

#925

VALIDATION OF SINGLE-CELL PROFILING DATA FROM RECURRENT LOW STAGE ENDOMETRIAL CANCER; LOW VIMENTIN IS A ROBUST MARKER FOR POOR PROGNOSIS IN ENDOMETRIAL CANCER, INCLUDING IN LOW-STAGE TUMORS

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Introduction/Background We recently identified low vimentin as a marker of recurrence in low-stage endometrial cancers (Lien et al. eBioMedicine, Volume 92, 2023). Such markers are currently lacking in clinical use and could improve treatment for patients with undetected high-risk of recurrence. We aimed to validate the robustness of vimentin as a marker for poor prognosis in endometrial cancer.

Methodology Imaging mass cytometry was used to examine single-cell expression of 23 proteins in 36 primary FIGO IB endometrial cancers, of which 17 recurred. Single-cell information was extracted for each tumor and unsupervised clustering was used to identify cellular phenotypes. Vimentin protein expression was evaluated by immunohistochemistry (IHC) in preoperative samples. Results were validated in preoperative and operative samples. Protein expression in paired primary and metastases was investigated.

Results The abundance of epithelial, immune or stromal cell types did not associate with recurrence, however a distinct epithelial phenotype characterized by low vimentin was more prevalent in recurrent tumors. Loss and low expression of vimentin was validated by IHC as a robust marker for recurrence in FIGO I stage disease and predicted poor prognosis in endometrioid patients only and in the full cohort.

Conclusion This study reveals distinct characteristics in low-stage tumors and identifies and validates vimentin as a clinically robust marker for poor prognosis in endometrial cancer.

Disclosures The authors declare no competing interests.

#934

TREATMENT IN RECURRENT UTERINE SARCOMAS

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Introduction/Background Uterine sarcomas (US) are aggressive tumors with a 45–73% recurrence rate. Cytoreductive surgery is the mainstay treatment in uterine sarcoma management. Systemic chemotherapy is also an option for patients with recurrent, metastatic, irresectable leiomyosarcoma. This study aims to compare the efficacy of secondary cytoreductive surgery and chemotherapy in patients with recurrent uterine sarcoma

Methodology Recorded data from 45 patients with recurrent uterine sarcoma were analyzed retrospectively. Twenty-three recurrent US cases treated with secondary cytoreductive surgery and 22 with chemotherapy were included in the study.

Results Median follow-up of the patients was 57 months. Complete secondary CRS was accomplished in 18 of 23 (78,2%) recurrent patients. Median survival after recurrence was 19 months for surgery group and 9,5 months for chemotherapy group ($p = 0.288$). Median overall survival was 36 months in the surgery and 30.5 months in the chemotherapy group and did not show a significant difference ($p = 0.236$). The 5-year overall survival was 30% for CRS and 20% for chemotherapy groups. Median OS was 13 months in patients with DFS less than 12 months and 46.5 months in patients with DFS more than 12 months. Patients with DFS longer than 12 months had better OS ($P = 0.019$).

Conclusion Patients who relapse within the first year have worse survival. Although CRS after recurrence provides a partial survival advantage, this does not show any statistical significance. Patient selection for CRS should be patient-tailored.

Disclosures none

#942

ENDOMETRIOID TYPE ENDOMETRIAL CARCINOMAS WITH DEFICIENT MISMATCH REPAIR SYSTEM HAVE DISTINCT HISTOPATHOLOGICAL AND IMMUNE FEATURES

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Introduction/Background Mismatch repair system(MMR) deficiency is more common in endometrioid-type endometrial carcinomas(E-EC) than other endometrial tumors. It's prognostic significance vary among different studies. Additional criteria are needed to predict outcome in MMR-deficient(MMRd) E-ECs.

Methodology 108 patients diagnosed with E-EC between 2020–2022 at our institution were included in the study. Of these, 51 were MMR-deficient immunohistochemically and remaining 57 were MMR-proficient(MMRp). Histopathological features like tumor size, FIGO grade&stage, lymphovascular invasion(LVI), MELF(microcystic,elongated&fragmented)-type invasion, necrosis/comedonecrosis, psammoma bodies, depth-of-invasion, squamous/mucinous differentiation were noted for all cases. Previously performed immunohistochemical stains (MSH2,MSH6,PMS2,MLH1,ER,PR,p53) were reevaluated. Six tissue-microarray blocks were manually constructed with representative 2cores of 1mm² for each case and immunohistochemistry was performed by using PD-L1,CD3,CD4,CD8,CD45,BRAF-VE1,CERB-B2 antibodies. Densities of CD3,CD4,CD8,CD45 positive immune-cells(IC) were calculated (positive-cells/mm²) both in the stromal&intratumoral compartments. PD-L1 scores were grouped as: negative,≤1%,2–20%,>20% of the tumor cells(TC) &ICs. CERB-B2 expression was evaluated as applied in breast cancer. BRAF-VE1 staining was evaluated

in the tumor cells and grouped as negative/weak/moderate/strong.

