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Prevalence, Genotype Distribution, Risk Factors and Treatment of Cervical Human Papillomavirus Infection among Women in Dharan Municipality

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Abstract

Background

In this study we aimed to determine the overall and type-specific prevalence of cervical human papillomavirus (HPV) infection, risk factors for such infection among women in Dharan Municipality, and treatment of those with HPV infection.

Methods

It was a descriptive observational study conducted among 3857 married women aged 30-60 years in 18 wards (Ward no. 1 to 20 except 4 and 7) of Dharan Municipality, Province 1, Nepal in July, 2024. Sociodemographic data and information on risk factors for cervical cancer were obtained through an interview. Cervicovaginal swab was collected for HPV DNA detection (both physician assisted and self sampling). HPV DNA testing was done in Provincial (province one) Health Laboratory (PHL) at Biratnagar by Jiangsu Macro-Micro test kit using the platform of Q-Tower 3 Analytica Jena. It was a multiplex assay and the HPV types detected were HPV 16, HPV 18, and other hrHPV (HPV 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and 68). Triaging was done with VIA, conventional PAP smear and/or colposcopy for

those with HPV DNA positive women. Treatment was done with thermocoagulation or LEEP for those with abnormal triage results but advised for close follow up at 1-2 years if the triage results were normal.

Results

Among them, 161 women had hrHPV infection and 186 cervicovaginal samples had inconclusive reports accounting for the HPV prevalence rate of 4.39% (161/3671). HPV16 positivity was seen in 42.9% (69/161) women, HPV 18 positivity in 8.1% (13/161), other hrHPV positivity in 55.3% (89/161), and co-infection in 6.2% (10/161) women. 186 samples had inconclusive reports. Only eleven among 161 HPV positive women had previously been screened in their lifetime. HPV infection was associated with early age at marriage, early age at first child birth, multiparity, and current smoking. Among 161 HPV positive women, only 100 women had followed up for triage test (VIA triage=92, PAP cytology triage=8) while rest of the 61 women did not follow up for triage testing. Among 100 women undergoing triage testing, 47 women were VIA positive, 45 women were VIA negative and 8 women had PAP cytology as NILM. Among 47 women with VIA positivity, acetowhite lesions were seen in the anterior lip in 34 women,

posterior lips in 10 women and both lips in 3 women respectively. Among 47 women with VIA positivity, nine women had undergone colposcopy triage before treatment. Among nine women with colposcopy triage, six women underwent LEEP procedure (1 women=SCC, HSIL=4 women, LSIL=1 women) and four women had thermocoagulation. Altogether, 41 women fulfilling the eligible criteria were ablated with thermocoagulation (38 women after VIA

triage, 3 women after VIA and/or colposcopy triage). One women with SCC underwent laparoscopic radical hysterectomy for early stage disease.

Conclusion

This is the first population-based study to report the prevalence, risk factors and treatment of cervical HPV infection from eastern part of Nepal.

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