

## Utility of cervical pap smears in screening of postmenopausal women

Suchitra K.N<sup>1</sup>, Divya K.N<sup>2,\*</sup>, Jayashree K<sup>3</sup>, Bharath C<sup>4</sup>

<sup>1</sup>Tutor, <sup>2</sup>Associate Professor, <sup>3</sup>Professor, <sup>4</sup>Professor & HOD, <sup>1-4</sup>Dept. of Pathology, Vijayanagar Institute of Medical Sciences, Bellary, Karnataka, India,

**\*Corresponding Author:**

Email: divyaaural@yahoo.co.in

### Abstract

**Introduction:** Cervical cancer is one of the most preventable and curable cancer. The papanicolaou cervical cytology test is capable of detecting cervical cancer at an early stage and is widely used in developed countries, where it has decreased both the incidence and mortality of cervical cancer. Therefore, it is important to investigate the significance of screening in postmenopausal women.

#### Objectives of the study:

1. To study the cytomorphology of different cervical lesions among postmenopausal women.
2. To determine the significance of cervical cancer screening in symptomatic and asymptomatic postmenopausal women.

**Materials and Methods:** A prospective study of one year duration from January 2017 to December 2017 was conducted in the department of pathology of our institution. The conventional cervical pap smears of postmenopausal women were obtained from the department of gynaecology and reported according to the 2014 Bethesda system.

**Results:** Out of the 198 smears of postmenopausal women screened, 17 (8.6%) were normal smears, 12 (6.1%) were atrophic, 97(48.9%) were inflammatory smears. Atypical squamous cells of undetermined significance (ASC-US) were 31(15.7%) cases, 10(5.1%) were reactive cellular changes associated with inflammation, 06 (3.0%) were low grade squamous intraepithelial lesion (LSIL), 08 (4.0%) were high grade squamous intraepithelial lesion (HSIL) and 01 (0.5%) case of squamous cell carcinoma was observed in our study. 16(8.1%) smears were unsatisfactory for evaluation.

**Conclusion:** The risk of cervical cancer increases as the age advances, therefore postmenopausal women should be screened with cervical Pap smears for early detection and better management.

**Keywords:** Pap smear, Postmenopausal women, Screening.

### Introduction

Cervical cancer is the most common type of cancer among women in Sub-Saharan Africa, South Asia and Latin America, where 60% of all cases in the world occur.<sup>1</sup> India accounts for approximately 1,00,000 cases of cervical cancer per year.<sup>2</sup> Human papilloma virus(HPV), a sexually transmitted oncogenic virus is now recognised as the main cause of cervical cancer. Cervical cancer is the only gynaecological cancer that met the WHO criteria for the implementation of a screening programme<sup>3</sup>

WHO defines menopause as permanent cessation of menstruation resulting from loss of ovarian activity.<sup>4</sup> Common menopausal age in Indians is 45-50 years. Postmenopausal women constitute only 1% of female population.<sup>5</sup>

Medical consultation availed by postmenopausal women is less due to social or cultural inhibitions and economic reasons. Hence there is a risk of undetected malignancies of the urogenital tract, especially cervical cancer among these women.<sup>6</sup>

The Papanicolaou (PAP) smear introduced by George N Papanicolaou has helped in reduction of morbidity and mortality rates of cervical cancer. The slow progression of cervical cancer, cytologically identifiable precursors and effective treatments have made it one of the most preventable cancers.<sup>7</sup> Women in advancing age are at higher risk of cervical

carcinoma and present frequently at a later stage due to lack of awareness and knowledge. If a woman is screened at least once when she is between the ages of 40-45 years, the mortality rate of cervical cancer can be significantly reduced.<sup>8</sup>

The aim of the present study is to determine the significance of cervical pap smear screening in postmenopausal women.

### Materials and Methods

This prospective study was carried out in the Department of Pathology at our institute from January 2017 to December 2017 after obtaining approval from the institutional ethical committee. All the conventional cervical smears of postmenopausal women obtained from the Department of Gynaecology of our institution were included in our study. Uncooperative patients and premenopausal women were excluded from our study. Smears were taken by trained doctors using modified Ayre's wooden spatula which was inserted and rotated 360°C over cervix. Both ectocervix and endocervix were sampled on the same slide. The smears were fixed with a spray fixative. The prefixed conventional pap smears obtained from Department of Gynaecology were stained with haematoxylin and eosin stain. The cytological interpretation of smears were made according to the 2014 Bethesda system.