Results Median follow-up time was 11 months(range:1–160). Mean tumor size was 37.22mm(range:7–160). Comparison of MMRd and MMRp group revealed that, MMRd-cases had the propensity for higher tumor size, FIGO grade&stage. Presence of comedonecrosis, psammoma bodies, diffuse LVI were more frequent, CD3&CD8 densities were higher in the MMRd-group. PD-L1 expression was higher in TC&ICs of MMRd-tumors. A statistically significant correlation between the presence of extensive necrosis and tumor recurrence/metastasis was detected within the MMRd-group($p=0.004$), despite of no such relation within the MMRp-group. Recurrence/metastasis rates were significantly higher in BRAF positive cases among all E-ECs($p=0.021$).

Abstract #942 Table 1 Comparisons of clinical, histopathological and immunohistochemical features between mismatch repair deficient and mismatch repair proficient endometrioid type endometrial carcinoma cases. (*): Two cases in MMRp group had only curettage materials and in these cases lymphovascular invasion, depth of invasion MELF invasion and FIGO staging could not be evaluated.

Clinical Features	IHC - MMR-deficient (n=51)	IHC - MMR-proficient (n=57)	P value
Age (year)	Mean: 63.35 (range: 38 – 94)	Mean: 59.33 (range: 39 – 80)	0.054
Follow-up time (month)	Mean: 13.26 (range: 1 – 54)	Mean: 14.59 (range: 1 – 169)	0.566
Tumor size (mm)	Mean: 41.84 (range: 17 – 160)	Mean: 32.78 (range: 7 – 65)	0.044
FIGO grade (n, %)	Grade I: 9 (17.6%) Grade II: 34 (66.7%) Grade III: 8 (15.7%)	Grade I: 30 (52.6%) Grade II: 25 (43.9%) Grade III: 2 (3.5%)	0.000
FIGO stage (n, %)*	Ia/b: 32 (62.8%) II: 7 (13.7%) IIIa/b/c1/c2: 12 (23.5%) IVa/b: 0	Ia/b: 46 (83.7%) II: 2 (3.6%) IIIa/b/c1/c2: 7 (12.7%) IVa/b: 0	0.006
LVI (n, %)*	Absent/Focal: 31 (60.8%) Diffuse: 20 (39.2%)	Absent/Focal: 45 (81.8%) Diffuse: 10 (18.2%)	0.016
MELF invasion (n, %)*	Absent: 20 (39.2%) Present: 31 (60.8%)	Absent: 31 (56.4%) Present: 24 (43.6%)	0.077
Comedonecrosis (n, %)	Absent: 18 (35.3%) Present: 33 (64.7%)	Absent: 36 (63.2%) Present: 21 (36.8%)	0.004
Necrosis (n, %)	Absent: 18 (35.3%) ≤30%: 19 (37.3%) 31–60%: 10 (19.6%) >60%: 4 (7.8%)	Absent: 31 (54.4%) ≤30%: 20 (35.1%) 31–60%: 6 (10.5%) >60%: 0	0.028
Psammoma bodies (n, %)	Absent: 42 (82.4%) Present: 9 (17.6%)	Absent: 54 (94.7%) Present: 3 (5.3%)	0.041
Depth of invasion (n, %)*	Mean: 40.55% Range: 0% – 100% <50%: 32 (62.7%) 50–99%: 16 (31.4%) 100% (serosa): 3 (5.9%)	Mean: 33.38% Range: 0 – 93 <50%: 34 (61.8%) 50–99%: 21 (38.2%) 100% (serosa): 0	0.182 0.890
Squamous differentiation (n, %)	Absent: 14 (27.5%) Present: 37 (72.5%) ≤30%: 32 (86.5%) 31–60%: 4 (10.8%) >60%: 1 (3.7%)	Absent: 22 (38.6%) Present: 35 (61.4%) ≤30%: 21 (60%) 31–60%: 11 (31.4%) >60%: 3 (8.6%)	0.220 0.012
Mucinous differentiation (n, %)	≤30%: 15 (55.6%) 31–60%: 11 (40.7%) >60%: 1 (3.7%)	≤30%: 18 (64.3%) 31–60%: 7 (25%) >60%: 3 (10.7%)	0.697
Intratumoral CD3	Mean: 153.89 (3.74–547.27)	Mean: 106.74 (8.38–669.50)	0.002
Stromal CD3 density	Mean: 376.16 (23.17–1806.13)	Mean: 302.21 (14.63–1290.28)	0.348
Total CD3 density	Mean: 530.06 (33.01–2031.48)	Mean: 409.01 (28.13–1424.03)	0.048
Intratumoral CD8	Mean: 85.19 (70.01–359.24)	Mean: 47.73 (0.431.84)	0.000
Stromal CD8 density	Mean: 123.45 (8.05–616.51)	Mean: 83.57 (3.76–536.21)	0.090
Total CD8 density	Mean: 208.75 (10.51–771.64)	Mean: 131.51 (3.76–673.14)	0.002
PD-L1 in tumor	Negative: 9 (17.6%) ≤1%: 34 (66.7%) 2–20%: 8 (15.7%) >20%: 0	Negative: 25 (43.9%) ≤1%: 27 (47.4%) 2–20%: 5 (8.7%) >20%: 0	0.005
PD-L1 in stroma	Negative: 1 (1.9%) ≤1%: 20 (39.2%) 2–20%: 18 (35.3%) >20%: 12 (23.6%)	Negative: 9 (15.8%) ≤1%: 30 (52.6%) 2–20%: 16 (28.1%) >20%: 2 (3.5%)	0.000
CERB-B2	0/1 (negative): 42 (82.4%) 2 (equivocal): 9 (17.6%) 3 (positive): 0	0/1 (negative): 49 (85.9%) 2 (equivocal): 7 (12.3%) 3 (positive): 1 (1.8%)	0.838
BRAF-VE1	Negative: 2 (3.9%) Positive: 49 (96.1%)	Negative: 6 (10.5%) Positive: 51 (89.5%)	0.277

