

Congress Abstract

Comprehensive Diagnosis of Cervical Intraepithelial Neoplasia Based on a Digital Module

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Objective: To evaluate the medical-organizational and clinical effectiveness of optimizing comprehensive diagnostics and follow-up care for patients with cervical intraepithelial neoplasia (CIN) through the introduction of a specialized digital module into the national Health Management Information System (HMIS/DHIS2) of the Republic of Tajikistan.

Materials and Methods: An analysis was conducted on the results of diagnosis, treatment, and dynamic follow-up of 542 patients with morphologically verified CIN1–3/Tis, aged 20 to 65 years, examined during 2023–2026. The main group using the digital system (n=82) was compared with a control group managed through paper-based documentation (n=460). The developed Digital Module for Early Diagnosis (DMED) of cervical cancer enabled the integration of 51 specialized cervical pathology units at district and city health centers, HPV diagnostics laboratories, cytology laboratories, and the State Institution "Republican Oncological Scientific Center" (ROSC). Time intervals for completing stages of medical care and the proportion of patients under follow-up care were assessed.

Results: The use of automatic tracking algorithms through the DMED for cervical cancer reduced the total diagnostic and treatment time interval (from abnormal visual screening through extended diagnostics to organ-preserving treatment with LEEP/cone biopsy) from 68.4 ± 5.2 to 21.2 ± 2.4 days ($p < 0.001$). The proportion of women lost to follow-up decreased from 34.2% to 6.1%. All 5 cases of invasive cervical cancer detected using the DMED were diagnosed at stage I of the disease.

Conclusion: The implementation of the DMED for cervical cancer optimizes the organization of gynecologic oncology care, eliminates lost links in patient referral pathways, and ensures a high level of monitoring of the health status of patients with precancerous pathology of the cervix.

Keywords: Cervical Intraepithelial Neoplasia; CIN; Cervical Cancer; Diagnostic Optimization; Digital Module; HMIS; DHIS2; Patient Referral Pathways; Follow-Up Monitoring; Tajikistan