

Original Article**CERVICAL PAP SMEAR STUDY AND ITS UTILITY IN CANCER SCREENING, TO SPECIFY THE STRATEGY FOR CERVICAL CANCER CONTROL****Mandakini M Patel¹, Amrish N Pandya¹, Jigna Modi²**¹Associate Professor, ²Assistant professor, Department of Pathology, Government Medical College, Surat, 395001, Gujarat, India**Correspondence:**

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ABSTRACT

The study was conducted to explore various lesions of Uterine cervix [inflammatory and growth], to find out target age group in which screening efforts can be concentrated for early detection as well as reduction of the incidence of cervical cancer, in our set up. Patients in the age group 15-50 and 50-78 years with various complaints were screened during June 2006 to December 2007. Total 995 patients were studied. Slides were fixed in 95% ethyl alcohol and stained with Pap stain. Slides were reported according to The 2001 Bethesda System, by cytopathologists. Out of 995 patients studied, 940 showed inflammation and other benign lesions. 55 patients showed premalignant and malignant lesions. Premalignant lesions were present in 30-50 year of age group.

Keywords: Cervical cancer, Screening, Bathesda system, Pap smear, strategy**INTRODUCTION**

Cancer of uterine cervix is a leading cause of mortality and morbidity among women worldwide. In developing countries it is the most common gynecological cancer and one of the leading causes of cancer death among women.

Nearly 4 lacs new cases of cervical cancers are diagnosed annually worldwide and 80% of them are diagnosed in the developing countries. There are 1.7 million cases in the developing world and as many as 5-13 millions women have precancerous lesions^{1,3}

According to National Cancer Registry Program of India, cancers of uterine cervix and breast are leading malignancies seen in Indian women².

Cervical cancers can be prevented through early detection using several screening techniques. Cervical smear is a sensitive test for early screening of the cervical lesion and most widely used system for describing PAP smear result is TBS [2001, The Bethesda System].⁴

MATERIAL AND METHOD

The retrospective study was carried out at Government Medical College and New Civil hospital, Surat during June 2006 to December 2007, total 995 patients were screened.

The patients were in the age range of 15-50 and 50-78 years, having complaints like vaginal discharge, bleeding per vagina or something coming out per vagina. History and symptoms along with parity were recorded.

Smears were taken by trained technician using modified Ayres wooden spatula which was inserted and rotated 360° over cervix. Both ectocervix and endocervix were sampled. Slides were prepared, labeled, fixed in 95% ethyl alcohol immediately and subsequently stained by Pap stain. After staining, slides were mounted with DPX (distrene dibutyl phthalate xylene), screened and reported by two cytopathologists according to The 2001 Bethesda system.

RESULTS

Amongst the 995 cervico-vaginal smears studied during June 2006 to December 2007 on patients, ranging from 20 to 50 years and above age, 572 (57.4%) showed inflammatory lesion, 22(2.2%) showed atrophy, 41 (4.1%) showed ASCUS, 1(0.1%) showed HSIL, 7(0.7%) showed SCC, 28 (2.8%) showed metaplasia, 4(0.4%) had

Radiation changes, 119(11.9%) were inadequate and 195(19.5%) didn't show any remarkable pathology.

ASCUS has 4.1 % while AGUS has 0.5% incidence. Ratio of inflammation and other lesions to premalignant and malignant ones was 940: 55 [94.5% and 5.5%].

Table 1: Relation of age with various nonneoplastic and neoplastic pathology of cervix

Age group (years)	15-30	31-40	41-50	50-78	Total (%)
NRP	83	68	33	11	195 (19.6)
Inadequate	60	40	13	6	119 (11.99)
Inflammatory	244	248	52	28	572 (57.48)
Atrophy	0	4	8	10	22 (2.2)
Metaplasia	13	7	4	4	28 (2.81)
Radiation changes	0	0	3	1	4 (0.4)
ASCUS	7	8	16	10	41 (4.12)
AGUS	0	4	1	0	5 (0.5)
LSIL	0	0	1	0	1 (0.1)
HSIL	0	1	0	0	1(0.1)
SCC	0	3	1	3	7 (0.7)
Total	407	383	132	73	995

DISCUSSION

With the changes in the life styles and demographic profiles in developing countries, non-communicable diseases are emerging as an important health problem which demand appropriate control program before they assume epidemic propagation. Cancer has been a major cause of morbidity and mortality.

