

**Cervical Smear Findings in Perimenopausal and Postmenopausal Women: A Study of 100 Cases**<sup>1</sup>Megha Sharma, Senior Resident, Department Of Pathology, GMC JAMMU<sup>2</sup>Bharti Devi Thaker, Senior Resident, Department Of Pathology, GMC JAMMU<sup>3</sup>Kuldeep Singh, Professor, Department Of Pathology, GMC JAMMU**Correspondence Author:** Megha Sharma, Senior Resident, Department Of Pathology, GMC JAMMU**Conflicts of Interest:** Nil**Introduction**

Cervical cancer 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, largely as a result of lack of screening. Nearly 4 lacs new cases of cervical cancers are diagnosed annually worldwide and 80% of them are diagnosed in the developing countries (1). There are 1.7 million cases in the developing world and as many as 5-13 millions women have precancerous lesions (2, 3) According to National Cancer Registry Program of India, cancers of uterine cervix and breast are leading malignancies seen in Indian women (4). India has the largest burden of cervical cancer patients in the world and one of every five cervical cancer patients belongs to this country. (5)

Cervical cancers can be prevented through early detection using several screening techniques. The Papanicolaou (Pap) smear was introduced in 1941 and became the standard screening test for cervical cancer and premalignant lesions (1) The most widely used system for describing PAP smear result is TBS [2001, The Bethesda System]. (6)

This study was conducted to highlight the importance of Pap smear for screening of inflammatory, premalignant and malignant lesions of cervix and to estimate the prevalence of cervical cytological pattern in premenopausal and postmenopausal women.

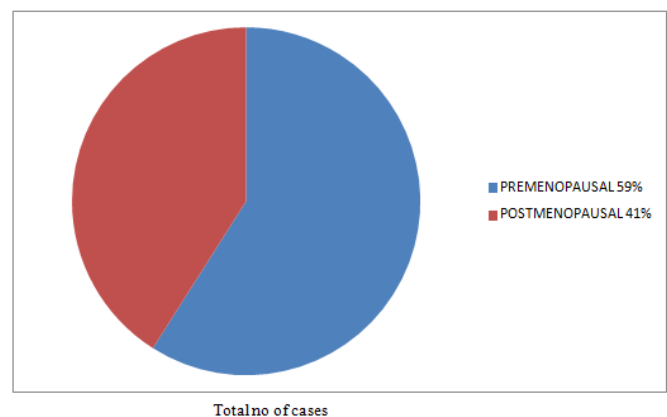
**Material and method**

This one year study was conducted amongst 100 cervical pap smears of women with age group 20 to 75 years, coming to the cytology section of Pathology Department, Government Medical College, Jammu, J&K between May 2016 to June 2017.

All the slides received during this period were subjected to conventional pap smear and reported by using the Bethesda system.

**Result**

A total of 100 cases were analysed. The age of the women ranged from 23 to 75 years of which 59 women were in premenopausal age group and 41 women in postmenopausal age group.



**Findings of Pap smear**

Pap smear	Premenopausal	Postmenopausal	Total
Normal	22	8	30
Inflammatory smear without infection	20	8	28
Inflammatory smear with infection	6	2	8
Bacterial vaginosis	7	1	8
Trichomonas	2	2	4
Candidiasis			
LSIL	1	6	7
HSIL	1	4	5
Squamous cell carcinoma	0	2	2
Atrophic smear	0	8	8
Total	59	41	100

**Premenopausal women**

Out of a total of 100 cases, 59 cases were of premenopausal women. Amongst these, 22 cases (37.2%) were reported as normal pap smear, 20 cases (33.8%) had inflammatory smear without any specific pathology. Specific pathology was identified in 15 cases (25.4%), 6 were diagnosed as Bacterial vaginosis, 7 as Trichomonas and 2 cases of Candidiasis. Low grade Squamous Intraepithelial Lesion (LSIL) was diagnosed in 1 case (1.6%) while 1 case (1.6%) of High grade Squamous Intraepithelial Lesion (HSIL) was

diagnosed. There was no case of malignancy and atrophic smears were not seen in perimenopausal women.

