

A Clinicopathological Correlation of Pap Smear Findings in Gynecological Cases: A Retrospective Study

Kalpna Singh¹, Anshu Singh²

¹MBBS MD FMAS Senior Resident, Obs and Gyne IMS, BHU, Varanasi, Uttar Pradesh, 221005

²MBBS MD Senior Resident, Pathology IMS, BHU, Varanasi, Uttar Pradesh, 221005

Abstract: ***Aim:** The present study is intended to detect the significance of epithelial cell abnormalities (ECA) identified during cervical smear screening and correlate it with clinical findings. **Materials and Methods:** Detailed clinical data and pap smear cytology was obtained of 1000 patients attending obstetrics and gynaecology O.P.D between 2014 -2015 with various gynecological problems . All the smears were reported as per the 2001 Bethesda system. **Results:** Among 1000 screened patients 108 (10.8%) patients showed abnormal findings . Age group of 40-49 yrs showed 38.8% abnormal reports . Among them 10 (9.25%) having LSIL and 8 (7.4%) having ASCUS. Age group 30-39 yrs 25(25.14%) showed abnormal results . In this group 12 (11.11%) showing LSIL and 10 (9.25%) having ASCUS in their reports. ASCUS -H was in 10 (9.25%) cases and AGUS was in 5(4.6%).LSIL was present in 35(32.40%) smears and HSIL contributing only 10 (9.25%) of cases. **Conclusion:** Need of widespread public awareness programmes for early detection and treatment of cervical cancer. Health education, screening and follow up of the patients should be part of health programmes .*

Keywords: pap smear, screening, LSIL, HSIL, cervical cancer

1. Introduction

Cervical cancer is the second most common cancer among women worldwide. India accounts for 1/5th of burden of cervical cancer. According to WHO about 80% of all cases occur in developing countries, because prevention programmes are either non existent or poorly implemented^{1,2}. Unlike most other malignancies, cancer of cervix is easily preventable. Its precursor lesions are easy to detect and treat³. Detection of dysplastic changes by pap smear can help in early diagnosis and management. Pap smear is simple , easy and effective screening tool for detection of early epithelial cell abnormalities (ECA). In the detection of cervical pathologies , conventional cytology is reported to have a sensitivity of 30-87% and specificity of 86-100 % , while sensitivity and and specificity of newer liquid based cytology is between 61-95 % and 78- 82 % , respectively⁴.

Atypical squamous cells - cannot exclude high grade squamous intraepithelial lesions (ASC-H),low grade squamous intraepithelial lesions (LSIL) ,high grade squamous intraepithelial lesions (HSIL) are premalignant cellular changes , which over the time may convert into malignant form . These early changes can not only be detected by pap smear but also follow up can be done. Patient can be appropriately managed according to grade of dysplasia. Widespread use of pap smear can decrease the mortality due to cervical cancer.

2. Literature Survey

Cancer cervix is very common in developing countries.Due to high incidence mortality is too high .Early detection and prevention is based on screening by pap smear.Cervical smear cytology is boon in the detection of early dysplastic changes of the squamous epithelium.

3. Materials and Methods

A retrospective study was conducted over 1000 patients attending gyne out patient department in IMS ,BHU in the duration of jan 2014-2015 . Patients between age of 18-70yrs presenting with various symptoms - per vaginal discharge, menstrual irregularities, pelvic pain , and dyspareunia were included. Cervical smear was taken by using pap kit (endocervical brush, Ayre's spatula and cotton swab) . Smears were fixed immediately in 95% isopropyl alcohol and stained with Papanicolaou stain .Reporting of pap smear was done based on the revised Bethesda system 2001.

4. Results

Females of all the age groups, 18-70 years with various gynecological symptoms were screened .

Table 1: Gynecological cases (n=1000)

Asymptomatic	658 (65.85%)
Menstrual abnormalities	88(8.8%)
White discharge	192(19.2%)
Bleeding on touch	62(6.2%)

Among 1000 cases screened, 846(84.6%) cases were negative for intraepithelial lesion or malignancy.Out of these 618 (61.8%) were reported normal, 228 cases were inflammatory (22.5%), 108 cases showed epithelial cell abnormality (10.8%) and 46 (4.6%)cases could not be reported due to inadequate smear .

