

Screening for Different Cervical Lesions in Rural Women by Pap Smear in a Tertiary Hospital of Rajasthan

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ABSTRACT

Introduction: Cancer of uterine cervix is the second most common cancer among women worldwide. In 2007, the estimated number of new cases of cancer cervix according to national cancer registry of India was 90,708 with five-year survival rate of about 48%. It is estimated that in India 1,26,000 new cases occur each year.

Material and methods: This was a prospective study conducted on 947 pap smears collected in one year in our institute. Smears were collected from patients who presented with complaints of bleeding or discharge per vagina, pain abdomen and dyspareunia. Wherever possible a histopathological correlation was also done with the papanicolaou findings.

Results: Among the 947 smears analysed 93 smears were unsatisfactory (9.8%) and 854 (90.17%) were satisfactory. Among the 854 satisfactory smears 91 (9.6%) were normal, Inflammatory smears were 578 (61.03%), other non-neoplastic findings were seen in 113 smears (11.9%) and Epithelial cell abnormality in 72 smears (7.6%).

Conclusion: Due to high sensitivity, specificity and accuracy found in this study Pap test is proved to be highly useful to detect precancerous and cancerous lesions of cervix.

Keywords: Cervix Cancer, Papanicolaou smear, Non-neoplastic lesion of cervix, Epithelial cell abnormality in cervix.

INTRODUCTION

Cancer of uterine cervix is the second most common cancer among women worldwide. Most frequent cancer in women in India.¹ It is also the most common cancer in women in many parts of the world including South-Central Asia.² Cancer of the cervix has been the most important cancer in women in India; constituting 11-30% of all cancers in women.³ About 86% of the cases occur in developing countries, representing 13% of female cancers. India has a population of approximately 365.71 million women above 15 years of age, who are at risk of developing cervical cancer. The current estimates indicate approximately 132,000 new cases diagnosed and 74,000 deaths annually in India, accounting to nearly 1/3 of the global cervical cancer deaths. About 88% deaths from cervical cancer occur in developing countries.⁴ In different regions of India highest risks among women were observed for breast cancer followed by cervical cancer and gall bladder cancer with a cumulative risk of one in 35, one in 61 and one in 123 likely develop the cancer of the respective site in their life time.⁵ In 2007, the estimated number of new cases of cancer cervix according to national cancer registry of India was 90,708 with five-year survival rate of about 48%.⁶ It is estimated that in India 1,26,000 new cases occur each year.⁷ WHO recommended that in low resource settings, the aim should be to screen every woman once in her life time at 40 years. Recently used, The Bethesda system

(TBS) is a system for reporting cervical or vaginal cytologic diagnosis, used for reporting Pap smear results to introduce a standardized approach for reporting.

MATERIAL AND METHODS

This was a hospital based screening procedure carried out to find out the various cytological types of non-neoplastic and neoplastic lesions of the cervix. This was a prospective study conducted on 947 pap smears collected from 1st January 2012 till 31st March 2013. Smears were collected from patients who presented with complaints of bleeding or discharge per vagina, pain abdomen and dyspareunia. After taking a history and recording the per vagina examination findings, the Pap smear was collected with wooden Ayer spatula. The smear was immediately fixed in alcohol for 30 minutes and then Pap staining was done and the findings were reported using The Bethesda system (2001). Wherever possible a histopathological correlation was also done with the papanicolaou findings.

RESULTS

Among the 947 smears analysed 93 smears were unsatisfactory (9.8%) and 854 (90.17%) were satisfactory. Among the 854 satisfactory smears 91 (9.6%) were normal, Inflammatory smears were 578 (61.03%), other non-neoplastic findings were seen in 113 smears (11.9%) and Epithelial cell abnormality in 72 smears (7.6%) (Figure -1). Among the unsatisfactory smears most common cause was found to be low cellularity in 59 smears (6.23%).

Negative for intraepithelial lesion were divided into inflammatory smears and other non neoplastic findings. The Inflammatory smears were further subdivided into non specific inflammation as elaborated in Table no 1 and Figure 1. Out of total 113 other non-neoplastic smears were subcategorized as shown in table no. 2, Figure 2.

Maximum number of cases were in the age group 36-50 years and least in females of more than 50 years. In our study maximum number of premalignant and malignant cases were found in females of 50 years and above i.e. 12.6% (11/87) then 9% (30/333) in 36-50 years and least 5.8% (31/527) in 20-35 years. Most common symptom was pain in abdomen 384 (40.5%) then discharge per vagina 227 (23.9%) and

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How to cite this article: Pragya Gupta, Sumit Gupta, Veena Saxena, Krishna Dubey. Screening for different cervical lesions in rural women by pap smear in a tertiary hospital of Rajasthan. International Journal of Contemporary Medical Research 2016;3(3):840-842.

