

investigated. Univariate and multivariable analysis (MVA) was performed.

Results Two hundred sixty-four patients were included. The median D90 was 89 (86–95) Gy. P16, PD-L1>1% and L1CAM>10% expression was noted in 81.4%, 17% and 17.4% respectively. P16 -ve status (OR 2.4 (1–5.7), $p=0.04$), necrosis on MRI (OR=2.1(1.1–4.3), $p<0.02$) independently predicted for HRCTV-BT >40cc in addition to FIGO stage and tumor width. PD-L1>1% was associated with reduced local (82% vs. 94%, $p=0.02$) and pelvic control (79% vs 89%, $p=0.02$). HRCTV D90 <85Gy was associated with inferior 5-year local control in p16+ patients especially if PDL-1 was co-expressed (figure 1). On MVA, PD-L1>1% was the only independent predictive factor for 5-year local event (HR 3.3, $p=0.04$) and L1CAM for pelvic event (HR 5.5 (1.3–23.3), $p=0.02$) (table 1).

Conclusion/Implications P16 -ve status and necrosis on MRI independently predict for poor response to EBRT (HRCTV-BT >40cc) and PD-L1 and L1CAM independently predict local and pelvic control suggesting impact of molecular features on radiotherapy response. Further validation is planned in EMBRACE-II.

AS16. Screening/Early detection

SO020/#114

PIVOTAL CLINICAL STUDY TO EVALUATE THE EFFICACY AND SAFETY OF AS-SISTIVE ARTIFICIAL INTELLIGENCE-BASED SOFTWARE FOR CERVICAL CANCER DIAGNOSIS

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Introduction The accuracy of colposcopy depends on the skill and proficiency of the colposcopist. This study evaluated the feasibility of an artificial intelligence (AI) system as an assistive tool for diagnosing high-grade cervical intraepithelial neoplasia lesions compared to the human interpretation of cervical images

Methods This two-centered, crossover, double-blind, randomized controlled trial included 886 randomly selected images. Four colposcopists (two proficient and two inexperienced) independently evaluated the cervical images once with and without the aid of the Cerviray AI[®] system (AIDOT, Seoul, Korea).

Results The AI aid demonstrated improved areas under the curve on the localization receiver-operating characteristic curve compared with the colposcopy impressions of colposcopists (difference 0.12, 95% confidence interval [CI], 0.10 – 0.14, p -value < 0.001). Sensitivity and specificity also improved on using AI system (89.18% vs. 71.33%; $p < 0.001$, 96.68% vs. 92.16%; $p < 0.001$, respectively). Additionally, the classification accuracy rate improved with the aid of AI (86.40% vs. 75.45%; $p < 0.001$).

Conclusion/Implications This study highlights the feasibility of using an AI system as an effective assistive tool for both proficient and inexperienced colposcopists in cervical cancer screening. AI interpretation can be used as an assisting tool in combination with human colposcopic evaluation of the exocervix.

AS06. Genetics and epidemiology

SO021/#370

IMMEDIATE GERMLINE SEQUENCING IS SUPERIOR TO MULTI-STEP SCREENING STRATEGIES FOR IDENTIFYING LYNCH SYNDROME IN WOMEN WITH SYNCHRONOUS/METACHRONOUS ENDOMETRIAL AND COLORECTAL CANCERS

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Introduction We investigated whether two-step testing strategies – consisting of multiplex ligation-dependent probe amplification, somatic mutation screening in cancer tissues, and microsatellite instability analysis – can improve the detection of LS in this clinical population. We also compared the clinical characteristics and overall survival (OS) of women with and without a final diagnosis of LS.

Methods A total of 31 Taiwanese women with synchronous or metachronous endometrial and colorectal malignancies underwent both universal screening – consisting of immunohistochemistry for mismatch repair protein expression, MLH1 promoter methylation analysis, and germline mutation testing – and two-step testing for the detection of LS.

Results On applying traditional universal screening, the prevalence of LS in the study patients was 16.1% (5/31). Interestingly, the application of extensive two-step molecular testing was able to identify three previously undetected cases. Patients with and without LS in our cohort did not differ significantly both in terms of clinical characteristics and OS.

Conclusion/Implications The application of extensive two-step molecular testing may increase the identification of cases that have been previously undetected on traditional universal screening. Patients with and without LS were found to be similar both in terms of clinical characteristics and OS.

AS11. Ovarian cancer

SO022/#851

DEVELOPMENT OF NEXT-GENERATION RNA SEQUENCING-BASED DEEP-LEARNING MODELS TO PREDICT CHEMORESISTANCE RISK IN HIGH-GRADE SEROUS OVARIAN CARCINOMA

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Introduction To implement precision cancer medicine in ovarian cancer, precise prediction of treatment response and identification of patients at high risk of disease recurrence are the first steps. Thus, we aimed to develop a next-generation RNA sequencing-based deep-learning model predicting chemoresistance risk in high-grade serous ovarian carcinoma (HGSCC).

Methods We conducted next-generation RNA sequencing on fresh-frozen, chemotherapy-naïve primary HGSCC tissues from 86 patients. Patients were randomly divided into training and test sets at a 1:1 ratio. In the model development phase,