



SCREENING FOR CARCINOMA CERVIX WITH SIMULTANEOUS USE OF PAP SMEAR, COLPOSCOPY AND COLPOSCOPY GUIDED CERVICAL BIOPSY-A PROSPECTIVE STUDY

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ABSTRACT **OBJECTIVE:** To evaluate the role of Pap smear, colposcopy and colposcopy guided cervical biopsy in screening for cancer of uterine cervix. **METHOD** Hundred patients undergoing routine cervical cytological screening at VIMSAR, Burla in department of OBG outpatient clinic were randomly selected. All patients were evaluated by Pap smear, colposcopy and cervical punch biopsy. Pap smears and biopsies specimens were interpreted independently. **CONCLUSION:** Colposcopy followed by colposcopic guided cervical biopsy is a much sensitive method compared to cytology, especially in the high grade lesions of cervix and plays an important role in the down staging of cervical cancer.

KEYWORDS : Pap smear, Colposcopy, Colposcopy Guided Cervical Biopsy, Carcinoma cervix.

INTRODUCTION: In worldwide scenario, carcinoma cervix is second most common cancer in women, accounting for 68.5% of all gynaecological malignancies. It is most common cancer in women in developing countries accounting for 80% of cases. India accounts for 18% of them. Cervical cancer is 100% preventable and also largely [1,5] treatable, if detected in early stage.

Carcinoma cervix is the third most common cancer in women worldwide and most common female genital cancer in many developing countries like India. Every year in India, 1,22,844 women are diagnosed with cervical cancer and 67,477 die from the disease. India has a population of 432.2 million women aged 15 years and older who are at risk of developing cancer. It is the second most common cancer in women aged 15–44 years. India also has the highest age standardized incidence of cervical cancer in South Asia at 22, compared to 19.2 in Bangladesh, 13 in Sri Lanka, and 2.8 in Iran. (ICO 2014) It is predicted that figures are expected to double by 2020 if no action is taken. (Duraiswamy et al 2011)

The histogenesis and progression of cervical carcinoma is well documented. Hence it is possible to prevent the development of invasive carcinoma by identifying and treating pre invasive lesions. Routine Papanicolaou smears are well accepted practice in detection of abnormal cervical cytology. Unfortunately the sensitivity of cytology can be as low as 50% potentially missing cervical intraepithelial neoplasia or cancer cervix up to 35% of the time. The sensitivity of colposcopy is 87-99% and specificity is 23-87%. Hence colposcopy and colposcopic guided cervical biopsy is used to evaluate the cervix for more potentially advanced premalignant disease that is either missed or detected as low grade on [6,9] Pap smear alone.

MATERIALS AND METHODS: A prospective (Observational) study analysing 100 cases of Pap smear, colposcopy and colposcopic guided biopsy in the Outpatients clinic of the Department of Obstetrics and Gynaecology, VIMSAR, Burla. Period of study November 2015 to October 2017

INCLUSION CRITERIA: Women attending outpatient department (age group 21-65 yrs) with suspicious symptoms like persistent leucorrhoea, Postcoital, intermenstrual bleeding and postmenopausal bleeding, suspicious cervix such as hypertrophied or unhealthy cervix and cervix with erosion which bleeds on touch.

EXCLUSION CRITERIA: Women who already had hysterectomy, treatment for cervical precancer or cancer in the past, active genital infection (RTI, STD), Pregnant women, active per vaginal bleeding, unmarried, clinically visible growth on cervix.

Patient was put in dorsal position; vagina retracted using Cusco's

speculum, sample of exfoliated vaginal epithelium taken using Ayre's spatula and cytobrush. Acetic acid (5%) and Lugol's iodine applied to the cervix and colposcopic evaluation done using 40X magnification. Colposcopy guided cervical biopsy taken from suspected site in the transformation zone. Colposcopic grading done according to the Burke and co-workers recommendations.

RESULTS:

The mean age of the women in the study is 43 yrs. 10 had attained menopause. Mean age of marriage was 28.5 yrs. 47% of the samples were illiterate, 37% had 12th education, 16% were Graduate. In the study 61% belonged to lower socioeconomic class. 57% were multiparous with 3 or more children. Subjects mostly presented with white discharge per vagina i.e. 79% and second most common was bleeding per vagina (21%). On examination 44% had erosion in cervix, congestion 14%, Hypertrophy with erosion 16%, hypertrophy with congestion 11%, Cervical polyp 5% & 33% had normal findings on per vaginal examination.

Pap smear showed malignancy in 5 members. 2 biopsy proven malignancy, 1 cervicitis, CIN I and CIN III each.

Colposcopy showed grade III changes in the 3 subjects who have histologically proven malignancy.

In this study sensitivity, specificity, positive predictive value, negative predictive value, accuracy of Pap smear are 43.2%, 95.2%, 84.2%, 74.1% & 76% & colposcopy are 70.3%, 95.2%, 89.6%, 84.5% & 86%

Table 1: Distribution of case

Pap smear	Colposcopy	Colposcopic guided Biopsy			
Normal	04	Normal	03		
Inflammatory	72	Grade I	54	Cervicitis	60
	09	Grade II	12	CIN-I	19
	03	Grade III	17	CIN-II	05
	07	Unsatisfactory	07	CIN-III	10
Malignancy	05			Malignancy	03

Table 2: Correlation between Pap smear and histopathological findings:

Pap smear	Histopathological findings						Total
	Normal	Cervistis	CIN-I	CIN-II	CIN-III	Malignancy	
Normal	0	4	0	0	0	0	04
Inflamm atory	3	49	15	2	3	0	72
CIN-I	0	3	1	3	2	0	09
CIN-II	0	2	0	0	0	1	03

