

### 39. THE CURRENT PRACTICE IN THE DIAGNOSIS OF CERVICAL CANCER

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**Introduction.** Annually more than 500 thousand women are diagnosed with cervical cancer and more than 300 deaths occur from the disease. Being associated with HPV infections and mainly asymptomatic in early stages, it is a highly preventable form of cancer. Consequently the accuracy of diagnosis and staging is critical to timely and effective treatment.

**Aim of study.** To explore the current practice in diagnosis of cervical cancer.

**Methods and materials.** The study was performed based on review of related retrospective research and various scientific materials (articles in specialised journals, monographs, national protocols and standards, articles on the Internet etc.).

**Results.** Conventional cytology is still largely applied in many countries showing a specificity of 76-98,5%, but a moderate sensitivity (37,8-81,3%). Liquid-based cytology proved a higher detection rate. Dual staining p16/Ki-67, is a complementary cytological method with a sensitivity up to 96%. Visual inspection methods (VIA, VILI) with testing accuracy similar to cytology, are actively used in low and middle income countries. Currently, DNA HPV testing (HC-II, PCR) is the most accurate, being strongly recommended by WHO, with a specificity up to 95,8% and sensitivity of 100%. HPV mRNA testing proved higher specificity (by 1,04). Targeted biopsy assisted by colposcopy remains a golden standard in cervical cancer diagnosis, no therapeutic strategy being implemented without histological confirmation. Other biopsy forms considered are cone biopsy and endocervical curettage. Tumor staging is highly based on modern imaging techniques. MRI (DWI and DCE MRI) is the most sensitive with 94% accuracy (CT – only 76%), especially in assessment of local extension and distant metastases. PET/CT is superior in detecting metastatic nodes. Numerous screening and diagnostic methods are currently under evaluation. AI assisted screening techniques based on automated evaluation of colposcopy or cytology images (Automated Visual Evaluation) or machine learning data-driven diagnosis models (SVM, RF) present high accuracy results (over 90%). DNA methylation is also a promising method, currently under research (detection rate up to 98,3%). Other diagnostic techniques, like next generation sequencing technologies (TEN16, HIVID), fluorescence, reflectance and Raman spectroscopy, have also received great interest.

**Conclusion.** Cervical cancer diagnosis is based on numerous methods and has been evolving substantially over the recent decades, becoming more efficient. New techniques are under investigation, characterised by higher objectivity and accuracy of the diagnosis process.