Types of Inflammatory smears	Number of cases	Percentage of inflammatory cases (578)	Overall percentage (947 SMEARS)
Non – specific inflammation	512	88.5%	54.06%
Atrophic cervicitis	37	6.4%	3.9%
Specific inflammation:	29	5.1%	3.06%
Shift in vaginal flora suggestive of Bacterial vaginosis	21	3.63%	2.21%
Candida species	7	1.21%	0.7%
Candida and SIVF	1	0.17%	0.10%
Total	578	100%	61.03%

Table-1: Categorization of inflammatory smears

Other non neoplastic findings	Number of cases	Percentage (113 smears)	Overall percentage
Reperative smears	76	67.2%	8.02%
Squamous cell origin	48	42.4%	5.06%
Squamous metaplastic origin	5	4.42%	0.52%
Endocervical origin	23	20.3%	2.4%
Atrophic smears	13	11.5%	1.3%
Hyperkeratosis	24	21.2%	2.5%

Table-2: Other non- neoplastic findings on pap smear

Type of lesion	Cases	Percentage	Type of lesion	Cases	Percentage
Squamous cell lesion	53	100%	Glandular cell lesions	19	100%
ASCUS	6	11.3%	AGC	8	42.1%
LSIL	32	60.4%	AGC favor neoplasia	11	57.9%
HSIL	13	24.5%			
SCC	2	3.8%			

Table-3: Epithelial cell abnormality on pap smear

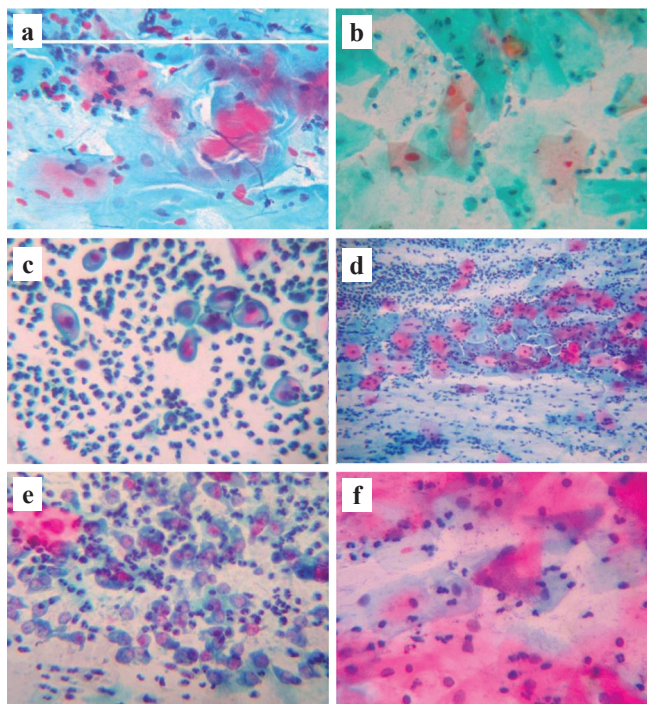


Figure-1: (From left to right) a. Hyperkeratosis: Showing A Keratin Pearl (40x), b.Candida Species (40x), c. Atrophic Cervicitis: Showing Parabasal Cells And Inflammatory Cells (40x), d. Non Specific Inflammatory Smear, e. Reperative Smear: Inflammatory Smear Showing Reactive Changes (40x), f. Bacterial Vaginosis

bleeding ver vagina in 192 (20.2%). Most common symptom in patients of dysplasia were discharge and bleeding per vagina. On per vagina examination, out of total 947 cases,

215 (22.3%) had cervical erosion, 66 (6.7%) had uterine prolapse, 69 (7.1%) had cervix hypertrophy and 41 patients had other findings like growth on cervix, bulky uterus.

Out of 947, 127 cases had histopathological correlation in which 31 cases were of epithelial cell abnormality, 94 were cases negative for intraepithelial cell lesion, 2 were unsatisfactory. Based on this correlation, the sensitivity, specificity and accuracy of Pap smear was found to be 81.4%, 91% and 88.97% respectively.

DISCUSSION

Pap smear is used worldwide to detect precancerous and cancerous lesions of cervix.

