

Original Research Article

<http://dx.doi.org/10.20546/ijcmas.2017.601.039>

## Utility of Pap Smear in Cervical Screening in a Tertiary Care Hospital

K. Vijaya<sup>1</sup> and R. Shyamala<sup>2\*</sup>

<sup>1</sup>Department of Pathology, Mallareddy Medical College for Women,  
Hyderabad, Telangana, India

<sup>2</sup>Department of Microbiology, Mallareddy Medical College for Women,  
Hyderabad, Telangana, India

\*Corresponding author

### ABSTRACT

#### Keywords

Cervical Cancer,  
Papsmear, Bethesda  
System.

#### Article Info

Accepted:  
18 December 2016  
Available Online:  
10 January 2017

This study was conducted to analyse the incidence of various lesions of uterine cervix, inflammatory as well as malignant and to find the age group of patients who can benefit from this screening. Smears were collected from 325 patients in the age group 20 to 70 years, between July 2014 to December 2016. These patients complained of white discharge, pain abdomen, post menopausal bleeding and mass per vagina. The slides were fixed in 95% ethyl alcohol, and stained with PAP stain. The slides were screened according to 2001 Bethesda System by two cytopathologists. Out of 325 smears studied 220 showed inflammatory pathology, 54 were premalignant and 7 were diagnosed as malignant.

### Introduction

Cancer of uterine cervix is the most common cause of mortality and morbidity among women both in developed and developing countries next to cancer breast (Parkin *et al.*, 2001). But in Indian women it is the commonest malignancy followed by to cancer breast (Gustafsson, 1997).

It constitutes about 8% of all cancers in developing countries. Every year about 5 lakhs new cases are diagnosed globally, leading to death in more than 50% of these case. One fourth of these cases occur in India. Early detection of these cases using pap smear screening is required to reduce the mortality rate (Mulligan, 1998).

Pap smear is a simple, safe, reliable and non invasive method for detecting cancerous, precancerous and non neoplastic changes in the cervix. The Bethesda system is the most widely used system for describing pap smear result (TBS-2001) (Thomas, 2002).

### Materials and Methods

This retrospective study was done at Malla reddy Medical college for women, Hyderabad. Pap smears from 325 patients who presented to the pathology department between July 2014 to December 2016 were analysed. The age of these patients ranged from 20 to 70 years. These patients presented

with complaints of white discharge, excessive bleeding per vagina, post menopausal bleeding and mass per vagina. The smears were taken by a gynaecologist using Ayres wooden spatula under aseptic precautions. The material was smeared on a labeled glass slide, fixed in 95% ethyl alcohol and stained by pap stain. After staining they were mounted with DPX, screened and reported by two cytopathologists according to the Bethesda system, 2001.

This study was done to know the prevalence of various premalignant, malignant and non neoplastic lesions of cervix using pap smear.

**Results and Discussion**

A total of 325 cervical smears during the period July 2014 to December 2016 were studied, out of which 220 smears (67%) showed inflammatory changes, 20 (6%) smears were inadequate and 20 (6%) were normal. 4 showed (1%) atrophic changes,

25(7%) –ASCUS (Atypical Cells of Undetermined Significance) 5(1%) –AGUS (Atypical Glandular cell of Undetermined Significance), 19 (5%) –LSIL (Low grade Squamous Intraepithelial Lesion, 5 (1%) HSIL (High grade Squamous Intraepithelial Lesion) (1%) and 7(2%) squamous cell carcinoma.

The ratio of neoplastic to non neoplastic was 61:220:, and the ratio of premalignant to malignant was 54:7. ASCUS and AGUS constituted about 49% of the neoplastic lesions. ASCUS progresses to LSIL, HSIL and SCC. AGUS progresses to adenocarcinoma.

Cervical cancer is the leading cause of death among Indian women. It is the 4th common cancer causing death in them and its increasing incidence can be attributed to changing lifestyles. It is more common in the rural than urban areas, due to non availability of screening methods, illiteracy and poverty.

