

between September 2014 and February 2023 were enrolled. The prescribed dose of external beam radiotherapy was 45–50.4 Gy, and the total dose of interstitial brachytherapy was 25–30 Gy per 5 fractions. The endpoints were 5-year local and pelvic control rates, 5-year disease-free and overall survival rates, and the adverse events rate.

Results The median follow-up period was 53.5 months (4.1–102.0 months). Eighteen patients received concurrent cisplatin therapy (40 mg/m², q1week). Five (23.9%), ten (47.6%), and six (28.6%) patients had T2b, T3b, and T4 cervical cancer, respectively. Pelvic and para-aortic lymph node metastases were detected in 13 (61.9%) and 3 (14.3%) patients, respectively. The median volume before interstitial brachytherapy was 42.6 cm³. The 5-year local control, pelvic control, progression free survival, and overall survival rates were 95.0%, 87.7%, 78.3%, and 83.2%, respectively. Four (19.0%) patients experienced grade 3 adverse events, and none experienced grade 4–5 adverse events.

Conclusion/Implications 3D image-guided multi-catheter interstitial brachytherapy could be a promising therapeutic strategy for locally advanced cervical cancer.

EP068/#553

HPV-INDEPENDENT ADENOCARCINOMA HAS POORER PROGNOSIS THAN SQUAMOUS CELL CARCINOMA AND HPV-ASSOCIATED ADENOCARCINOMA, AND HPV-ASSOCIATED ADENOCARCINOMA HAS SIMILAR PROGNOSIS WITH SQUAMOUS CELL CARCINOMA

¹Hyo Eon Kwon*, ²Seong Bin Ahn, ²Hye Jin Kim, ²Eun Hye Cho, ²Do Hwa Im, ²Da Hyun Kim, ²Young Nam Kim, ²Kyung Bok Lee, ²Moon Su Sung, ²Dae Hoon Jeong. ¹Busan Paik Hospital, Obgy, Busan, Korea, Republic of; ²Busan Paik Hospital, College of Medicine, Inje University, Department of Obstetrics and Gynecology, Busan, Korea, Republic of

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Introduction In general, adenocarcinoma of the cervix is known to have a worse prognosis than squamous cell carcinoma (SCC). The World Health Organization classification divides endocervical adenocarcinoma (ADC) into human papillomavirus (HPV)-associated (HPVA) and HPV-independent (HPVI) types in 2020. This study aimed to compare the prognosis of HPVA ADC, HPVI ADC, and SCC.

Methods We retrospectively reviewed the medical records of 185 patients with SCC, 61 patients with HPVA ADC, and 13 patients with HPVI ADC, who underwent radical hysterectomy and pelvic lymphadenectomy for cervical cancer 2018 FIGO stage IA2 – III from January 2005 to December 2016. Prognostic factors, recurrence rate, disease-free survival (DFS) and 5-year survival outcomes were compared between HPVA ADC, HPVI ADC and SCC.

Results The incidence of deep stromal invasion (\geq middle or deep 1/3) was higher in HPVI ADC patients than in HPVA ADC and SCC patients (92.3%, 65.6%, 82.2%, $P=0.0108$). HPVI ADC was associated with a higher recurrence rate compared to HPVA ADC and SCC (46.2%, 19.7%, 15.1%, $P=0.0166$). HPVI ADC was associated with worse DFS compared with HPVA ADC, SCC (44.9 months, 127.9 months, 91.3 months, $P=0.0123$). HPVI ADC was associated with

worse 5-year survival rate compared with HPVA ADC, SCC (69.2%, 85.2%, 91.9%, $P=0.0207$). There was no difference in 5-year survival rate between patients with HPVA ADC and patients with SCC.

Conclusion/Implications HPVI ADC had a poorer prognosis compared to HPVA ADC and SCC. However, there was no difference in prognosis between HPVA ADC and SCC in 2018 FIGO stage IA2 – III cervical cancer.

EP069/#511

EVALUATION THE MULTILAYER SCANNER FOR LBC CYTOLOGY WITH SOFTWARE CONTAINING NEURAL NETWORKS AND MACHINE LEARNING ENABLING REMOTE SUPPORT FOR THE DIAGNOSIS ENHANCED WITH DIFFERENTIATING ALGORITHM

¹Łukasz Lasyk*, ²Jacek Gronwald, ³Wojciech Olszewski, ⁴Mariusz Bidziński, ⁵Paweł Żuk, ⁵Artur Prusaczyk, ⁵Ewa Prokurat, ⁶Jakub Barbasz, ¹Tomasz Włodarczyk. ¹Digitmed S.A., Randd, Olesnica, Poland; ²Pomeranian Medical University, Department of Genetics and Pathology, Szczecin, Poland; ³Maria Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Department of Pathology, Warsaw, Poland; ⁴Maria Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Oncological Gynaecology Clinic, Warsaw, Poland; ⁵Centrum Medyczno-Diagnostyczne Sp. z o.o., Healthcare, Siedlce, Poland; ⁶Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, Nano and Microscale Systems, Krakow, Poland

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Introduction Cervical cancer mortality in Poland is high. Access to diagnosticians is still insufficient. To deal with this problem a multilayer LBC sample scanner and software was built and implemented, which improved accuracy of diagnostics and limited time of obtaining results. Due to shortage of diagnosticians, a support system based on artificial intelligence algorithms was launched, offering the possibility of remote viewing of scans samples and medical history of the patient. The final diagnosis is always made by cyto-screeners on the basis of system results and cyto-screeners analysis.

Methods The software is based on the artificial neural network (U-NET architecture) designed to recognize suspicious regions and a neural network (VGG) allowing to determine the type of disorder. A machine learning element (fuzzy K-Means) was added - responsible for the fusion of the patient's medical history with the neural network system results. A differentiating algorithm included is the crucial part of the system to increase sensitivity of the method especially in recognizing HSIL, ASC-US, ASC-H, Ca Plano.

Results 3161 (LBC) samples were evaluated by cyto-screeners. Cytological abnormalities were found in 458 (14.3%) cases. Selected samples with diagnosed abnormality were a model to teach the artificial intelligence algorithms. Preliminary results obtained so far indicate 94–97% compliance with results obtained using standard methods. Implementing additional differentiating algorithm has improved results to the level of 96–98% compliance.

Conclusion/Implications Further refinement of neural networks is necessary to improve sensitivity and specificity. A study with a larger sample size will be conducted to evaluate the software.