversion of surgical route to laparotomy due to vascular trauma (2 cases) or anatomical difficulties (2 cases). No other major complications were found. Patients undergoing surgical conversion had greater uterine volume (226.8 vs 110.4 ml, p=0.036), longer operative time (116 vs 98 min, p<0.0075) and hospital stay (56.8 vs 23.2 hours, p<0.0001). Twenty-eight patients had low-grade endometrioid carcinoma; three (10.7%) of them received adjuvant