

Comparison of the diagnostic value of Pap smear, visual inspection methods and colposcopy in detection of pre-invasive lesions of the cervix among women having unhealthy cervix: a cross sectional study at a tertiary care center in central India

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Introduction: Cervical cancer which is preventable is the commonest genital cancer in developing countries including India. Implementation of several screening strategies has led to a remarkable decline in the cervical cancer incidence and mortality worldwide. Conventional Pap smear which is the primary and most widely used screening tool, carries 10-70% false negative rate. In low-resource settings, visual inspection with acetic acid (VIA) and Lugol's iodine (VILI) are promising alternatives owing to their simplicity, rapidity of results, cost-effectiveness and comparable performance in mass screening for cervical cancer. Assessment of women with colposcopy impressions of the cervical transformation zone and histological appraisal of directed punch biopsies is an excellent method but less commonly used. The reported sensitivity of colposcopy in some Indian study has been shown to be, 60-98% for the detection of intraepithelial disease. A high prevalence of human papilloma virus (HPV) infection has been reported from adolescent and young adult tribal women of Central India, but HPV DNA testing is still not widely available and is expensive. Data on effectiveness of all these screening methods, which are less expensive and less resource-intensive, are limited from this geographical territory. This study will help to provide insights into the diagnostic performance of these techniques in a hospital based screening when used alone or in combination.

Methodology: All married women between 21 to 65 years attending gynecology OPD of AIIMS, Raipur and having unhealthy cervix (presence of cervical erosion, cervix which bleeds on touch, ulcerated lesions, growth, with history of post coital bleeding) were included after informed consent. Detailed history was elicited. All women were subjected to conventional Pap smear, VIA, VILI and colposcopy. Reid colposcopic index scoring was performed. Directed biopsy was taken in case of any suspicious lesion detected on VIA, VILI or colposcopy. Diagnostic value of each screening method was determined in terms of sensitivity, specificity,

positive predictive value and negative predictive value. Results: Total 352 patients were evaluated. Around 49% of the patients were found to have abnormal cytology in biopsy reports. The sensitivity and specificity of Pap smear was found to be 34 % and 94%, at the same time colposcopy has high sensitivity and low specificity i.e. 99% and 31%. On the other hand the sensitivity and specificity of VIA and VILI are comparable i.e. 65% and 45% and 64% and 48% respectively. Pap smear shows high positive predictive value i.e. 85% and colposcopy shows 58% for the same. The positive predictive value of VIA and VILI are 55%.

Conclusion: So there is a need to investigate alternative strategies which are more practical, feasible, effective, and whose results are available immediately. Pap's smear is subjective test, slides can be mislabelled or lost and carries low sensitivity but high positive predictive value. As compared to Pap smear, VIA and VILI are more sensitive and are of low cost. Colposcopy can be considered as a preferred method of screening due to its extremely high sensitivity.