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TOWARD A MORE PERSONALISED MEDICINE THROUGH THE ART OF CYTOPATHOLOGY

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FINAL PROGRAM

Evaluation Of Cytology Screening Strategies For Cervical Cancer In Resource Poor Setting.

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Liquid based cytology and HPV testing are expensive. Alternative strategies are needed in developing countries for cervical cancer screening program. Cytology smear misinterpretation requires integration of quality assurance methods in the program.

Three screening strategies were studied. Group 1 had selective screening by trained gynaecologists of urban hospital patients with visual inspection, conventional cytology and corresponding HC-II test for HPV (483 patients). Group 2 had conventional smear cytology in the community with HC-II test on DNA extracted from slide scrapings (270 patients). Group 3 had conventional smear cytology with cervical acid phosphatase (biomarker) staining done on extra conventional smears (81 patients). These were compared to routine hospital screening using conventional smears (1365) and liquid based cytology (Thin Prep) smears (1267).

Results: : Routine hospital based conventional screening had 77% negative, 19% unsatisfactory, 4% cytology positive (ASCUS and above) while liquid based cytology screening showed 93.12 % negative, 2.7% unsatisfactory, 4.18% positive cytology. Against this, Group 1 showed 14.1% positive cytology. Among ASC-US, ASC-H and LSIL in Group 1, HC-II selected patients with significant lesions on biopsy. False positive cytology (3 cases of ASC-H, 2 cases of H-SIL) due to repair reactions were all HC-II negative. Group 2 showed 4.4% cytology positivity. Of these 2/2 HSIL, 1/1 ASC-H, 1/2 LSIL and 0/7 ASCUS were HC-II positive. Group 3 showed 6.1% cytology positivity (5/81) with diagnosis of LSIL (1) and ASCUS (4). On reevaluation of smears with biomarker, 8/81 were considered positive (9.8%) with diagnosis of LSIL (3) and ASCUS (5).

Conclusions:

1. Liquid based cytology had much lower unsatisfactory rate than conventional cytology in routine hospital screening
2. Selective screening with visual inspection had a high pick up rate of epithelial abnormalities and is useful for better utilization of scarce resource like colposcopic biopsy and treatment rather than for general screening. False positive cytology cases (repair reactions) are common in this situation and HPV testing is useful for triage.
3. HPV testing on DNA extracted from the Pap slide is possible and useful for ASCUS L-SIL triage as well as for confirming of cytological H-SIL and ASC-H diagnosis for quality assurance. It is a useful method for reflex HPV testing in resource poor setting.
4. Cervical acid phosphatase staining is a useful biomarker which picks out L-SIL and ASCUS lesions missed on routine screening and helps in quality assurance.
5. Conventional smear screening with addition of biomarker and HPV testing by performing HC-II based on slide scrapings from cytology positive smears is a feasible method for screening large populations in resource poor setting.
6. Central review of biomarker positive slides can improve quality assurance and for large populations a telecytology approach to review of biomarkers should be evaluated.