**Postmenopausal women**

Among 100 cases, 41 cases (41%) fell in postmenopausal category. Of which 8 cases (19.5%) were reported as normal pap smear. 8 cases were reported as inflammatory smear without any specific pathology while specific pathology was seen in 5 cases (12.1%) only (2 cases of bacterial vaginosis, 2 cases of candidiasis and 1 case of trichomonas). Low grade Squamous Intraepithelial Lesion (LSIL) was diagnosed in 6 cases (14.6%) and High grade Squamous Intraepithelial Lesion (HSIL) in 4 cases (9.7%). There were 2 cases (4.8%) of squamous cell carcinoma and atrophic smear was reported in 8 cases (19.5%).

**Discussion**

Cervical cancer is the most common cancer among women in India and it is the leading cause of mortality and morbidity. Nearly 4 lac new cases of cervical cancers are diagnosed annually worldwide and 80% of them are diagnosed in the developing countries. In India, the peak age for cervical cancer incidence is 55-59 years. (7) In our study maximum cancer incidence is also seen in postmenopausal age group. Current data from the National Cancer Registry Program (NCRP) indicates that the most common sites of cancer among women are the breasts and the cervix. (8) Cervical cancers can be prevented through early detection by means of effective screening techniques. The mainstay of cervical cancer screening for the last 60 years has been Papanicolaou test, introduced by George Papanicolaou as a cervical pathology screening test in 1941. (9) We examined 100 Pap smears, out of which 59 cases (59%) fell in perimenopausal age group and 41 cases (41%) in postmenopausal category.

In this study, smears with abnormal epithelial changes (14 cases) represented 14 % total smears (100) examined. According to previous studies prevalence rates of abnormal epithelial changes range from 1.39% -7.8% in India (10-13). Women aged 45 years or above harbor the bulk of premalignant and malignant lesions (14). Jena et al noted majority of the epithelial cell abnormality in the fourth decade (15) while Sunita et al noted maximum number of cases of epithelial cell abnormality in women between 31-40 yrs (16). In our study maximum number of epithelial cell abnormality seen in women who fell in postmenopausal age group.

In the present study, the inflammatory smear was found to be more common in premenopausal age group women than postmenopausal age group women. The STDs like *Trichomonas vaginalis*, *Candida albicans* and bacterial vaginosis were also diagnosed more amongst the premenopausal women. Out of 59 premenopausal women studied, 16 women were reported as inflammatory smear with infections like bacterial vaginosis (6 cases), Trichomoniasis (7 cases) and Candidiasis (2 cases). In postmenopausal age group, 8 women had inflammatory smear without any underlying pathology, and specific pathology was seen in 4 cases only. This is in concordance with study by Ranabat SK et al (18) where women of age group between 21 to 80 were studied and in which 26% were reported as inflammatory smear, 1% reported candidiasis, 0.45% had Trichomoniasis, 7.6% had Bacterial vaginosis and 0.34% had Herpes simplex virus infection.

In the present study, the prevalence of Low grade Squamous Intraepithelial Lesion, High grade Squamous Intraepithelial Lesion and Squamous cell carcinoma were higher in the postmenopausal age group than the premenopausal age group. The incidence of HSIL and

carcinoma was greatly increased in the above 50 years indicating the gradually increasing incidence of malignancy with age (14). These results are in accordance with studies of Bal et al (14), Ethaheem et al (17). Ranabat SK et al (18) found that eighty percent of all the epithelial abnormalities like squamous and glandular lesions were found in women >40 years of age. JS Mishra et al (19) also has pointed that in out of 36484 women studied, 12681 women were above 40 yrs of age in which 10.1% had SIL and 1.3% had Carcinoma cervix.

Ranabat SK et al (18) also showed Atypical Squamous Cells of Undetermined Significance (ASCUS) 2 %, Atypical Glandular Cells (AGC) 2 %, LSIL 3 %, HSIL 6% and Squamous carcinoma 2%, in which 75 % (1.5%) of ASCUS was in postmenopausal age group, no AGC was reported in postmenopausal age group, 83.3% (2.5%) of LSIL was in postmenopausal age group, 66.4% (4%) of HSIL and the 100% (2%) of squamous cell carcinoma were in the postmenopausal age group which is similar to finding of the present study.

