Disclosure of our latest data using endometrial cancer detection by urine, corresponding to a sensitivity of seven out of nine markers. The most optimal three-marker combination yielded an AUC value of 0.97 for endometrial cancer detection in urine, with an area under the receiver operating curve (AUC) above 0.80 for all sample types. Here, we set out to determine and compare the performance of DNA methylation biomarkers to detect endometrial cancer in prospectively collected urine samples, self-collected cervical swabs, and clinician-taken cervical scrapes.

Methodology Paired urine samples, self-collected cervicovaginal swabs, and cervical scrapes were collected from 103 women diagnosed with endometrial cancer. Women without disease served as controls. All samples were tested for nine DNA methylation markers.

Results In all sample types, methylation levels were significantly increased in patients compared to controls. A moderate to strong correlation was found between the paired samples. Urine showed superior diagnostic performance, with an area under the receiver operating curve (AUC) above 0.80 for seven out of nine markers. The most optimal three-marker combination yielded an AUC value of 0.97 for endometrial cancer detection in urine, corresponding to a sensitivity of 87% and a specificity of 99%.

Introduction/Background The incidence of endometrial cancer is rising and current diagnostics often require invasive biopsy procedures. Molecular biomarkers have proven their potential to detect gynecological cancer in minimally- and non-invasive sample types. Here, we set out to determine and compare the performance of DNA methylation biomarkers to detect endometrial cancer in prospectively collected urine samples, self-collected cervicovaginal swabs, and clinician-taken cervical scrapes.

Methodology Paired urine samples, self-collected cervicovaginal swabs, and cervical scrapes were collected from 103 women diagnosed with endometrial cancer. Women without disease served as controls. All samples were tested for nine DNA methylation markers.

Results In all sample types, methylation levels were significantly increased in patients compared to controls. A moderate to strong correlation was found between the paired samples. Urine showed superior diagnostic performance, with an area under the receiver operating curve (AUC) above 0.80 for seven out of nine markers. The most optimal three-marker combination yielded an AUC value of 0.97 for endometrial cancer detection in urine, corresponding to a sensitivity of 87% and a specificity of 99%.

Conclusion FIGO grading showed independent prognostic value in high-risk NSMP EEC, but not in POLEmut and p53abn EEC. Our findings suggest that prognostic value of grading in EEC is limited to the NSMP molecular subgroup. Future studies should clarify whether this holds up in (low-) grading in EEC or p53abn EEC. Our findings suggest that prognostic value of POLEmut and MMRd EEC. Multivariable analysis confirmed independent unfavorable prognostic impact of high-grade within NSMP EEC, but not in MMRd EEC.