Conclusion CD3,CD8 positive lymphocytes constituted the majority of ICs in MMRd-cases and PD-L1 expression was also higher in MMRd-group. Extent of necrosis may be important criteria for predicting outcome in MMRd E-ECs. BRAF expression significantly correlated with recurrence/metastasis in all E-ECs, independently of MMR status, and maybe promising as a prognostic parameter for E-ECs.

Disclosures The authors have no conflict of interest to declare.

#944

THE DA VINCI ROBOTIC SURGERY SYSTEM FOR THE MANAGEMENT OF ENDOMETRIAL CANCER: A SINGLE CENTER EXPERIENCE FROM KING FAISAL SPECIALIST HOSPITAL AND RESEARCH CENTER, JEDDAH, SAUDI ARABIA

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Introduction/Background To report our single-center experience of the Da Vinci robotic surgery system in the management of endometrial cancer (EC) patients at the Department of Obstetrics and Gynecology, King Faisal Specialist Hospital and Research Center, Jeddah, Saudi Arabia, during 2019–2022.

Methodology We descriptively summarized the preoperative, intraoperative, and postoperative outcomes. Moreover, we conducted subgroup analyses based on obesity (BMI ≥ 30 kg/m²) and the intraoperative use of indocyanine green dye (ICG).

Results Overall, 81 patients were analyzed. Sixty-seven patients (82.7%) were obese. The mean operative time and estimated blood loss (EBL) were 247.22 ± 74.42 min and 100.86 ± 71.82 ml, respectively. The mean number of retrieved pelvic LNs was 3 ± 3.17 (range: 0–15). The use of IGD was employed in 40 patients (49.4%). Only single patient (1.2%) underwent conversion to laparotomy. Besides, only three patients (3.7%) experienced vaginal laceration intraoperatively. The mean hospital stay was 1.37 ± 0.73 days. No patient experienced postoperative complications. Most tumors had endometrioid histology (81.5%), grade-1 tumor (49.4%), and stage-1A disease (67.9%). At 3-year follow-up, only two patients (2.5%) developed recurrence. Patients who received the IGD had significantly lower operative time, lower EBL, and lower hospital stay compared with patients who did not receive it. However, there was no significant difference between both groups regarding the number of retrieved pelvic LNs.

Conclusion Robotic surgery was technically feasible and safe. The use of ICG was linked to favorable outcomes, in terms of decreased operative time, EBL, and hospital stay. Obesity did not impact the perioperative surgical outcomes.

Disclosures None

#947

IMMUNOHISTOCHEMICAL MARKERS OF ENDOMETRIAL CANCER OF DIFFERENT MORFOLOGICAL FORMS

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Introduction/Background Introduction. Endometrial cancer is one of the most common forms of oncopathology in developed countries. A search is underway for molecular biological markers that will allow us to identify new approaches to the treatment of pathology with better results.