

# Comparison of histological outcomes from pre-menopausal and Post-menopausal women with report of cervical cytological abnormality



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## Introduction

Worldwide, 15% of all cancers in women are cervical cancer. According to the Korea Cancer Registry data, cervical cancer is the 9th most common cancer in women and 3rd among gynecologic cancer-related deaths in South Korea. Lots of studies have demonstrated a lower detection rate of dysplasia in histological follow-up test of postmenopausal women with cytological abnormality of atypia or atypical squamous cells of undetermined significance (ASC-US). Assessment of cervical smears of postmenopausal women presents specific diagnostic challenges. Causes of the difficulty in interpretation include hormonal changes, inflammation, reactive metaplasia, air drying and sampling problems. The aim of this study is to compare histologic results between premenopausal and postmenopausal women with report of cervical cytological abnormality.

## Materials and Methods

From January 2010 to May 2018, patients with abnormal cervical cytology followed by histopathologic examination were collected from Department of Obstetrics and Gynecology of Haeundae Paik Hospital. The patients were divided into two groups according to menopausal status and the histologic results of the two groups were compared. Women with early menopause (<40 years), previous history of cervical intraepithelial neoplasia (CIN), cervical cancer or other genital malignancies were excluded.

This study included the following cervical cytological abnormalities: atypical squamous cells of undetermined significance (ASC-US), low-grade squamous intraepithelial lesion (LSIL), atypical squamous cells, cannot exclude high-grade squamous intraepithelial lesion (ASC-H), high-grade squamous intraepithelial lesion (HSIL). Results from the previous two categories were classified as low risk subgroups and those from the latter two categories were classified as high risk subgroups.

## Results

Total 553 women were diagnosed as cervical cytological abnormality in our outpatient clinic. Among them, 438 were premenopausal and 115 were postmenopausal women. The results of the cervical cytology among premenopausal women were ASC-US (n=91), LSIL (n=90), HSIL (n=193) and ASC-H (n=64). The results were ASC-US (n=12), LSIL (n=21), HSIL (n=63) and ASC-H (n=19) in postmenopausal women (Table 1).

Table 1. Incidence of cervical cytological abnormalities

Cytology	Premenopausal group (n=438)	Postmenopausal group (n=115)
ASC-US	91 (20.8%)	12 (10.4%)
LSIL	90 (20.5%)	21 (18.3%)
HSIL	193 (44.1%)	63 (54.8%)
ASC-H	64 (14.6%)	19 (16.5%)

Within the low risk cytology group, more than HSIL was 73.5% (133/181) by histologic biopsy in premenopausal group and 42.4% (14/33) in postmenopausal group. This was 88.7% (228/257) in premenopausal group and 70.7% (58/82) in postmenopausal group within high risk cytology group (Table 2). In both comparisons, there was a statistically significant difference between premenopausal and postmenopausal women.

Table 2. Histological results of the groups

Histology	Premenopausal group		Postmenopausal group	
	Low risk	High risk	Low risk	High risk
Less than LSIL	48	29	19	24
More than HSIL	133	228	14	58
Total	181	257	33	82

Postmenopausal hormonal changes, such as hypoestrogenism, may increase the likelihood of atrophic changes and may lead to inadequate findings in cervical cytology. Atrophic changes can sometimes mimic high grade disease and factors such as sampling, air drying, and inflammatory changes can affect the evaluation of smear test. Immature metaplasia and reactive changes can be misinterpreted as squamous atypia or more severe lesions. In addition, these changes may lead to inadequate visualization of the squamocolumnar junction in colposcopy.

## Conclusion

In conclusion, our comparative study showed a significant difference in cytologic and histologic results between premenopausal group and postmenopausal group with cervical cytologic abnormality. Based on the results, the cytologic examination of postmenopausal women is less sensitive than that of premenopausal women, and therefore the cervical cytology including high-risk HPV test is considered more conservative management than immediate colposcopic biopsy. This result is more significant as the proportion of older women participating in PAP smear is likely to increase in future due to the aging of the population.