Editorial

J Gynecol Oncol Vol. 25, No. 4:263-264
http://dx.doi.org/10.3802/jgo.2014.25.4.263
pISSN 2005-0380 · eISSN 2005-0399

Journal of Gynecologic Oncology
jgo

Magnivisualizer in the early detection of cervical neoplasia

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See accompanying article by Singh and colleagues on page 282.

In this issue of *Journal of Gynecologic Oncology*, Singh and colleagues [1] describe the performance of a simple magnifying device called 'Magnivisualizer' in the early detection of high-grade cervical neoplasia and cervical cancer in a high-risk symptomatic population in a tertiary teaching hospital in New Delhi, India. The Magnivisualizer is a portable, monocular, illuminated magnifying device (×2 to ×5) that can be used for one form of magnified visual inspection of the cervix after application of 3% to 5% acetic acid (VIAM). It has been reported to be of value in the early detection of cervical and oral precancerous lesions in previous cross-sectional studies involving 400 to 1,300 subjects conducted by the authors of the current study [2-4].

In the current study involving 659 symptomatic women, Magnivisualizer based magnified visual inspection with acetic acid (VIAM) was associated with a similar test positivity rate (25% [168/659] vs. 22% [145/659]), higher sensitivity to detect cervical intraepithelial neoplasia grade 2 (CIN 2) or worse lesions including invasive cervical cancer (88% [53/60] vs. 62% [37/60]) compared with naked visual inspection with acetic acid (VIA); if the entire study sample (n=659) is taken into account for analysis and a gold standard consisting of both colposcopy (when no colposcopic abnormalities are visualised and consequently no biopsies are directed) and biopsy (when colposcopic abnormalities are detected) as reference standard (as has been the case in most cross-sectional studies assessing any form of visual screening for cervical neoplasia), the specificities of both VIA and VIAM are similar in this study. In my view, this study again proves, as in previous studies [5-7], that the test characteristics of VIA and VIAM (irrespective of whether a simple 2× or 3× lens or Magnivisualizer is used) as primary screening tests are similar, if the definition of true positive disease includes invasive cancer in addition to CIN 2 and CIN 3 lesions.

On the other hand, if the definition of true positive lesions includes only CIN 2 and CIN 3 lesions, the sensitivity of VIAM in this study is significantly higher than that of VIA (83% [34/41] vs. 54% [22/41]). Many consider CIN 3 as the true precursor of cervical cancer. If CIN 3 alone is taken as the true positive disease, VIAM detected a higher proportion (79% [26/33]) as compared to VIA (58% [19/33]). Thus VIAM using Magnivisualizer seems to have a higher performance than naked eye VIA in detecting high-grade precursor lesions in this small cross-sectional study. Much larger cross-sectional studies involving general populations and with a design ensuring minimal verification bias are needed to investigate this aspect further.

The authors have used Coppleson's grading system for colposcopic assessment of lesions. It is not clear how this grading could be used for assessing the detection rates of grade II or worse lesions using naked eye VIA, since some level of magnification, leave alone binocular vision, is needed to assess vascular features among others. Nevertheless, in a subsample of biopsy evaluated participants, the detection rates of high-grade CIN lesions by colposcopy and VIAM are similar. This particular finding brings forth the possible role of Magnivisualizer based assessment for a single visit 'see-and-treat' approach [8-11] and for triaging women positive on human papillomavirus (HPV) testing or other screening tests in low- and middle-income countries (LMICs) [12]. Although HPV DNA testing is highly sensitive, accurate, and reproducible for detection of cervical cancer precursor lesions, it has a low specificity and there is considerable interest in evaluating innovative, simple and affordable triaging approaches for HPV positive women to reduce costs and over-treatment [13-15].

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Progress in developing feasible, alternative cervical screening methods and increasing prospects of scaling up of HPV vaccination have further improved cervical cancer prevention prospects in LMICs. HPV testing will be the screening test of choice in future and new developments in HPV testing should make it feasible and affordable in LMICs. However, we need feasible, affordable and effective triaging tools for HPV test positive women. The role of Magnivisualizer based visual screening, among the spectrum of visual screening methods, as a triaging approach following HPV testing and in the context of 'screen-and-treat' needs to be further investigated in low- and middle-income countries.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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