prognosis, however markers that further risk-stratify intermediate groups are needed. Serum cancer antigen-125 (CA125) and human epididymis-4 (HE4) show promise as prognostic markers. The aim of this study was to evaluate the association between serum CA125, HE4 and endometrial cancer survival outcomes when stratified by molecular subgroup.

Methodology Pre-treatment serum CA125 and HE4 levels were measured and endometrial tumours classified according to WHO molecular classification. The relationship between biomarkers and survival was evaluated using Kaplan-Meier analysis and multivariable cox regression.

Results Overall, 327 women were included, with POLE status available for 216. Tumours were POLE-mutant (5%), p53-abnormal (11%), MMR-deficient (30%) and NSMP (54%). Median follow up was 50 months (IQR 30–60), during which 42 (13%) recurred and 71 (21%) women died. CA125≥35U/mL was independently associated with overall mortality [aHR=2.42 (95%CI:1.45–4.06), p=0.001), cancer specific death [aHR=2.00 (95%CI:1.04–3.87), p=0.04] and recurrence [aHR=2.69 (95%CI:1.38–5.27), p=0.004]. When stratified by molecular subgroup, CA125≥35U/mL and HE4≥150pmol/L were prognostic of overall survival in MMR-deficient [CA125: aHR=4.92 (95%CI:1.74–13.89), p=0.003 and HE4: aHR=4.03 (95%CI:1.34–12.11), p=0.01] and NSMP subgroups [CA125: aHR=3.72 (95%CI:1.30–10.67), p=0.01)].

Conclusion CA125 and HE4 may risk-stratify those at intermediate risk of recurrence and death. Evaluation in a larger population is required.

2022-RA-1457-ESGO GYNECOLOGICAL CANCER DETECTION USING FOURIER-TRANSFORMED INFRA-RED SPECTROSCOPY IN URINE SAMPLES: POTENTIAL AND ACCURACY OF MACHINE LEARNING PROCESSING

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Introduction/Background Making an early diagnosis of cancer is the challenge that modern medicine has been setting for several decades. In gynecology, no effective screening has yet been found and approved for endometrial and ovarian cancer, and, despite cervical cytology testing, cervical cancer remains a leading cause of morbidity and mortality among gynecological cancers worldwide. The emerging technique of liquid biopsy has been proposed as a method for detecting cancer in early stage using biofluids and their properties as biomarkers.

Methodology In this study, we tested the application of an artificial intelligence (AI) algorithm on infra-red spectra taken from urine samples from 84 female patients with gynecological cancer (28 breast, 32 endometrial, 24 ovarian and 10 cervical) and 200 non-tumor patients who were used as controls. The spectra were normalized, and outlier values were detected and removed using a DBSCAN algorithm. To overcome the possible problem of an unbalanced dataset, we used a SMOTE algorithm enhancing the generalization of the predictive model. The AI-model was trained and tested in classifying healthy urine samples vs different cancer types.

Results The spectra were divided into training- and testing-datasets with a ratio of 80/20 randomly + 10-fold cross validation and various classifiers were put under test: decision trees, discriminant analysis, support vector machines, logistic regression and random forest, with the latter giving the best results. In the classification report Precision-, Recall-, and F1-scores varied from 0.93 to 1.00, 0.88 to 1.00 and 0.94 to 0.99 respectively

Conclusion These results confirm the reports from previous, smaller studies and show that AI-models could be useful in differentiating biofluid samples, such as urine, between patients and healthy controls. Further research is needed in order to confirm the validity of the method and to assess its potential on clinical applications.

2022-RA-1480-ESGO TRANSLACOL PROJECT: DIGITAL-PCR HUMAN PAPILLOMA VIRUS (HPV) DETECTION FOR RECURRENCE PREDICTION IN EARLY CERVICAL CANCER PATIENTS WITHOUT PELVIC LYMPH NODE INVASION

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Introduction/Background In early cervical cancer (ECC) patients with nodal metastasis (N+) present worse survival. However, 10–15% of patients without nodal metastasis (N0) present the same survival to N+ patients.As in cervical cancer, HPV DNA could be assimilated to tumoral DNA, we evaluate the presence of HPV DNA in pelvic Sentinel lymph nodes (SLN) by new ultrasensitive droplet-based digital polymerase chain reaction (ddPCR) as a biomarker of survival.

Methodology Inclusion criteria: EEC patients who underwent pelvic SLN detection N0 in pelvic lymph nodes. Associated pelvic lymph nodes samples were available for 60 patients with HPV16, HPV18 or HPV33 positive tumours. In SLN, after DNA extraction, HPV16 E6, HPV18 E7 and HPV33 E6 gene were respectively targeted and detected by ultrasensitive ddPCR optimized on two different platforms, the RainDrop Digital PCR System (RainDance Technologies, Bio-Rad, Hercules, CA) or the Biorad system.We compare two groups according to HPV DNA in SLN: positive or negative.

Results There was no difference between the negative HPV DNA SLN group and the positive HPV DNA SLN group in terms of patients and surgical-pathological characteristics, treatments and time of follow-up. Two patients in negative HPV DNA SLN group and 6 in positive HPV DNA SLN group presented recurrence and the mean time of recurrence was

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