

# Human Papillomavirus (HPV) Genotypes Distribution in Histologically Confirmed Cervical Intraepithelial Neoplasm (CIN) in Malaysia

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## Background:

Appreciating the regional type-specific High-Risk Human Papillomavirus (HRHPV) prevalence in cervical neoplasia cases is important to guide policy making for cervical cancer elimination. The main objective of this study is to correlate the distribution of HRHPV types in relation to histological outcomes in screen positive women.

## Methods:

Liquid based cervical cytology (LBC) and biopsy samples were collected under colposcopic guidance from HRHPV positive women attending colposcopy at University Malaya Medical Centre from July 2018 to June 2020. LBC samples were genotyped using BD Onclarity Assay to test for 14 HRHPV types whereas biopsy samples were sent for histo-pathological evaluation at the hospital pathology laboratory. Descriptive statistics were used to describe the distribution of HRHPV types in different histological findings. Pearson Chi-square test was used to determine the association of HRHPV with histology findings.

## Results:

Samples were collected from 225 participants with a median age of 41 (IQR 35.0 – 49.5). One sample (0.4%) was excluded due to poor DNA yield. Of the 224 samples, 53.6% (120/224) were histologically normal, 29.9% (67/224) were Cervical intraepithelial neoplasia grade 1 (CIN 1) and 16.5% (37/224) were CIN 2+. HRHPV was detected in 59.8% (134/224) of the samples with a significant difference between histologically normal (47.5%), CIN 1 (64.2%) and CIN 2+ cases (91.9%) ( $p < 0.001$ ). The most prevalent HRHPV found in CIN1 were HPV56/59/66 (32.6%), HPV52 (18.6%) and HPV 35/39/68 (18.6%). Among the CIN2+ cases, 13 had HPV16 (38.2%) and another 9 were positive for HPV52 (26.5%)

## Conclusions:

HPV 16 and HPV 52 were the most prevalent HPV types associated with CIN2+ in our setting. These findings inform policymakers in strategizing cervical cancer prevention policy in terms of vaccination program and the triage to detect CIN cases in Malaysia.

## Disclosure of Interest Statement:

The authors declare no potential conflicts of interest.