GYNAECOLOGY

VIA screening for cervical cancer in developing countries: Potential role of the light source

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A total of 385 symptomatic patients presenting to the gynaecology and obstetrics outpatient department were screened by two sources of light: the yellow light of the tungsten bulb and the white light of the halogen bulb (100 Watt, 12 Volt), fitted with KODAK 80B filter and diffuser in an instrument called a ‘Magnivisualizer’® (developed by our Institute). Colposcopic examination was the gold standard for visualisation of the cervix. This study clearly brings out the significance of visual examination of the cervix using white light; as, in addition to having perfect correlation with colposcopy (0.86 for white vs 0.53 for yellow light), white light enables us to select the correct site of biopsy. Most of the rural clinics use torch or ordinary tungsten bulb, thus missing many significant lesions. In the light of our research findings, we strongly recommend the use of white light (complete spectrum of light) for screening purposes.

Keywords: Cervical cancer screening, visual inspection, visual inspection with acetic acid

The agreement for lesions between colposcopy and the yellow light was observed in 325 out of 385 patients (proportion agreement 84.4%) and the kappa statistic was only 0.533 (moderate agreement). The corresponding agreement between colposcopy and white light of the Magnivisualizer was observed in 362 out of 385 patients (proportion agreement 94.0%) and the kappa statistic was 0.86 (almost perfect agreement).

In addition, the white light was extremely helpful in deciding on the biopsy site for the lesion. Figures 1 and 2 show a photographic representation of a lesion seen in white light and yellow light. It can be seen that in the tungsten light, only one poorly-demarcated lesion is visualised, which on biopsy revealed condylomatous changes only. In sharp contrast, the same cervix when viewed in white light, detected a well-demarcated white flat lesion at 6 o’clock positions, in addition to the condylomatous lesion at the 4 o’clock position. Biopsy of the flat white lesion revealed CIN III pathology. Thus, in the absence of white light, we would have missed a high-grade lesion, a precursor of invasive cancer. In yellow light, one would have detected only a condylomatous lesion, thus giving a false sense of assurance of screening to the women.
This study clearly brings about the significance of visual examination of the cervix using white light; as in addition, to have perfect correlation with colposcopy (0.86 for white vs 0.53 for yellow light), white light enables to select the correct site of biopsy. Most of the rural clinics use torch or an ordinary tungsten bulb, thus missing out many significant lesions. In the light of our research findings, we strongly recommend the use of white light (having the complete spectrum of light) for screening purposes.

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References


Figure 2. Same cervical lesion in white light. A visible aceto-white epithelium of the cervix, (encircled at the 6 o’clock position) and an obvious visible warty lesion of cervix (at the 4 o’clock position).