Table 2: Results of Cervical Cytology

Total cases	(n=1000)
NILM	846(84.6%)
	Normal 618 (61.8%) Inflammatory smear 228 (22.8%)
ECA	108(10.8%)
Inadequate smear	46 (4.6%)

Microscopy of inflammatory smears showed bacterial vaginosis, specific infections like trichomonas, candida and other non specific infections. Epithelial cell abnormality was detected in 108 (10.8%) cases. In 46 patients smear could not be commented upon because of inadequacy due to absence of endocervical or metaplastic cells. Epithelial cell abnormality was categorized according to revised Bethesda system 2001

Table 3: Epithelial cell grading (Bethesda system)

ASCUS	19(17.6%)
ASCUS-H	12(11.11%)
LSIL	42(38.88%)
HSIL	21(19.44%)
SQUAMOUS CELL CARCINOMA	10(10%)
AGUS	4(4%)

Table 4: ECA in relation with age .

Age group	N (108) %	ASCUS	LSIL	HSIL	AGUS
18-29 yrs	20 (18.5%)	8 (7.4%)	8 (7.4%)	0	0
30-39 yrs	25 (25.14%)	10 (9.25%)	12 (11.11%)	1 (0.92%)	1 (0.92%)
40-49yrs	42 (38.8%)	8 (7.4%)	10 (9.2550)	5 (4.62%)	2 (1.85%)
50-59yrs	18 (16.66%)	2 (1.85%)	4 (3.75)	3(2.77%)	2 (1.85%)
60-69yrs	3 (2.7%)	0	3 (2.77%)	1 (0.92%)	0

5. Discussion

In India incidence rates of cancer of the cervix is very high especially in rural areas⁵. Cancer cervix is easily detectable and treatable disease due to its long preinvasive period . Introduction of conventional pap screening reduces cervical cancer rates by 60% to 90% within 3 years of implementation; and these reductions in incidence and mortality are consistent⁶. People in our country are very less aware of pap smear screening. The patients in this study also came to the outpatient department being a tertiary care centre for gynecological problems and not for pap smear screening. In our study 10.8% of females showing epithelial cell abnormality and maximum patients 42(38.8%) are in age group of 40- 49 yrs showing dysplastic changes similar to study conducted by Bhagya lakshmi A et al (2014)⁷. Negative for intraepithelial lesions were found in 156(83.9%) and epithelial cell abnormality were seen in 30 (16.1%). Another study conducted by Sarma U et al (2012)⁸ showed epithelial cell changes in 11.95% of cases. Nazlian et al. in their study including 150 cases reported that 48.7% of normal, non-specific inflammation 24% , reactive changes secondary to inflammation 12.7% and ASCUS in 1.3% and inadequate 1.1%⁹.

Among the patients examined, 30-39 yrs age group 12(11.11%) showed LSIL and 10 (9.25%) ASCUS , 40-49 yrs age group 10 (9.25%) showing LSIL and 8 (7.4%) showed ASCUS in their smears. HSIL present in higher age group patients 45to 60 years . Study conducted by Asotic A

42(38.88%) smears showing LSIL and 19(17.6%) showing ASCUS representing maximum no among the screening . Abnormal cell has enlarged, hyperchromatic nuclei and altered N:C ratio . Cells of LSIL has perinuclear clearing which is termed as koilocytes. ASCUS –H also reported in 12(11.11%) cases. HSIL reported in 21(19.44%)patients and AGUS in 4(4%). Squamous cell carcinoma clear cut diagnosed on 10(10%) clinical cases .

Epithelial cell abnormality also classified on basis of age . 42 patients (38.8%) of age group 40-49 yrs , 25 patients (25.14%) of 30-39 yrs, 20 patients (18.5%) of 18- 29 yrs , 18 patients (16.6%) of 50-59 yrs and 3 patients (2.7%) of age group 60-69 yrs. Most of the pap smear detected ASCUS and LSIL .

et al¹⁰(2014) showed the highest percentage of patients with LSIL and HSIL findings was in the age group under 29 yrs , not similar to our study. In another study done by Gupta et al (2013) , maximum cases 40.37% in age group of 30-39 yrs followed by 35.96% in age group of 20-29 yrs .LSIL found in largest no. 1.36% while HSIL found 0.91%¹¹.