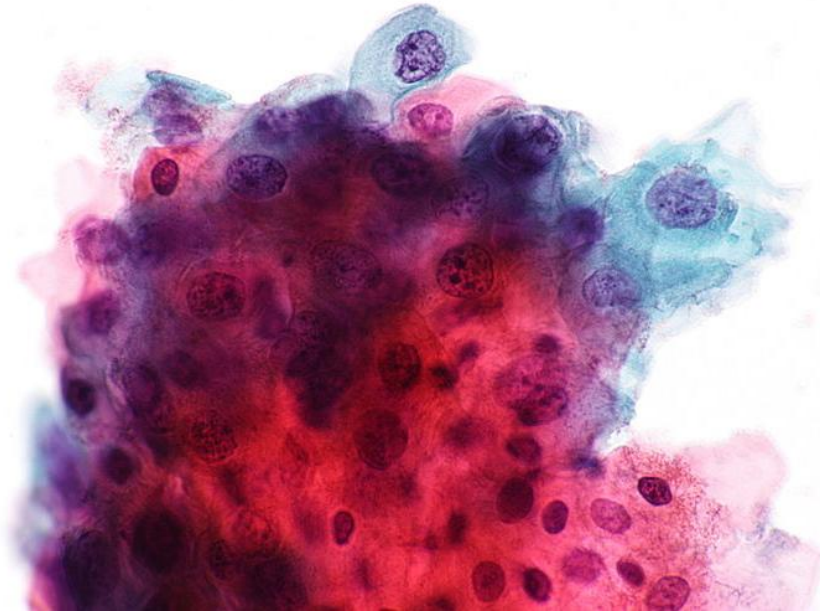
**Table.1** Age wise distribution of various neoplastic and nonneoplastic lesions of cervix

Age	Inflammatory	Normal	Atrophic	Ascus	Agus	LSIL	HSIL	CARCINOMA
20-29	71	7		01				
30-39	59	3		20	04	09	03	
40-49	48	5	2	04	01	06		
50-59	30	5	2			04	02	05
60-70	12							02
TOTAL	220	20	4	25	5	19	5	7

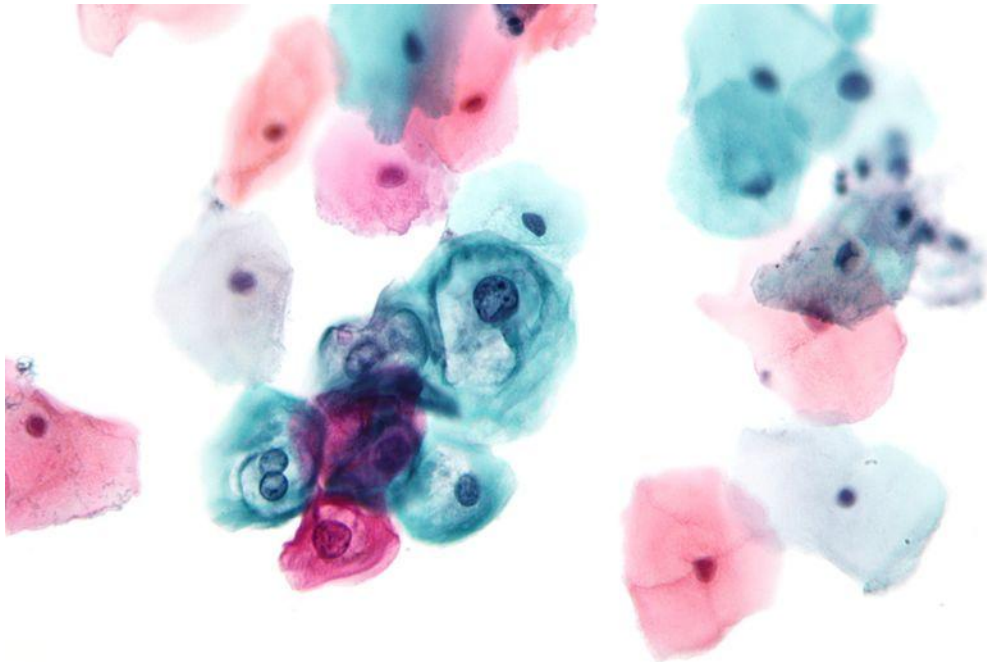
**Table.2** Comparison of findings of pap smear cytology with our study

	Present study	Thomas <i>et al</i> 2002	Karuna <i>et al</i> 2003	M.S Bal <i>et al</i> 2012	Beinton <i>et al</i> 1986	Bajpai <i>et al</i> 2016
ASCUS	6%	15.3%	6%	0.3%	6.9%	0.3%
LSL	5%	14.1%	7%	2.7%	8.4%	1.3%
HSIL	1%	5.8%	5%	0.7%	2.6%	0.6%
CA	2%			1.3%	2.6%	0.3%

