

A SENSITIVE SINGLE-VISIT CERVICAL SCREENING USING PAP TEST AND VISUAL INSPECTION ENABLING SAME-DAY BIOPSY IN LOW-RESOURCE COMMUNITIES

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Background: Most cervical cancer cases occur in low-resource settings. This study aimed at developing an effective, low-cost single-visit cervical screening strategy incorporating a modified Papanicolaou (Pap) test and visual inspection with acetic acid and Lugol's iodine that would allow same-day biopsy for low-income settings.

Methods: We conducted a prospective cohort trial. Two low-income Muslim Uyghur communities in China's far Western Kashi prefecture served as pilot and validation study sites, respectively, and 4,049 women (aged 30-59 years) were screened. The conventional Pap test was modified using a cotton-swab to collect cervical cells without scraping the cervix using an Ayre spatula, allowing visual inspection with 5% acetic acid (and visual inspection with 5% Lugol's iodine if visual inspection with acetic acid was negative) to be performed in a single-visit. Results from both tests were available within 1-2 hours. Women positive for either or both underwent same-day biopsy that was shipped by a courier service to a central pathology laboratory for histologic diagnosis.

Results: Single-visit screening incorporating both a modified Pap test and visual inspection achieved a sensitivity of 96.0% (95% CI, 91.6-100%) that was superior to Pap (76%, $P < 0.001$) or visual inspection with acetic acid, visual inspection with Lugol's iodine (48%, $P < 0.001$) alone in detecting CIN2+ lesions. Rapid interpretation of both diagnostic procedures facilitated efficient same-day biopsy that achieved a NPV of 98.2% in detecting CIN2+ lesions. The increased sensitivity and minimized loss of follow-up allowed this approach to identify an extremely high prevalence of CIN1 (2,741/100,000), CIN2+3 (1,457/100,000), and cervical cancer (395/100,000) among these under-screened, at-risk women.

Conclusions: Single-visit cervical screening with both a modified Pap test and visual inspection has greater sensitivity to detect high-grade CINs, reduces loss-of-follow-up, and could be an efficient low-cost strategy for low-resource settings. We propose a screen-and-diagnosis strategy for use in low-resource communities.

Biography

Wen Jie Zhang has completed his MD from Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China and PhD from University of Western Australia, Perth, Australia. He received his Postdoctoral trainings at St Jude Children's Research Hospital in Memphis, and Fred Hutchinson Cancer Research Centre in Seattle, USA. He serves as Professor of Pathology and PI at Shihezi University School of Medicine, Shihezi, Xinjiang, China. He has published more than 100 papers in reputed journals including *Journal of Experimental Medicine*, *Nature Biotechnology*, *Obstetrics and Gynaecology* among others.

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