According to National Cancer Registry Program of India, cancers of uterine cervix and breast are the leading malignancies seen in females of India. There should be an effective mass screening program aimed at specific age group for detecting precancerous condition before they progress to invasive cancers.^{1, 3, 5}

Our study showed that there were 94.5% benign and inflammatory and 5.5% were premalignant and malignant lesion, out of which premalignant lesions 83.6% that were ASCUS and AGUS. ASCUS progresses to LSIL, HSIL AND SCC. AGUS progresses to adenocarcinoma.^{1, 6, 7}

ASCUS was found to be highest in age group 31-50 years in the other study. ASCUS is to be labeled as ASCUS-reactive and ASCUS-SIL which on biopsy turned out to be 83.6% positive for LSIL or HSIL.^{4, 6, 8} As percentage of ASCUS reported in other studies correlated with our

findings,^{1, 6, 9} we should advocates PAP smear study and follow up at 31 years and above.

There are various screening test for cervical cancer like Pap smear, liquid Pap cytology, automated cervical screening techniques, visual inspection of cervix after Lugol's Iodine and acetic acid application, speculscopy, cervicography.

Out of all these, exfoliative cytology has been regarded as the gold standard for cervical screening programs.¹⁰ the role of HPV in development of cervical cancer is proved beyond doubt. If Pap screening is associated with HPV-DNA testing than we can increase the sensitivity. World Health Organization (1992) recommended screening every woman once in her lifetime at 40 years,⁹ our results do not agree with it as the incidence of ASCUS is also high during 31-40 years. So if you catch them early at 30 years of age then you can prevent further development of cancer. The American Cancer Society recommends that all women should begin cervical cancer screening after 3 years of beginning coitus. It is also recommended every 1-2 years, women who have crossed the age of 30 years and have had 3 consecutive normal Pap results may be screened after 2-3 years.

CONCLUSION

Pap smear examination is widely accepted screening method. In countries like India with predominant rural population is having low socio-economic status, marriage at an early age and poor medical facility. It is a major challenge to formulate a screening program that is easily available, within existing resources, to a large section of society. It is also important to set clear and realistic long term goals.

We can develop a cost effective screening method by training medical and paramedical staff at primary health centre level. PAP smear examination should begin at 30 years. It should be subsequently followed with HPV-DNA testing at higher centres.

Abbreviations used:

ASCUS: Atypical cells of undetermined significance
 AGUS: Atypical glandular cells of undetermined significance
 TBS: The Bethesda System Papanicolaou
 HSIL: High grade squamous intra epithelial lesion
 SCC: Squamous cell carcinoma
 LSIL: Low grade squamous intra epithelial lesion

HPV-DNA: Human papilloma virus-deoxyribonucleic acid
 NRP: No Remarkable Pathology

REFERENCES

1. Rejendra A Kalkar, Yogesh Kulkarni. Screening for cervical cancer: an overview. *Obstet Gynecol India* vol. 56 no. 2: March / April 2006.
2. National Cancer Registry Program. Annual Report. IC New Delhi; 1990-1996.
3. Mohammed Shaoaib Khan, Fohadiya Yasin Raja at el. Pap smear Screening for Precancerous conditions of the cervical cancers. *Pak J. Med. Res.*; vol. 44 no. 3, 2005:111-3.
4. The 2001 Bethesda System; Terminology for reporting results of cervical cytology. *JMA* 287, 2114, 2002.
5. Bishop A. Shessis TS. Cervical dysplasia treatment: Key issues for developing countries. *Bull Pan Am Health Organ* 1996; 30:378-86.
6. Amne E. Radar, Peter G. Rose at el. Atypical Squamous cells of undetermined significance in women over 55. *Actacytologica*; vol. 43, no. 3: 1999: 357-61.
7. Izabela T. Burja, Sophie K. Thompson. Atypical glandular cells of undetermined significance on cervical smears. *Acta cytologica*; vol.43, no. 3: 1999: 357-56.
8. Shazli N. Malik, Edward J. Wilkinson at el. Do Qualifiers of ASCUS distinguish between low and high risk patients? *Acta cytologica*; vol.43, no. 3: 1999: 376-80.
9. A Juneja, A Sehgal, S Sharma at el. cervical cancer screening in India: Strategies revisited; *Ind* vol. 61, no *Indian J Med Sci*, 2007: 34-47.
10. Cheryl L R, Clair W M, Kevin R et al. prevention of cervical cancer. *Critical review in Oncology / Hematology*; 2000: 33: 169-185.