Background: Cervical cytology has limited sensitivity to detect cervical precancerous lesion. Human papilloma virus high risk (hr-HPV) DNA testing is highly sensitive but specificity is limited. We assessed whether p16\textsuperscript{INK4a}/ki-67 dual stained cytology can improve the predictive value for high grade cervical (CIN2+) lesions.

Aim/objective: To assess the significance of P16/Ki-67 immunocytochemistry in improving the predictive value for high grade cervical intraepithelial (≥ CIN 2+) lesions on Pap smear.

Material and methods: This is a prospective diagnostic study which included 94 cases of ASC-S/LSIL/ ASC-H and HSIL on thinprep cervical smears who also underwent hr-HPV DNA test and colposcopy guided biopsy between July 2016 to March 2017. P16\textsuperscript{INK4a}/Ki-
immunocytochemistry was performed in the residual thin prep samples. Sample for hr-HPV DNA test by Hybrid Capture 2 assay were collected during colposcopy. Biopsy is the gold standard against which performance of P16<sup>INK4a</sup>/Ki-67 and hr-HPV results were compared.

**Results:** In women of all ages, sensitivity (96.8%) and negative predictive value (97.6%) for hr-HPV test and p16/Ki-67 dual immunocytochemistry (≥ 1 positive cell) were similar, but the latter test showed better specificity (70.2 vs 55.8) and positive predictive value (61.2 vs 51.7) for ≥ CIN 2 lesions. A higher cut off of at least 10 positive cells gives a clinically and statistically higher specificity and positive predictive value, while however, slightly decreased sensitivity and negative predictive value.

**Conclusion:** Since High risk HPV test has high sensitivity and negative predictive value while P16/Ki-67 dual immunocytochemistry (≥ 10 positive cells) has high specificity and positive predictive value, the latter can be recommended as an ancillary test in hr-HPV test positive women, to reduce the number of women going for colposcopy and biopsies.

**Key words:** ASC-US, LSIL, ASC-H, HSIL, P16<sup>INK4a</sup>/ki-67, hr-HPV DNA, Cervical Intraepithelial Neoplasia – CIN 2+.