

Diagnostic Colposcopy for HPV/DNA Screen Positive Women at the Colposcopy Clinic Family Health Bureau, Colombo

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Abstract

Background: HPV/DNA screening can be used as a primary cervical cancer screening method. The objective of the study was to describe colposcopy results of HPV/DNA screen positive women according to the Asia-Oceania guidelines of follow-up. **Method:** Descriptive longitudinal study was conducted from 1st of September 2018 to 28th of February 2020 from women, who were undergone for HPV/DNA screening under the pilot project carried out in public health divisions called Medical officer of Health (MOH) areas in Kalutara district. Study population comprised of 35 and 45 year age cohort ever married women in MOH areas of Kalutara district. HPV/DNA screen positive women with cytology results \geq Atypical Squamous Cells of Undetermined Significance (\geq ASCUS) were referred to colposcopy. Total number of 106 women were referred to FHB colposcopy clinic. Total number of 95 women were subjected to biopsy and biopsy screening was carried out by a machine by the Consultant Histopathologist. **Results:** Percentage of biopsy tissue abnormality among overall HPV/DNA screen positive women with cytology \geq ASCUS was 81.05% (77/95). Percentage of biopsy tissue abnormality among HPV/DNA genotypes 16 and 18 screen positive women with cytology \geq ASCUS was 92.7% (51/55). Percentage of women subjected to biopsy following abnormal colposcopy results was 89.6% (95/106). Among all biopsy screened 4.6% (5/95) were cervical cancer, 8% (8/95) were High Grade Squamous Intraepithelial Lesions (HGSIL) and 67.36% were Low Grade Squamous Intraepithelial Lesions (LGSIL) (64/95). **Conclusions:** Colposcopy and biopsy of HPV/DNA screen positive follow-up has revealed a very high detection rate of Cervical Intraepithelial Neoplasia (CIN). Therefore, HPV/DNA screening as a primary cervical cancer screening method should be considered as its suitability was well assessed at Sri-Lankan setting.

Keywords

Cervical Cancer Screening, Positive Follow-Up, Diagnostic Test, Colposcopy

1. Background

Cervical cancer is the 2nd leading cause of female cancer in Sri Lanka [1]. Hence in 1998, Sri Lanka took an initiative to include screening for cervical cancer with conventional papanicolaou (pap) smear in the Well Woman

Clinics (WWCs). However, even after 20 years of cervical cancer screening (with pap smears), there is no marked reduction in incidence, morbidity and mortality of cervical cancer in Sri Lanka. Two major drawbacks of the present programme are, the suboptimal sensitivity of the pap smear (53%) [2] to detect Cervical Intraepithelial Neoplasia (CIN) and the low coverage (53.6%) [3] of the cervical cancer screening programme.

All cervical cancers are associated with Human papillomavirus (HPV) infection and HPV genotypes 16 and 18 contributes for 70% of all cervical cancers. Other high risk carcinogenic genotypes of HPV infection are genotypes 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66 and 68 (12 pooled high risk). Human papillomavirus/DNA (HPV/DNA) screening test (sensitivity 92.9%) can be used as a primary cervical cancer screening method and screen positive women are followed-up according to the Asia-Oceania guidelines [4]. In HPV/DNA screening, screen positive women with cytology result \geq Atypical Squamous Cells of Undetermined Significance (ASCUS) women only are referred for colposcopy, therefore the burden of colposcopy is reduced for 40%-50% in a country.

Asia Oceania Guidelines can be followed [4] for further investigation of the high risk HPV positive women. As per this guideline the HPV/DNA positive women should have pap smear cytology (Figure 1). If cytology is positive for \geq ASCUS, then women should be referred for colposcopy. The HPV/DNA positive cytology negative women should have HPV/DNA test repeated after 1 year. If the test is negative then woman goes back to routine screening. Women with persistent HPV infection have a very high risk of developing CIN2+ lesions [5]. They need to have colposcopy. Even if the colposcopy is normal, women with persistent HPV infection should be followed up yearly with cytology till three consecutive tests are negative [4].

Such triaging approach has the following advantages such as the highly sensitive and objective HPV/DNA test will pick up the true disease more efficiently, due to high negative predictive value of the HPV/DNA test, the HPV/DNA negative women can safely be advised to repeat screening after 10 years or no further screening, if they are negative at 45 years of age, only the HPV/DNA positive women will require cytology, since cytology will be done on the high risk cases, the positive predictive value and the sensitivity of cytology will improve, therefore the cyto-screeners will be less burdened. The objective of the study was to describe colposcopy results of HPV/DNA screen positive women according to the Asia-Oceania guidelines of follow-up [4].

2. Methods

Descriptive longitudinal study was conducted from 1st of September 2018 to 28th of February 2020 from 35 and 45 years old women, who were undergone for the HPV/DNA screening under the pilot project carried out in the public health divisions called Medical officer of Health (MOH) areas in Kalutara district.

HPV/DNA screen positive women with cytology results \geq ASCUS were referred to colposcopy clinics at Kethumathie Maternity Hospital, Panadura and Family Health Bureau (FHB), Colombo. Total number of 106 women were referred for FHB colposcopy clinic.

Colposcopy was carried out by using digital colposcope with 1% acetic acid or 5% Lugol's iodine. Total number of 95 women were subjected to biopsy and biopsy screening was carried at National Hospital for Respiratory Diseases at Welisara by the Consultant Histopathologist by using a biopsy screening machine.

In primary screening, all HPV/DNA screen positives are referred for cytology (ASC-US triage) according to the positive follow-up algorithm of Asia Oceania guidelines for the implementation of programs for cervical cancer prevention and control [4]. HPV/DNA screen positive with cytology \geq ASCUS women only are referred for colposcopy procedure, while the HPV/DNA screen positive but cytology negative women are re-screened for HPV/DNA after one year (Figure 1). Data were entered by using SPSS version 20. Descriptive statistics were used to analysis the data.

3. Results

Percentage of biopsy tissue abnormality among overall HPV/DNA screen positive women with cytology \geq ASCUS was 81.05% (77/95). Percentage of biopsy tissue abnormality among HPV/DNA genotypes 16 and 18 screen positive women with cytology \geq ASCUS was 92.7% (51/55), while the percentage of biopsy tissue abnormality among HPV/DNA genotypes 12 pooled high risk screen positive women with cytology result \geq ASCUS was 65% (26/40). Percentage of women subjected to biopsy following abnormal colposcopy results was 89.6% (95/106). Among all biopsy screened 4.6% (5/95) were cervical cancer, while 8% (8/95) were High Grade Squamous Intraepithelial Lesion (HGSIL) and 67.36% were Low grade Squamous Intraepithelial lesion (LGSIL) (64/95).

4) Authors' contribution

KCMP was participated in the design of the study, coordinated data collection performed the statistical analysis and drafted the version of the manuscript. RS and RP were participated in the design of the study. KCMP was performed the statistical analysis and interpreted data. Both RS and RP were helped to draft the manuscript. All five authors read and approved the final manuscript.

5) Ethical approval and consent to participate

Ethical clearance was obtained from the Ethics Review Committee (ERC), Faculty of Medicine, University of Colombo, Sri Lanka (ref number EC-17-138). Informed written consent was obtained from each of the selected participants at the field during the initial study. Confidentiality was highly maintained, while handing over individual colposcopy and biopsy result reports. Administrative clearance was obtained from the Director, Family Health Bureau, Colombo and Director, National Hospital for Respiratory Diseases, Welisara.

6) Consent for publication

Not applicable.

7) Competing interests

Authors declared that they have no competing interests.

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