Conclusion MLH1 promoter methylation analysis would play a valuable role as a clinical biomarker.

**2022-RA-818-ESGO** BIUXX
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**Abstracts**

**Introduction/Background** We found cyclin B1 immunohistochemistry (IHC) expression is different between polymerase epsilon exonuclease (POLE) and copy number low (CN-low) subtype in endometrial cancer. The objective is to examine whether POLE can be distinguished from CN-low subtype using clinicopathologic factors and cyclin B1 IHC.

**Methodology** For 240 patients with endometrial cancer who underwent hysterectomy at Seoul National University Bundang Hospital from 2006 to 2013, POLE gene sequencing and IHC for hMLH1, hMSH2, hMSH6, PMS2 and p53 were performed. For 155 patients with POLE or CN-low subtype, clinicopathologic factors were abstracted from medical record, and cyclin B1 IHC was performed using primary monoclonal antibody (RBT-B1, 1:50; LSBio, Seattle, WA, USA). Cyclin B1 expression level (cyclin B1 score) was determined by intensity of staining. Decision tree classifiers encompassing clinicopathologic factors and cyclin B1 IHC were constructed using accuracy from 5-fold cross-validation. Hyperparameters (max_depth, min_samples_leaf) were tuned using GridSearch.

**Results** 24 with POLE and 131 with CN-low were included. Median age was 56 and median weight was 61.6kg. Number of patients with stage 3, 4 were 14 and those with LVSI were 41. In the final model, weight (cutoff 54.3kg) and cyclin B1 IHC (cutoff score 1.5) were selected. With the POLE subtype, the mean validation accuracy were 84%. The model divided the whole cohort into 3 groups. Of 25 patients with weight ≤ 54.3 kg (group 1), 10 patients with POLE subtype were included (40%); Of 51 patients with weight > 54.3 kg and cyclin B1 score > 1.5 (group 2), 8 patients with POLE subtype were included (16%); Of 48 patients with weight > 54.3 kg and cyclin B1 score ≤ 1.5 (group 3), 1 patients with POLE subtype were included (2%).

**Conclusion** POLE vs. CN-low cannot be distinguished but can be enriched using clinicopathologic factors and cyclin B1 IHC.

**2022-RA-902-ESGO** NOVEL METHYLATED GENES AS A SECOND TRIAGE STEP AFTER HRHPV TESTING TO IMPROVE COLPOSCOPY REFERRAL IN HPV INFECTED WOMEN WITH CERVICAL LESIONS (CANCER)

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**Methodology** High-risk human papillomavirus (hrHPV) testing to triage women with abnormal cervical lesions (cancer) generates many referrals. hrHPV infection and excessive colposcopy referrals may lead to panic in patient and bring waste of medical resources.

**Introduction/Background** From 2019 to 2022, a prospective study of outpatient opportunistic cervical cancer screening was conducted with multiple centers. More than 20,000 subjects were collected and be follow-up for one year. The research team of Peking Union Medical College Hospital is responsible for preliminary experiment, clinical study planning, and process quality control. The analysis of methylation level was determined by using the CisCer methylation real-time system (CISPOLY Co., China). Positive rate, sensitivity, specificity, accuracy for cytology, hrHPV, and the methylation level of PAX1 and JAM3 genes were analyzed.

**Results** A system set-up study in 2210 hrHPV infection subjects including normal uterine cervix (n=1230), CIN1(n=514), CIN2(n=69), CIN3/CIS(n=194), SCC (n=50), and adenocarcinoma (n=6) of the uterine cervix diagnosed according to histological results. The CIN1, CIN2, and Cancer immediate risk with HPV 16/18 (n=810) and non-16/18 hrHPV (n=1400) were 33.83%, 20.99%, 6.17% and 13.71%, 5.71%, 0.43% respectively. The sensitivity and specificity of CisCer
methylations were 67.2% and 89.6% in all CIN3+ subjects compared with HPV16/18 (68% and 66.4%) and LBC (≥ASCUS; 93.6% and 23.6%). The specificity of HPV 16/18 and CisCer methylations combined screening method were 96.1% in CIN3+. The CIN2, CIN3, and cancer immediate risk with combined screening method were 79.2%, 61.46%, and 26.04%, respectively.

Conclusion The preliminary results indicated that the CisCer testing is promised for cervical cancer detection with high sensitivity and specificity for hrHPV. It can be used as a new non-invasive diagnosis method and its utility as a second triage step after hrHPV testing in women with cervical lesions to improve the accuracy of referral colposcopy.

Conclusion 18F-FDG PET/CT in EC mouse models is feasible and multiple metabolic tumour features can be extracted. Using a clinically relevant imaging modality strengthens the potential for preclinical to clinical translation and reproducibility. Our work provides a basis for future studies on orthotopic mouse models of EC.

**STK11 ADNEXAL TUMORS: CHALLENGE OF A NEW TUMOR ENTITY**

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**Abstract 2022-RA-915-ESGO Figure 1**

**18F-FDG-PET/CT IN ORTHOTOPIC MOUSE MODELS OF ENDOMETRIAL CANCER: MULTIPARAMETRIC CHARACTERIZATION AND EVALUATION OF TREATMENT RESPONSE**

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Introduction/Background Using clinically relevant imaging modalities in relevant animal models is crucial for strengthening the translational value of preclinical discoveries in endometrial cancer (EC). Imaging by 18F-fluorodeoxyglucose positron emission tomography/computed tomography (18F-FDG-PET/CT) is commonly used in diagnostic workup in EC. 18F-FDG PET/CT in orthotopic mouse models of EC have been shown to be feasible, but standardized guidelines for image acquisition and interpretation is missing. Utilizing a large imaging database of orthotopic EC models, we aimed to characterize primary tumour 18F-FDG PET parameters and assess treatment response in a subset of mice.

Methodology The database consists of 91 18F-FDG-PET-CT scans in 66 mice orthotopically implanted with patient-derived xenografts (n=30) or organoid-based patient-derived xenografts (n=6). A subset of mice was used for evaluation of treatment response (n=25). The mice were fasted for 12–16 hours prior to imaging, intravenously injected with 18F-FDG and scanned for one hour. The following tumour parameters were extracted; mean, mean and peak standardized uptake value (SUV$_{\text{max}}$/SUV$_{\text{mean}}$/SUV$_{\text{peak}}$), metabolic tumour volume, total lesion glycolysis, the 10 hottest voxels and metabolic rate of FDG. Interreader reliability between two readers were evaluated using intraclass correlation coefficient (ICC) test (n=25).

Results We utilized a 50% of SUV$_{\text{max}}$ segmentation threshold for tumour delineation, which correlated well with anatomical tumour volume extracted from MRI for a subset of mice ($r^2=0.74$, n=25). There was a significant difference between treatment and control groups for the parameters SUV$_{\text{max}}$(p=0.020), SUV$_{\text{peak}}$ (p=0.038) and the 10 hottest voxels (p=0.034) and the agreement between the readers were good (ICC; 0.89–0.97).

Abstract 2022-RA-915-ESGO Figure 1