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Diagnostic Accuracy of Cervicovaginal Cytology in the Detection of the Squamous Epithelial Lesions of Uterine Cervix; Cytologic/Histologic Correlation of 481 Cases

[Sang Mo Park], M.D., So-Young Jin, M.D., Mee Sun Kim, M.T., Yoon Mi Jeon, M.D.,
Dong Won Kim, M.D., and Dong Wha Lee, M.D.

Department of Pathology Soonchunhyang University Hospital, Seoul, Korea

Background : The cervicovaginal cytology is used as a screening test of uterine cervical cancer. The sensitivity of cervicovaginal cytology is known to be less than 50%. However, The cytologic histologic correlation study is very limited. We analyse the diagnostic accuracy of cervicovaginal cytology in the detection of the squamous epithelial lesions of the uterine cervix and investigate the cause of diagnostic discordance.

Materials and Methods : A total of 481 sets of cervicovaginal cytology and biopsy for 5 years were enrolled. The cytologic diagnoses were categorized based on The Bethesda System and the histologic diagnoses were classified as negative, flat condyloma, cervical intraepithelial neoplasia(CIN) I, CIN II, CIN III, and squamous cell carcinoma. Cytologic histologic discrepancy cases were reviewed to find the cause of error.

Results : The cytologic diagnosis was accorded with the histologic diagnosis in 380 out of 481 cases(79.0%). The sensitivity and specificity of cervicovaginal cytology were 80.6% and 92.6%. Its positive predictive value and negative predictive value were 93.7% and 77.7%. The false negative rate was 19.4%. Among 54 false negative cytology cases, they were confirmed by histology as 50 flat condylomas, 2 CIN I, 1 CIN III, and 1 squamous cell carcinoma. The causes of false negative cytology were sampling errors in 75.6%(34/45) and interpretation errors in 24.4%(11/45). The false positive rate was 7.4%. Among 15 false positive cytology cases, they were confirmed by histology as 12 atypical squamous cells of undetermined significance(ASCUS)s and 3 low grade squamous intraepithelial lesion(LSIL)s. The cause of error was interpretation error in all cases. The overall diagnostic accuracy of cervicovaginal cytology was 85.7%(412/481).

Conclusions : The cervicovaginal cytology discloses high overall diagnostic accuracy and is the very useful primary screening test of uterine cervical cancer.