EP139/#824 WOULD PREOPERATIVE MOLECULAR PROFILING OF P53 MUTATION AND MISMATCH REPAIR DEFICIENCY BE USEFUL AS MARKERS TO PREDICT THE EXTENT OF SURGERY IN EARLY-STAGE ENDOMETRIAL CANCER?

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Introduction Staging operations for early stage endometrial cancer are performed uniformly, despite the fact that pathologic information can be obtained prior to surgery. According to molecular categories identified in the Cancer Genome Atlas, p53 mutation and MMRd are associated with poor prognosis. If there is a correlation between the molecular profile obtained from endometrial biopsy tissue and the extent of disease after surgery, it may be possible to personalize surgical planning.

Methods This study compared the P53 and MMR status of 173 patients with newly diagnosed and clinically staged I-II endometrial cancer who underwent surgical staging, with their final pathological results. All were classified into three groups based on their molecular profiles: abnormal p53, MMRd, and NSMP (no specific molecular profile). The presence of involvement in the cervix, adnexa, and lymph nodes was analyzed using the Kruskal-Wallis test.

Results Out of 173 patients, 17(9.8%) were assigned to p53 abnormal group, 33(19.1%) to MMRd group, and 123 (71.1%) to NSMP group. Among them, 18(10.4%) had cervical involvement, 8(4.6%) had adnexal involvement, and 8 (4.6%) had lymph node involvement. The p-values for the involvement of each group were 0.115 for cervix, 0.328 for adnexa, and 0.860 for lymph nodes, indicating no statistically significant relationship between molecular profile and disease extent.

Conclusion/Implications Molecular profiles do not seem to determine the prognosis based on the difference in stage at first onset in early stage endometrial cancer. Staging operations should follow current guidelines, but It is necessary to make efforts to individualize treatment plans based on information obtained through preoperative histology.

EP140/#1543 RESEARCH ON HOMOGENIZATION OF AI-ASSISTED MEDICAL IMAGING ANALYSIS SYSTEM FOR ENDOMETRIAL CELLS

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Introduction With the endometrial cell test is widely used in the primary screening of high-risk population of endometrial cancer. It revealed the shortage of cytopathology experts and the imbalance of resources distribution.We introduced convolutional neural network into the screening and diagnosis of endometrial cancer and established a set of AI-assisted medical imaging analysis system that can automatically identify and differentiate benign and malignant endometrial cell mass. But the homogeneity in different hospitals has not been defined for clinical application.

Methods A retrospective study was conducted to select endometrial fluid-based cytological pathological sections from the First Affiliated Hospital of Xi 'an Jiaotong University (Jiaotong University Group) and Xi 'an Daxing Hospital (Daxing Group) from September 2021 to May 2023 due to abnormal vaginal bleeding or uterine abnormalities indicated by ultrasound, with 100 cases each. The results were reported by the AI-assisted medical imaging analysis system of the same model in the two hospitals.The accuracy, sensitivity and specificity were analyzed based on the pathological results of the patient's endometrial tissue as the gold standard.

Results The diagnostic accuracy of the AI-assisted endometrial cell medical imaging analysis system in the Jiaotong group and the Daxing group was 93.0% and 89.0%, respectively. The sensitivity was 87.8% and 82.1%, respectively, and the specificity was 96.6% and 91.7%, respectively. There was no significant difference in diagnostic accuracy, sensitivity, and specificity between the two systems ($P>0.05$).

Conclusion/Implications The AI-assisted endometrial cell medical imaging analysis system shows homogenization in the diagnostic accuracy, sensitivity, and specificity when used in different medical institutions.

EP142/#1526 STUDY ON THE EFFECTIVENESS OF USING ARTIFICIAL INTELLIGENCE IMAGE RECOGNITION SYSTEM TO DIAGNOSE ENDOMETRIAL CYTOPATHOLOGY

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Introduction To explore the effectiveness of an image recognition system based on artificial intelligence (AI) in diagnosing benign and malignant endometrial cell clumps.

Methods Endometrial cytological specimens from the First Affiliated Hospital of Xi'an Jiaotong University and Xi'an Daxing Hospital from August 2021 to February 2023 were selected, and histopathology was used as the gold standard. The sensitivity, specificity, positive predictive value, negative predictive value and accuracy of AI image recognition system (AI diagnosis) and professional pathologists' manual diagnosis (manual diagnosis) of benign and malignant endometrial cell clumps were compared and analyzed.

Results Among the 126 patients included in the analysis, the overall coincidence rate of AI diagnosis and histological diagnosis was 92.1% (116/126), which was highly consistent with histopathological results (Kappa=0.841); the overall coincidence rate of manual diagnosis and histological diagnosis was 94.4% (119/126), which was highly consistent with histopathological results (Kappa=0.889).There was no statistically significant difference between AI diagnosis and manual diagnosis methods ($\chi^2= 0.568$, $P=0.451$). The sensitivity, specificity, positive predictive value, and negative predictive value of AI diagnosis were 91.8%, 92.3%, 91.8%, and 92.3%,

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