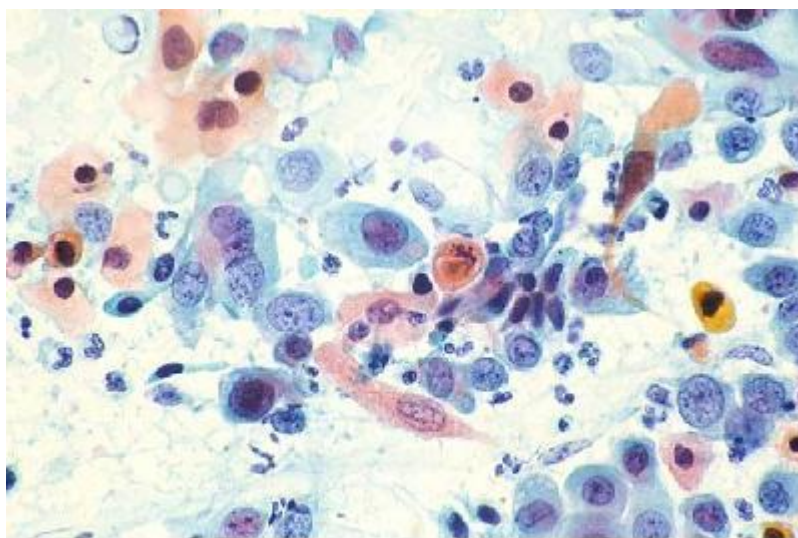
**Fig.1** Photomicrograph of ASCUS showing atypical squamous cells (papx400)



**Fig.2** Photomicrograph of LSIL showing a group of parabasal cells with anisonucleosis (papx400)



**Fig.3** Photomicrograph of squamous cell carcinoma showing malignant cells with nucleomegaly and hyperchromatic nuclei, irregular nuclear margins and strap cells. (papx400)



Appropriate mass screening programmes are required to detect precancerous lesions and thereby prevent their progress to cancer. In our study 67% were inflammatory lesions, 19% were premalignant. Out of the premalignant lesions ASCUS and AGUS were 55%. ASCUS was observed in the age group 30 to 50 years.

The findings in our study correlated with other studies. Pap smear screening can be advocated to all women above 30 years and above. It is a gold standard for cervical screening programmes, although a variety of screening tests like liquid pap cytology, automated cervical screening techniques, visual inspection of cervix after lugol's iodine and acetic acid application are available (Kerkar, 2006).

WHO has recommended screening every woman once in her life time after 40 years (Beinton, 1986). The American cancer society recommends screening all women starting from 3 years after first coitus and repeat after

1-2 years. The sensitivity can be increased by combining with HPV-DNA testing

In conclusion, pap smear examination is an effective screening method accepted worldwide. If inconclusive biopsy is indicated in suspicious cases. It can help immensely in detecting premalignant lesions and further prevent their progress to malignancy. Long term screening programmes especially in rural India can help in early detection of these cases.

### References

- Beinton, A., Palintasa, Barrett, Conner. 1986. estrogen depressive symptoms in post menopausal women, *J. Obs. Gynecol.*, 80(1): 30-33.
- Cioc, A.M., Julius, C.J., Proca, D.M., Tranovich, V.L., Keyhani-Rofaga, S. 2002. Cervical biopsy/ cytology correlation data can be collected prospectively and shared clinically. *Diagn. Cytopathol.*, 26(1): 49-52,

- PMID:11782088.
- Gustafsson, L., Ponten, J., Zack, M., Adami, H.O. 1997. International incidence rates of cervical cancer after introduction cytological screening. *Cancer Causes Control*, 8(5): 755-63, PMID: 9328198
- Kerkar, R.A., Kulkarni, Y.V. 2006. Screening for cervicalcancer: An overview. *J. Obstet. Gynecol. India*, 56: 115-22.
- Mulligan, N.J., Delas Morenas, A. 1998. Soto –Wright V, Obrien MJ. Percentages of cervical cytologic dignoses as a quality assurance method. *Acta Cytol.*, (4): 928-34PMID: 9684579.
- Parkin, D.M., Bray, F.I., Devesa, S.S. 2001. Cancer burden in the year 2000,The Global picture. *Eur. J. Cancer*, 37 Suppl 8: 54-66, PMID :11602373
- Thomas, A., Corrara, Majoria, M.A., Kumar, K.R. 2002. The Bethesda system recommendation in reporting lining endometrial cells in cervical smears from postmenopausal women Published by American Cancer Society. *Indian J. Pathol. Microbiol.*, 25(1): 134.

**How to cite this article:**

Vijaya, K., and Shyamala, R. 2017. Utility of Pap Smear in Cervical Screening in a Tertiary Care Hospital. *Int.J.Curr.Microbiol.App.Sci*. 6(1): 319-323.  
doi: <http://dx.doi.org/10.20546/ijcmas.2017.601.039>