ORIGINAL ARTICLE

CERVICAL ACID PHOSPHATASE: EVALUATION AS AN ADJUVANT TO PAPANICOLAOU SMEAR SCREENING IN CERVICAL CANCER DETECTION

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ABSTRACT: INTRODUCTION: Carcinoma of cervix accounts for 15% of all cancers diagnosed worldwide and is the second most common cancer in women. In the year 2000 there were over 4,71,000 new cases diagnosed and 2,88,000 deaths from cervical cancer.(1) Approximately 79% of these deaths occurred in developing countries.(2) Cervical cancer is preventable, but most women in poorer countries do not have access to effective screening programs. In India it is estimated that approximately 100,000 women develop cervical cancer each year.(3) Cancer cervix occupies either the top rank or second among cancers in women in developing countries, whereas, in the developed countries cancer cervix does not find a place even in top five leading cancers in women. This is due to routine screening by cervical smear. Cervical smear cytology screening by Papanicolaou (Pap) stained smears is the most efficacious and cost-effective method of cancer screening, decreasing the incidence and mortality from cervical cancer.(4) However, cervical smear screening has significant rates of false-positive and false-negative results, ranging from 10.3% for false positive cases to 5.6% for false negative cases.(5,6) To improve the detection and screening of cancerous and precancerous lesions of the cervix a number of sophisticated tests are available which are expensive and can be done only in a tertiary laboratory. To overcome this problems a cost effective cytochemical stain was introduced to measure the acid phosphatase activity in the cervical epithelium.(7) Since the description of the new Cervical Acid Phosphatase Test (CAP Test) for visualization of cervical acid phosphatase activity (CAP) inside abnormal cervical cells on smears, it has become possible to explore this enzyme as a biomarker for cervical dysplasia, and as a possible surrogate for PAP smear in detection of cervical intraepithelial neoplasia (CIN). **AIMS AND OBJECTIVES:** To assess the utility of Cervical Acid Phosphatase stain as an adjuvant to Papanicolaou smear. **BACKGROUND:** Pap test is the most used and probably the most successful and economical cancer prevention measure currently available. It is recommended for prophylaxis of women.(8) The staining procedure was introduced by George Papanicolaou in the years 1940.(9) This procedure dramatically improved detection of cervical cancer in situ and, more important, cervical dysplasia. Both conditions were followed by aggressive treatment including surgery. As a result many lives were saved.(10) Pap test screening of healthy or oligosymptomatic women resulted in sharp reduction of cervical cancer incidence and mortality rates. Reported are reductions of 80% (Iceland), 70% (U.S.), 50% (Finland) and 34% (Sweden). The major obstacle for reaching this ultimate goal of every disease prevention is the high rate of false negative readings of the Pap test, during the primary screening. False negative rates in various literatures ranging from 1.1 to 69% have been reported.(11) Sampling and technical error, are under thorough investigation, and much effort has been given to improve