Early sexual intercourse at early age , multiple sexual partners , low socio - economic status , smoking , deficiency of vitamin A , and HPV infection are well known risk factor¹². Prevention and early treatment of cervical cancer are dependent on identification and elimination of variable risk factors and implementing proper screening test for appropriate age group¹³.

Reactive changes due to infection and atrophy are benign changes, reversible and long term periodical follow up should be done. LSIL and HSIL depending on age and parity conservative approach (cryotherapy, LEEP) or definitive surgical treatment can be done. As dysplastic changes can be found in any age group periodical cytological premenstrual and postmenopausal screening should be done.

6. Conclusion

As the early detection and management of dysplastic changes can reduce the incidence of full blown cases of carcinoma cervix , screening programmes should be done on large scale. In our country due to illiteracy , less awareness and lack of health facilities at remote areas as well as in

district hospitals, there is high incidence of advanced cases. A multidisciplinary approach is required to make the people aware by doing health camps, through media and by strict implementation of health programmes at PHC and CHC levels. Our approach should be to decrease the burden of the disease and improve the quality of life.

7. Future Scope

As our population is less aware of screening programmes, our focus should be more on prevention rather than treatment. Much more awareness and wide-based approach is required in our health system.

References

- [1] Rani A, Singh K, Thapa S. A survey of awareness of Pap smear and cervical cancer vaccine among women at tertiary care centre in Eastern Uttar Pradesh India. *Int J Reprod Contracept Obstet Gynecol.* 2015 Apr;4(2):439-41
- [2] Asotic A, Taric S, Asotic J. *Med Arch.* 2014 Apr;68(2):106-09.
- [3] Bal MS, Goyal R, Suri AK, Mohi MK. Detection of abnormal cervical cytology in papanicolaou smears. *J Cytol* 2012; 29:45-47.
- [4] Qiao YL, Pretorius R, et al. Shanxi province cervical cancer screening study: a cross-sectional comparative trial of multiple techniques to detect cervical neoplasia. *Gynecol Oncol.* 2001;83: 439-49
- [5] Nandkumar A, Anantha N, Venugopal TC. Incidence, mortality and survival in cancer of the cervix in Bangalore, India. *Br J Cancer* 1995;71:1348-52.
- [6] Soloman D, Davey D, Kurman R, Majority A, O'Connor D, Prey M, et al. The 2001 Bethesda System: terminology for reporting results of cervical cytology. *JAMA* 2002; 287:2114-19.
- [7] Bhagya LA, Devi MB, Vasundhara M, Sri KS, Vani I, Sreelekha A. Patterns of epithelial cell abnormalities in pap smears and its clinicopathological and demographic association: a descriptive study from Visakhapatnam city, Andhra Pradesh, India. *Int J Res Med Sci* 2014;2:300-05.
- [8] Sarma U, Mahanta J, Talukdar K. Pattern of abnormal cervical cytology in women attending a Tertiary Hospital. *Int J Scientific and research Publications* 2012;2(12):1-4
- [9] Isaoglu U, Yilmaz M, Delibas IB, Bilici AE, Kabalar ME. *Arch Med Sci.* 2015 Apr 25;11(2):402-05.
- [10] Asotic A, Taric S, Asotic J. *Med Arch.* 2014 Apr; 68(2):106-09.
- [11] Gupta K, Malik NP, Sharma VK, Verma N, Gupta A. Prevalence of cervical dysplasia in western Uttar Pradesh. *J Cytol.* 2013 Oct-Dec 30 (4):257-62.
- [12] EC, Sogukpinar N, Saydam BK, Aydemir G. Cervical Cancer prevention and early detection. The role of nurses and midwives. *Acian Pae J Cancer Prev.* 2003;4:15-21
- [13] Ayhan A, Durukan T, Gunalp S et al. Basic knowledge of obstetrics and gynecology, 2nd ed. Ankara: Gunes Medical Publishing; 2008:1027.

Author Profile

Kalpana Singh is MBBS MD FMAS Senior Resident, Obs and Gyne IMS, BHU, Varanasi, Uttar Pradesh, 221005, India

Anshu Singh is MBBS MD Senior Resident, Pathology IMS, BHU, Varanasi, Uttar Pradesh, 221005, India