PUB were compared to the postsurgical pathological specimen or follow-up for non-operated tumors.

Results From November 2016 to February 2022, 34 patients were included. Based on surgical specimen (n=23) or follow up (n=11, including 4 metastasis), the final diagnoses were: 11 sarcomas and 23 non-sarcomas including 22 LM and one inflammatory myofibroblastic tumor[JS1] . The median follow-up was 12 months (IQR: 6–37). The diagnostic accuracy of M-PUB and MCGH-PUB were 94% and 100%. The sensitivity, specificity and Negative Predictive Value of MCGH-PUB were 100%, 100% and 100%. A high GI was significantly associated with malignancy (p<0·001). Genomic analyses allowed correct malignancy upgrade for four tumors after suspicious microscopic examination. There was no PUB complication and no dissemination on the biopsy track.

Conclusion MCGH-PUB is safe and accurate to discriminate pre operatively benign tumors from uterine sarcoma.

2022-RA-899-ESGO | **ELECTRODE BIOCHIPS COUPLED TO ISOTHERMAL AMPLIFICATION LAMP TECHNIQUE IN DIAGNOSTICS OF CERVICAL PRECANCER**

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Introduction/Background Persistent infection with high-risk human papillomavirus (hrHPV) is a major etiological factor of cervical cancer. Hence, the effectivity of cytological screening can be improved by the implementation of hrHPV tests [1]. Current methods of HPV detection frequently involve expensive reagents and instrumentation or need for skilled personnel. Electrochemical methods of detection may address these challenges since they offer rapid detection times and require small, inexpensive instrumentation that is simple to operate.

Methodology We compared two different bioplatforms. Both utilized loop-mediated isothermal amplification (LAMP) to amplify HPV DNA from two most oncogenic HPV types, HPV16 and HPV18, taking 30–40 mins. Then, we used capture probes to bind amplified DNA, followed by an electrochemical detection using peroxidase reaction.

Results Using magnetic beads, we detected HPV DNA directly from crude lysates of cervical cancer cell lines (CaSki, SiHa, HeLa) and from 19 clinical samples (patients with high-grade squamous intraepithelial lesions or healthy controls), without DNA extraction step [2]. Detection was possible from as little as 10 cells. We obtained excellent concordance of our assay with PCR, reaching 100% sensitivity for both genotypes, 81.82% specificity for HPV 16 and 94.12% specificity for HPV 18. Later, we omitted magnetic beads to detect HPV directly on gold electrodes, obtaining very good sensitivity and specificity when determining HPV16/HPV18 infection in 15 clinical samples when compared to the PCR [3].

Conclusion Electrochemical detection might be a useful tool in cervical (pre)cancer diagnostics due to its low cost, speed, simplicity, and high sensitivity. Support from AZV NU21–08–00057, MH CZ – DRO (MMCI, 00209805) and BBMRI-CZ no. LM2018125 is acknowledged. References: (1) Koliopoulos et al., Cochrane Database Syst Rev. 2017, 8, CD008587. (2) Izadi et al., Anal. Chim. Acta 2021, 1187, 339145. (3) Sebuyoya et al., Biosens. Bioelectron. X, 2022, submitted.

2022-RA-900-ESGO | **PERFORMANCE OF A LAMP-BASED ELECTROCHEMICAL BIOASSAY FOR DETERMINATION OF HIGH-RISK HPV INFECTION IN CLINICAL SETTINGS**

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Introduction/Background Persistent infection with the high-risk types of HPV is considered a crucial initiating factor in cervical carcinogenesis. Tests detecting the presence and especially the activity of HPV infection offer a new quality to screening and diagnostics. The limitation of these tests is, however, the price. Standardly used PCR tests are time consuming and instrument-intensive. A perspective alternative, the LAMP isothermal amplification coupled to an electrochemical detection, is presented.

Methodology We developed an assay for parallel detection of two most oncogenic high-risk HPV types, HPV 16 and HPV 18, by combining loop-mediated amplification (LAMP) of viral DNA, its separation using magnetic beads and detection with an electrochemical technique – amperometry – at carbon-based electrode chips.

Results Optimization of the method was first published on pilot files with a small number of cases.[1] Later, we carried out a small clinical study using electrochemical LAMP-based assay for detection of HPV 16/18 DNA in LBC samples obtained from 61 women undergoing conisation for cervical precancerous lesion.[2] HPV 16 and 18 assays were performed by LAMP isothermal amplification combined with electrochemical reading. The results were confirmed by PCR amplification with gel electrophoresis and two commercial HPV assays (Cobas and INNO-LiPA). The best concordance was obtained with the PCR, reaching very good specificity for both genotypes (>93%) and positive and negative predictive values over 90%.

Conclusion These data indicate that the EC-LAMP isothermal amplification may serve as an interesting alternative tool for rapid screening of oncogenic HPVs.

A support from AZV NU21–08–00057 is greatly acknowledged.

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2022-RA-1115-ESGO | **EVALUATION OF CERVICAL DYSPLASIA WITH NOVAPREP-MIR-CERVIX**

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Introduction/Background Cervical cancer (CC) is one of the most common types of cancer and the fourth leading cause of cancer-related deaths in women. Cervical carcinogenesis is multistep process of the cervical dysplasia development and progression. Correct diagnostic and effective therapy of cervical dysplasia presents an important approach to reduce CC morbidity and mortality. MicroRNAs in cervical

epithelium cells are considered as promising diagnostic markers of cervical dysplasia. MicroRNA-based diagnostic test-systems can provide a helpful addition to traditional diagnostic techniques.