In our study, 9.8% (93) were found unsatisfactory for evaluation which was found to be slightly higher than that found by Manjit Singh Bal (2012)⁸ and Gupta et al (2013)⁹ i.e. 4.1% and 4.9%.

The category Negative for intraepithelial lesion included 72.9% smears including both inflammatory and other non – neoplastic findings which was slightly lower than 91.81% smears seen in this category in study by Urmila Banik et al (2011).¹⁰ Epithelial cell abnormality had 53 squamous cell lesions and 19 glandular cell lesions. ASCUS was found in less than 1 % (0.6%) as in study of Urmila Banik et al (2011)¹⁰ and Manjit Singh Bal et al (2012)⁸ i.e. 0.18% and 0.3% respectively.

LSIL was most common epithelial cell abnormality found in 3.3% (32 /947) which was quite similar to 4.6% LSIL found by Mulazim Hussain Bukhari et al (2012).⁶ HSIL was present in 1.3% (13/947) which was far less than 9.04% found in study of Subhalakshmi Mukhopadhyay et al (2013).¹² 13.7%

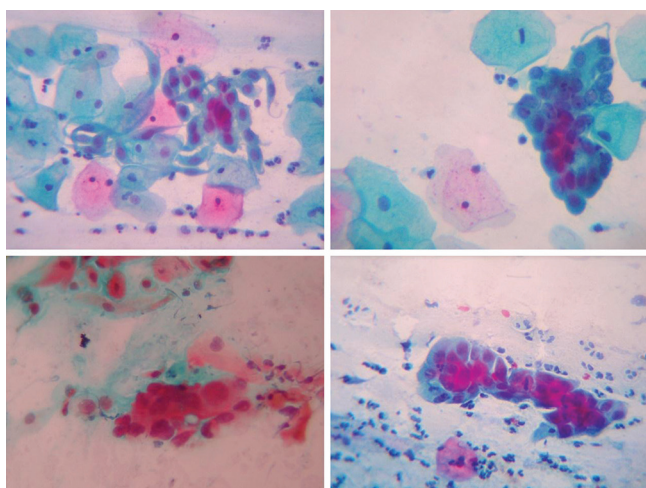


Figure-2: (from left to right) a. Tadpole Cells (40x), b. Low Grade Squamous Cell Lesion (40x), c. High Grade Squamous Cell Lesion (40 X), d. Squamous Cell Carcinoma (40x) With Background Tumor Diathesis

(14/947) and AGC in 0.8% (8/947) cases which was higher than 3.9% found in study of Mulazim Hussain Bukhari et al (2012).¹¹ Mean age in our study was found to be 36.9+ 10.2, mean age of patients with LSIL and HSIL was 40.42 + 10.6 and 41.46 + 18.2 respectively. In the study by Bal MS et al (2012)¹³ mean age of the patients with diagnosis of LSIL was 32.3 years and HSIL was 40.5 years.

In a study conducted by Ruby Bhatia et al¹⁴ 268 patients (26.8%) had discharge per vagina, 82 (8.2%) had pain abdomen, 8 (0.8%) had post menopausal bleeding, 29 (2.9%) had post coital bleeding and 41 (4.1%) had irregular bleeding. In our study 384 (40.5%) patients had pain abdomen, 227 (23.9%) had discharge per vagina, bleeding in 192 (20.2%) and 91 (9.6%) had other complaints like dyspareunia, itching vagina.

A study by Mulazim Hussain Bukhari et al (2012)¹¹ abnormal vaginal discharge and postmenopausal bleeding was the commonest presentation (91.2% and 60.7%) respectively. In the present study main complaint was discharge per vagina then bleeding per vagina in patients with premalignant and malignant lesions.

The present study is compared with the study by Chhabra et al (2003)¹⁵ in which sensitivity, specificity, predictive value of negative test, percentage of false negative, percentage of false positive and accuracy were 81 %, 95%, 92.8%, 86.6%, 18.7%, 4.8% and 88% respectively which is quite similar to our study 81.4 %, 91%, 70.96%, 94.79%, 18.51%, 9% and 88.97% respectively.

CONCLUSION

Cervical cancer was found to be quite common in our set up. The main purpose of Pap smear cytology screening was the detection of precancerous and cancerous lesions of cervix; thereby reducing the mortality. Due to high sensitivity, specificity and accuracy found in this study Pap test is proved to be highly useful to detect precancerous and cancerous lesions of cervix.

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 28-01-2016; **Published online:** 19-02-2016