CIN-III	0	1	2	0	4	0	07
Malignancy	0	1	1	0	1	2	05
Total	3	60	19	05	10	3	100

Table 3: Correlation between colposcopy and histopathological findings:

Colposcopy	Histopathological findings						Total
	Normal	Cervicitis	CIN-I	CIN-II	CIN-III	Malignancy	
Normal	3	6	1	0	0	0	10
Grade I	0	41	10	1	2	0	54
Grade II	0	5	2	1	4	0	12
Grade III	0	6	2	3	4	2	17
Unsatisfactory	0	2	4	0	0	1	07
Total	3	60	19	5	10	3	100

DISCUSSION:

Routine Papanicolaou smears are well accepted practice in detection of abnormal cervical cytology. Unfortunately the sensitivity of cytology can be as low as 50% potentially missing cervical intraepithelial neoplasia or cancer cervix up to 35% of the time. Hence colposcopy and colposcopy guided biopsy should be done to improve the accuracy of diagnosis. The sensitivity of [9,10] colposcopy is 87-99% and specificity is 23-87%. Various characteristics and predisposing factors for carcinoma cervix have also been analysed. Accuracy of different screening methods for Carcinoma cervix and their comparison has been done. This will help in diagnosing missed cases if only one test was used. Mean age in the present study was 43yrs. An increased incidence of sexually transmitted infections in patients 30yrs have persistent inflammatory lesions of cervix. Majority were illiterate or had only primary education. We observed an inverse relationship between the distribution of cervical cancer and the educational status of women. 61% belonged to low socioeconomic status. Many Indian studies have reported that women from lower socioeconomic [12] strata had higher incidence of cervical cancer. Subjects mostly presented with white discharge per vagina i.e. 79% and second most common symptom was bleeding per vagina (21%). [8] In this study positive correlation was seen between substance abuse and [11] occurrence of pre-invasive or invasive lesions of cervix. In the present study, mean age of marriage was 28.5 years. In the study population 57% of the women were multiparous (Parity>2). In the present study women who were diagnosed to have invasive lesions of the cervix were multiparous and had early sexual exposure. A positive correlation of carcinoma cervix and early sexual exposure and with multiparity was found in our study. No preinvasive or invasive lesions were seen in patients who used barrier method. This study concluded that barrier method protects against sexually transmitted diseases and hence no HPV infection. On per speculum examination abnormality was detected in 77% of subjects. The most common finding on per speculum examination was erosion, which was present in 44% subjects. In the Pap smear study 72% were reported as inflammatory and 5% as malignant. This is comparable to the study done by Robyr et al, which showed that 50% of the cases had [13] inflammation on cytological examination. Colposcopy showed 54% as Grade II lesion and Grade III changes which are equivalent to CINIII and malignancy are seen in 14% of cases. In biopsy 3% were reported as normal, majority were reported as cervicitis (60%), malignancy was reported in 3% of the study population. In study population, 2 subjects who were reported as having malignancy in Pap smear, actually had cervicitis and CIN I and colposcopy had showed grade I changes in them. This indicates that colposcopy much accurately helps in diagnosing mild degrees of lesions of uterine cervix. In present study about 4% of the patients with normal smear had cervicitis at biopsy. Walker et al reported CINII and CIN III at histology in one third of their patients with [15] mildly atypical cervical cytology. These data suggest that a mildly abnormal smear identifies a group of patients at increased risk of CIN but gives little or no information on the disease severity. The latter information, which is essential for proper management of the patients, is obtained by colposcopically directed biopsy.

Matsuura et al showed that accuracy rates of cytology, colposcopy and punch biopsy were 52%, 66% and 66% respectively. Hence he suggested that a composite diagnosis with cytology, colposcopy and punch biopsy is necessary for a correct evaluation [7] of women.

Usha Saraiya et al stated that, cytology and colposcopy are

complementary to each other and should be used simultaneously^[14] as both methods mutually and continually control each other.

Anderson (1990) has stated that the incidence of invasive cancer cervix is gradually decreasing. Early detection in its preclinical stage ensures possibly 100% survival rate. (Te Lind, 1952)12(Kottmayer, 1953)4 Down staging of cervical cancer is the detection of the disease at an earlier stage when it is still curable. Detection is done by nurses and other paramedical health workers using a simple speculum for visual inspection of cervix. In places where prevalence of cancer is high and cytological screening is not available, down-staging screening is useful. It can certainly minimize the cancer death through early detection.¹⁶

Today colposcopy stands between cytology and histology i.e. between population screening and definite tissue diagnosis. The great value of colposcopy lies in its ability to pin point the most suspicious area on the cervix for target biopsy without which a random biopsy may well miss the very spot (Coppleson, 1977)¹⁷

CONCLUSION:

Comparison of Pap smear and colposcopy in a hospital based screening for premalignant lesions of cervix revealed that Pap smear had a less sensitivity when compared to colposcopy. Colposcopy on the other hand errs on the side of over diagnosis and had a higher sensitivity. Hence, both tests can be used to complement each other in a hospital based screening programme, where facilities for both modalities are available. Colposcopies being better than Pap smear in detecting higher order abnormalities of uterine cervix. Hence colposcopy should be encouraged along with routine cytology screening. Abnormal cytology as well as inflammatory smears needs further evaluation by colposcopy. Attention to follow-up is mandatory to overcome the limitations of these screening methods.

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