## Results

A total of 198 postmenopausal women were screened during the above mentioned period. The age group of the women ranged from 45 to 80 years. The common symptoms at presentation were white discharge per vagina and lower abdominal pain. Some presented with postmenopausal bleeding and mass per vagina (uterine prolapse). 16 (8.1%) smears were found to be unsatisfactory for evaluation. 17(8.6%) smears were within normal limits. Negative for intraepithelial

lesion or malignancy category included: nonspecific inflammation 97(48.9%) smears, reactive cellular changes associated with inflammation 10 (5.1%) and atrophy 12 (6.1%) smears. Table 1A

Epithelial cell abnormalities category included ASC-US 31 (15.7%) smears, LSIL 06 (3.0%) smears Fig. 1, HSIL 08 (4.0%) smears Fig. 2 and squamous cell carcinoma 01 (0.5%) smear Fig. 3. Table 1B

**Table 1: Prevalence and comparison of Papanicolaou smear results of postmenopausal women**

**Table 1A: Negative for intraepithelial lesion or malignancy**

Age (In yrs)	No of cases	Unsatisfactory smear*	Normal smear	Inflammatory smear	Reactive cellular changes associated with inflammation	Atrophy
45-54	108	06	10	72	08	00
55-64	53	08	05	18	02	02
65-74	24	02	02	05	00	06
75& above	13	00	00	02	00	04
Total	198	16(8.1%)	17(8.6%)	97(48.9%)	10(5.1%)	12(6.1%)

\* Unsatisfactory smear- Insufficient squamous cellularity, partially obscuring blood

**Table 1B: Epithelial cell abnormalities**

Age (In yrs)	No of cases	ASC-US	LSIL	HSIL	Squamous cell carcinoma
45-54	108	08	03	01	00
55-64	53	15	01	02	00
65-74	24	04	01	04	00
75 & above	13	04	01	01	01
Total	198	31(15.7%)	06(3.0%)	08(4.0%)	01(0.5%)

## Discussion

As cervical cancer is prevalent all over the world, cervical cancer screening and early diagnosis of the disease is vital. Cervical cancer has a long preinvasive phase. Hence population based screening and relevant management of preinvasive lesions can reduce the rate of cervical cancer.<sup>9</sup> Pap smear is an easy, cost effective screening procedure.

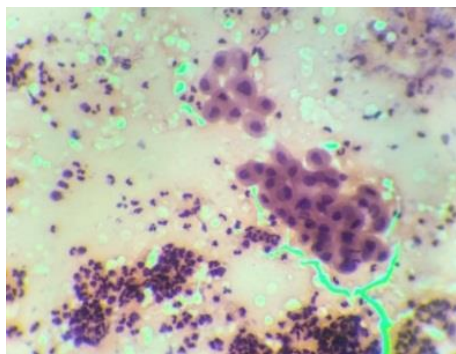
To date, there are very less published data from India concerning the pattern of epithelial cell abnormalities in pap smear especially in postmenopausal and elderly age groups.<sup>10</sup>

In the present study 16(8.1%) smears were unsatisfactory for evaluation and 17(8.6%) smears showed normal study. Unsatisfactory smears included specimens with approximately less than 8,000-12,000 well preserved and well visualized squamous epithelial cells and more than 75% squamous cells obscured by blood or inflammatory cells.<sup>11</sup> Inflammatory smears were noted in 97 cases (48.9%) which is comparable to study by Vaghela B et al<sup>12</sup> (37.4%). Atrophic smears were noted in 12 cases (6.1%) which is similar to study by Berfu Demir et al.<sup>13</sup> (5.9%). In the present study 31

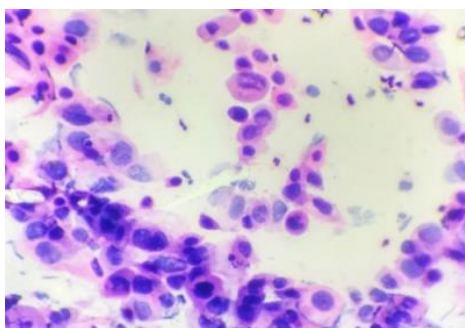
(15.7 %) of ASC –US were seen. In a study done by Velu AR et al<sup>14</sup> ASC-US was (8.85%). The incidence of LSIL was 06 (3.0 %) cases and HSIL 08(4.0%) cases in the present study. Study done by Kaiho N et al.<sup>6</sup> showed LSIL and HSIL to be (4.9%) and (3.9%) respectively. In the present study one case (0.5 %) of squamous cell carcinoma was reported which is similar to study by Destegul et al.<sup>9</sup> (0.22%). Variations in findings in comparison with other studies may be due to differences in sample size and duration of study period.