Methodology NOVAprep-miR-CERVIX is a new test-system based on RT-qPCR analysis of six miRNAs (miR-21–5p; miR-29b-3p; miR-145–5p; miR-451a-5p; miR-1246–5p and miR-1290–3p) in material of cervical smear. Test-system includes quality of material control and control of enzymatic reaction efficacy. Machine learning based of random forest algorithm was applied for RT-qPCR results evaluation. Cervical smear samples were obtained from 226 women: 114 samples of normal epithelium and 112 samples of cervical epithelium with high-grad intraepithelial lesion (HSIL) or carcinoma in situ (CIS) as a result of cytological evaluation. Moreover, any of HSIL/CIS diagnosis was confirmed histologically.

Results The 38 samples from 216 (17.8%) did not pass quality controls and were excluded from analysis. NOVAprep-miR-CERVIX Index (miR-CERVIX-I varied from 0 to 1) was calculated on the base of results of six miRNA analysis for remaining 178 samples. Difference in miR-CERVIX-I was statistically significant in two groups of samples formed on the base of cytological/histological diagnosis (figure 1). Normal condition of cervical epithelium (miR-CERVIX-I < 0.49) was diagnosed with sensitivity 79.2%, specificity 80.46%. HSIL was diagnosed with sensitivity 70.83%, specificity 97.22% (miR-CERVIX-I > 0.78). Moreover, intermediate value of miR-CERVIX-I (between 0.5 and 0.77) is supposed to reflect condition of low-grade intraepithelial dysplasia.
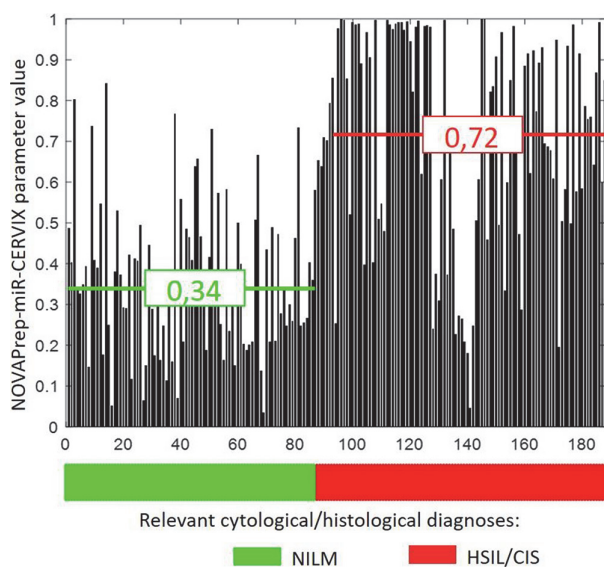
Abstract 2022-RA-1115-ESGO Figure 1

Conclusion NOVAprep-miR-CERVIX can be applied for cervical dysplasia diagnostic and management as a test system complimentary to standard methods.

DERMOSCOPY FOR GENITAL LESIONS

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Introduction/Background Diseases of the genital area cover a broad spectrum of benign and malignant disorders, that range from benign inflammatory conditions to malignant and potentially lethal diagnoses (i.e melanoma). The diagnosis of pigmented genital lesions imposes some diagnostic challenges. The application of dermoscopy can help to differentiate between benign genital lesions and malignant melanoma.

Methodology A systematic literature review of MEDLINE (PubMed) and bibliographic cross-referencing was performed to identify articles covering dermoscopy features of common and atypical nevi, melanosis and melanoma. Articles were included if dermoscopy was performed on genital lesions and dermoscopy features of pigmented genital lesions were described and extractable.

Results A total of 19 articles with 455 dermoscopy cases of genital lesions could be extrapolated from the published literature. Identified dermoscopy criteria for genital melanoma included asymmetry of color and or structure (92%), followed by blue/white or blue/grey veil (69.2%). Genital melanosis showed a diffuse pigmentation in 51.4% and a ringlike pattern in 27.8% of described cases. Features identified in common genital nevi included a homogeneous brown-gray pigmentation or brown structureless areas and were described in 35.1%. A globular pattern was described in 35.7%.

Conclusion Clinically pigmented genital lesions may look alarming, however the application of dermoscopy may help to differentiate benign melanosis and common genital nevi from melanoma.

THE IMPACT OF OOPHORECTOMY ON SURVIVAL FROM BREAST CANCER IN PATIENTS WITH CHEK2 MUTATIONS

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Introduction/Background To estimate the impact of oophorectomy and other treatments onthe survival of breast cancer patients with a CHEK2 mutation.

Methodology Women with Stage I-III breast cancer who were treated at 17hospitals in Poland were tested for four founder mutations in the CHEK2 gene.974 women (10%) were positive for a CHEK2 mutation. Control patientswithout a CHEK2 mutation were selected from a database of patients treatedover the same time period. Information on treatments received and distantrecurrences were retrieved from medical records. Treatments includedchemotherapy, hormonal therapy