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ANALYSIS OF VISUAL INSPECTION OF CERVIX WITH 5% ACETIC ACID (VIA) IN THE DIAGNOSIS OF CERVICAL CANCER

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Abstract:
Introduction: *The much higher incidence of cervical cancer in developing nations, as compared with that in developed nations, has been ascribed to the fact that it has been possible to maintain effective Pap smear screening programs in the developed world but not in the developing world.*
Aims and objectives: *The main objective of the study is to analyze the visual inspection of cervix with 5% acetic acid (VIA) in the diagnosis of cervical cancer.*
Material and methods: *This cross sectional study was conducted in Allied Hospital, Faisalabad during September 2018 to March 2019. The data was collected from 100 female participants. Participants consented to an interviewer-administered questionnaire and also provided biological specimens. The participants were screened by Pap smear and HPV DNA testing of a physician-collected cervical swab, as well as by VIA. Pap smears were collected by spatula and endocervical brush, smeared onto a glass slide, and fixed in ethanol.*
Results: *The data was collected from 100 female patients. The women ranged in age from 25 to 85 years; about 64% were <40 years old. Almost 70% of the women reported not having any formal education. A large majority (87%) was currently married. Few women (a little more than 1%) reported having had a previous Pap smear. Almost 32% of women had an abnormal result in at least one of the three screening tests, but less than 1% had an abnormal result in all three tests.*
Conclusion: *It is concluded that cervical cancer screening by visual inspection showed appropriate diagnostic accuracy when used to detect early cervical lesions.*

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INTRODUCTION:

The much higher incidence of cervical cancer in developing nations, as compared with that in developed nations, has been ascribed to the fact that it has been possible to maintain effective Pap smear screening programs in the developed world but not in the developing world. An effective Pap smear screening program requires many consecutive steps, including (*a*) the collection in the clinic of cells from the transformation zone of the cervix and the endocervix, (*b*) smearing the cells on a slide and fixing them [1], (*c*) staining and reading the slide by a cytopathologist, (*d*) transmitting the cytology results to the health care provider, (*e*) communicating the cytology results to the woman and arranging for a second visit if the smear is abnormal, and (*f*) a second visit by the woman for additional tests (e.g., colposcopy and cervical biopsy) or for treatment [2].

Since 2005 the World Health Organization (WHO) recommended visual inspection of cervix with acetic acid (VIA) or Lugol's iodine (VILI) as alternative screening techniques for the detection of cervical precancerous lesions. Many field evaluation surveys reported that visual inspection demonstrated diagnostic accuracy close to cytology and was more affordable and easy to perform for nonmedical health workers in developing countries [3]. Côte d'Ivoire is now planning to implement a national cervical cancer screening program and the screening technic as well as the entry point to screen a maximum of women that are questions of interest [4].

Visual inspection of the cervix after acetic acid application (VIA) has long been regarded as the most promising method for screening in resource-limited settings [5]. VIA is performed by a trained health care provider who applies a 3% to 5% acetic acid solution to the cervix and then observes the transformation zone of the cervix for 1 to 2 minutes for aceto white epithelium, which is thought to be indicative of abnormal cellular changes [6].

Aims and objectives:

The main objective of the study is to analyze the visual inspection of cervix with 5% acetic acid (VIA) in the diagnosis of cervical cancer.

MATERIAL AND METHODS:

This cross sectional study was conducted in Allied Hospital, Faisalabad during September 2018 to March 2019. The data was collected from 100 female participants. Participants consented to an interviewer-administered questionnaire and also provided biological specimens. The participants were screened by Pap smear and HPV DNA testing of a physician-collected cervical swab, as well as by VIA. Pap smears were collected by spatula and endocervical brush, smeared onto a glass slide, and fixed in ethanol. A standardized data collection form was used to document results of the cervical cytology, including the final cytologic diagnosis based on the Bethesda System. A separate standardized data collection form was used by the gynecologist who performed the screening to document any visible abnormalities of the external genitalia, vagina, and cervix.

Statistical analysis:

The data was collected and analyzed using SPSS version 20.0. All the values were express in median and standard deviation.

RESULTS:

The data was collected from 100 female patients. The women ranged in age from 25 to 85 years; about 64% were <40 years old. Almost 70% of the women reported not having any formal education. A large majority (87%) was currently married. Few women (a little more than 1%) reported having had a previous Pap smear. Almost 32% of women had an abnormal result in at least one of the three screening tests, but less than 1% had an abnormal result in all three tests.

Table 01: Analysis of screening test results and disease status [*n* (%)]

AVIA+ 297 (12.7)				VIA− 2,043 (87.3)			
PAP+ 61 (2.6)		PAP− 236 (10.1)		PAP+ 283 (12.1)		PAP− 1,751 (75.1)	
HPV+ 16 (0.7)	HPV− 45 (1.9)	HPV+ 23 (1.0)	HPV− 213 (9.1)	HPV+ 48 (2.1)	HPV− 235 (10.1)	HPV+ 153 (6.6)	HPV− 1,598 (68.6)
No. of CIN2+ detected in each diagnostic test category among women receiving colposcopic examination: *n/N* (%)							
↓	↓	↓	↓	↓	↓	↓	↓
4/11 (36.4)	0	1/16 (6.3)	0	6/29 (20.7)	2/131 (1.5)	5/106 (4.7)	1/304 (0.3)

DISCUSSION:

Cancer cervix is a possible avoidable cancer. Premalignant lesions take 5-15 years to progress to invasive cancer. So, if perceived and managed appropriately, it has nearly 100 per cent cure rate. Programmed Pap smears as screening test for cancer cervix has long been established in the developed countries but in developing one, it seems not easy to do that due to restricted transportation, trained persons and resources [7]. So, alternative strategies for early detection of cervical cancer. Such as VIA, VILI, HPV testing, cervicography and possibly, screening colposcopy were thought to carry on [8]. The simplicity and low-cost of visual inspection of cervix with acetic acid and Lugol's iodine (VIA and VILI) make them suitable and promising approaches to become universal screening for cancer cervix in low-resource settings. They do not require a complicated laboratory communications like cervical cytology and the immediate accessibility of test's result allows diagnostic investigations similar to colposcopy and biopsy to be carried out in the same visit. This allows treatment to be planned and employed without extra recalls [9].

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CONCLUSION:

It is concluded that cervical cancer screening by visual inspection showed appropriate diagnostic accuracy when used to detect early cervical lesions. It is a simple and easy to perform method that could be introduced progressively in the health insurance policy while waiting for a national screening program.

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