**Fig. 1: LSIL (H&E, 40X)**



**Fig. 2: HSIL (H&E, 40X)**



**Fig. 3: Squamous cell carcinoma (H&E, 40X)**

### Conclusion

Since postmenopausal women are at increased risk of cervical cancer, detection of cervical cancer during the preinvasive period by screening of postmenopausal women and early intervention prevents its progression to life threatening illness. Pap smear is a simple, cheap, safe diagnostic tool available for screening postmenopausal women. Human papilloma virus (HPV) as the leading cause of cervical cancer is a well-known fact so, HPV vaccines might offer a promising breakthrough to check the global burden of cervical cancer. Hence women should be educated regarding the risk of acquiring HPV infections, importance of pap smear screening for early intervention and the benefits of vaccination.

**Conflict of Interest:** None

### References

1. Parkin DM, Bray FI, Devesa SS. Cancer burden in the year 2000. The global picture. *Eur J Cancer* 2001;37(8):S4-66.

2. Ramachandran M, kannan A, kiyam W, priavadhana RP, Bheema Rao G. Pap smear findings in premenopausal and post menopausal women –A comparative study. *Res J Med Allied Sci* 2016;1(1):14-21.
3. Kerkar RA, Kulkarni YV. Screening for cervical cancer: An overview. *J Obstet Gynecol India* 2006;56(2):115-22.
4. W.H.O Research on the menopause in the 1990s. Report of a WHO scientific group. World Health Organization technical report series. 1996;866:1-107.
5. Kothapally K, Bhashyakarla U. Postmenopausal bleeding: Clinicopathological study in a teaching hospital of Andhra Pradesh. *Int J Reprod Contracept Obstet Gynecol* 2013;2:344-48.
6. Kaiho N, ,Devi LS, Singh LR. Uterine cervical cytomorphology in symptomatic postmenopausal women. *J Evid Based Med Healthc* 2016;3(27):1237-41.
7. Layden WA, Manos MM, Geiger AM. Cervical cancer in women with comprehensive health care access: Attributable factors in the screening process. *J Natl Cancer Inst* 2005;97(9):675-83.
8. Juneja A, Sehgal A, Sharma S, Pandey A. Cervical cancer screening in India: Strategies revisited. *Indian J Med Sci* 2007;61(1):34-7.
9. Destegul E, Genedal S, Ekmekei E, Aydogmus H, Ozdemir O. Evaluation of cervicovaginal smear results at postmenopausal period. *Adv Mod Oncol Res* 2016;2(1):45-9.
10. Akshatha C, Arul P, Shetty S. Prevalence and comparison of cervical cytology abnormalities in postmenopausal and elderly women: A experience from tertiary Care hospital. *J Med Soc* 2017;31:23-7.
11. George G, Birdsong, Diane Davis Davey. Specimen adequacy. In: Ritu Nayar, David C. Wilbur (eds) The Bethesda system for reporting cervical cytology. 3rd ed. Switzerland: Springer; 2015.p1-28.
12. Vaghela B, Vaghela V, Santwani P. Analysis of abnormal cervical cytology in Papanicolaou smears at tertiary care centre-A retrospective study. *Int J Biomed Adv Res* 2014;5(01):47-9.
13. Berfu Demir, Ali Haberal, Esmenozturkogul, Betul Dunder, Bahar Baskan, Emine Sobact et al. Pap smear screening among the postmenopausal women. *GORM* 2010;16:168-72.
14. Velu AR, Srinivasmurthy BC, Balamurugan M. Clinicopathological significance of Papanicolaou smear study of postmenopausal women in a rural tertiary care centre. *Clin cancer investing J* 2015;4:147-51.

**How to cite the article:** Suchitra K.N, Divya K.N, Jayashree K, Bharath C. Utility of cervical pap smears in screening of postmenopausal women. *Arch Cytol Histopathol Res* 2018;3(4):192-194.