### Conclusion

Pap smear is a simple, cheap, safe and practical diagnostic tool for early detection of cervical cancer in high risk group population, so it should be established as a routine screening procedure. It also has a greater role in diagnosis of inflammatory lesions including the identification of causative organism, atrophic changes. Pap smear is an effective tool for early detection of premalignant and malignant lesions of cervix when it is amenable to simple cure and treatment. It is thus recommended that regular Pap smear screening should be conducted in vulnerable age group.

### Reference

- [1]. Juneja A, Sehgal A, Sharma S, Pandey A. Cervical cancer screening in India: Strategies revisited. *Indian J Med Sci.* 2007;61:34-47

- [2]. Rejendra A Kalkar, Yogesh Kulkarni. Screening for cervical cancer: an overview. *Obstet Gynecol India* vol. 56 no. 2: March / April 2006.
- [3]. Mohammed Shaoaib Khan, Fohadiya Yasin Raja et al. Pap smear Screening for Precancerous conditions of the cervical cancers. *Pak J. Med. Res.*; vol. 44 no. 3, 2005:111-3.
- [4]. National Cancer Registry Program. Annual Report. IC New Delhi; 1990-1996
- [5]. Guidelines for cervical cancer screening programme. Government of India-World Health Organization Collaborative Programme, 2006.
- [6]. The 2001 Bethesda System; Terminology for reporting results of cervical cytology. *JMA* 287, 2114, 2002. .
- [7]. Pradhan B, Pradhan SB, Mital VP. Correlation of pap smear findings with clinical findings and cervical biopsy. *Kathmandu Univ Med J.* 2007;5(4):461-7.
- [8]. Aswathy S, Reshma J, Avani D. Epidemiology of cervical cancer with special focus&nbsp;on India. *Int J Women's Health.* 2015; 405.
- [9]. Papanicolaou GN, Traut HF. The diagnostic value of vaginal smears in carcinoma of the uterus. *Am J Obstet Gynecol.* 1941;42:193-206.
- [10]. Karuma, Gaspanal V, Van-Dan Brule R. The clinical profile and cervical cytomorphology. *Indian Jr Of Pathol Microbial.* 2003;46(2):179-89.
- [11]. Misra JS, Singh U. Results of long term hospital based cytological screening in asymptomatic women. *Diagn Cytopathol.* 2006;34:184-7.
- [12]. Patel TS, Bhullar C, Bansal R, Patel SM. Interpreting epithelial cell abnormalities detected during cervical smear screening: a cytohistologic approach. *Eur J Gynaecol Oncol.* 2004;25:725-8.
- [13]. Mulay K, Swain M, Patra S, Gowrishankar S. A comparative study of cervical smears in an urban hospital in India and a population based screening program in Mauritius. *Indian J Pathol Microbiol.* 2009;52:34-7.
- [14]. Bal MS, Goyal R, Suri AK, Mohi MK. Detection of abnormal cervical cytology in papanicolaou smears. *J Cytol.* 2012;29(1):45-7.
- [15]. Sherwani RK, Khan T, Akhtar K, Zeba A et al. Conventional Pap smear and Liquid Based Cytology for Cervical Cancer Screening: a Comparative Study. *Jr of Cytol.* 2007;24(4):167-72
- [16]. Gupta S, Sodhani P, Halder K, Chachra KL, Singh V, Sehgal A. Age trends in pre-cancerous and cancerous lesions of the uterine cervix in a cytology screening programme: what should be the target age group for a major thrust of screening in resourcelimited settings? *Cytopathology.* 2008;19(2):106-10.
- [17]. Elhakeem HA, Al-Ghamdi AS, Al- Maghrabi JA. Cytopathological pattern of cervical PAP smear according to the Bethesda system in Southwestern Saudi Arabia. *Saudi Med J.* 2005;26:588-92.
- [18]. Ranabhat S, Dhungana G, Neupane M, Shrestha R, Tiwari M. PAP smear coverage and effect of knowledge and attitude regarding cervical cancer on utilization of the test by women in Udayapur district of Nepal. *J Chitwan Med Coll.* 2015;4(4).
- [20]. Misra S, Srivastava S, Singh U, Srivastava AN. Risk actors and strategies for control of carcinoma cervix in India: Hospital based cytological screening experience of 35 years. *Indian J Cancer* 2009;46:155-9.