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Early detection of cervical epithelial cell abnormalities in Indian population

Authors
Dr Khushboo Likhar[1], Dr Meena Mittal[2*], Prof. Dr C.V. Kulkarni[3]
[1]Resident, Department of Pathology, M.G.M. Medical College, Indore
[2]Associate Professor, Department of Pathology, M.G.M. Medical College, Indore
[3]Professor and Head, Department of Pathology, M.G.M. Medical College, Indore
*Corresponding Author
Dr Meena Mittal
Associate Professor, Department of Pathology, M.G.M. Medical College, Indore, MP, India

Abstract
Background: *Cervical cancer is one of the most common malignancy with high mortality rates in females in developing countries.*
Aims: *The aim of the study is to determine the prevalence of cervical cytomorphological abnormalities in the patients attending OPD in M. Y. hospital, Indore and the detection rate of epithelial abnormalities by cervical cytology.*
Materials and Methods: *A total of 950 conventional pap smear tests collected between January 2015 and January 2016 from outpatient department in MYH Indore.*
Results: *Out of 950 sample studied, 17 (1.79%) cases had epithelial cell abnormalities in which Atypical squamous cell of undetermined significance (ASCUS; n=9 [0.95%]); atypical glandular cell of undetermined significance (AGUS; n=3 [0.31%]); low- grade squamous intraepitelial lesion (LSIL; n=2 [0.21%]); high- grade squamous intraepithelial lesion (HSIL; n=2 [0.21%]); and squamous cell carinoma (SCC; n=1 [0.10%]).*
Conclusion: *With the help of basic investigation like PAP smear, we have detected cervical epithelial abnormalities at an early age, so that the prevalence of dreadful disease like cervical cancer can be easily reduced.*
Keywords: *Cervical cancer, cytology, PAP smear.*

Introduction

Cervical cancer is one of the leading cancers in women with an estimated 500,000 new cases every year, of which 80% occur in developing countries.[1] In India it is estimated, that the number of cases are over 140,000.[2] Cervical cancers are the second most frequent type of female cancer, responsible for about 5% of cancer deaths in females' worldwide.[3] The Pap smear test is a simple, non-invasive, and a cost-effective method for the diagnosis of cervical and vaginal precancerous, cancerous lesions.[4]

Materials and Methods

Total 950 conventional pap smears were collected between January 2015 and January 2016 from the patients attending gynecology OPD. The PAP smears were received in the department of

pathology and the slides were stained with Papanicoule stains and then studied. The results were analysed based on 2016 Bethesda system and subdivided as atypical squamous cells of undetermined significance (ASCUS) and atypical glandular cells of undetermined significance (AGUS), low-grade squamous intraepithelial lesion (LSIL), high-grade squamous intraepithelial lesion (HSIL) and squamous cell carcinoma" (SCC).

Analysis of Pap Smear

Pap Smear		No. of cases	Percentage
Total Smears		950	100.00
I.Adequacy of smears	1. Satisfactory for evaluation	903	95.05
	2. Unsatisfactory for evaluation	47	04.95
II. General catagorization			
A. Normal smears		218	22.95
Benign cellular changes	Acute inflammatory smear	471	49.59
	Non specific inflammatory lesion	145	15.26
	Bacterial vaginosis	35	03.68
	Trichomonas vaginalis	9	00.95
	candidiasis	1	0.10
	Squamous metaplasia	2	0.21
	Reactive changes	1	0.10
	Atrophy	4	0.42
Epithelial cells abnormality		17	1.79
	Atypical glandular cells of undetermine significance [AGCUS]	3	0.31
	Atypical epithelial cells of -Atypical squamous cells undetermined significance [ASCUS]	9	0.95
	Low grade squamous intraepithelial lesion (HPV/mild dysplasia /CIN I . [LSIL]	2	0.21
	High grade squamous intraepithelial lesion [HSIL]	2	0.21
	Malignancy	1	0.10

Results

Out of 950 samples studied**,** there is wide distribution pattern of various condition. Out of which normal smears 218 (22.95%), Acute inflammatory smear 471 (49.59%), Non specific inflammatory lesion 145 (15.26%), bacterial vaginosis 35 cases (3.68%), trichomonas vaginalis 9 cases (00.95%), candidiasis 1 case (0.10%), squamous metaplasia 2 cases (0.21%), reactive changes 1 case (0.10%), atrophy 4 cases (0.42%) and epithelial cell abnormality comprises 17 cases (1.79%). Among epithelial cell abnormalities in which Atypical squamous cell of undetermined significance (ASCUS; *n*=9 [0.95%]); atypical glandular cell of undetermined significance (AGUS; *n*=3 [0.31%]); low- grade squamous intraepitelial lesion (LSIL; *n*=2 [0.21%]); high-grade squamous intraepithelial lesion (HSIL; *n*=2 [0.21%]); and squamous cell carinoma (SCC; *n*=1 [0.10%]).

Discussion

The present study consist of examination of 950 cervical smear, taken from patients attending OPD of department of Obstretric & Gynaecology and further sent to Department of Pathology for cytomorphological analysis.

In our study shows ASCUS (0.95%), AGCUS (0.31%), LSIL (0.21%), HSIL (0.21%) and SCC (0.10%). Study by Urmilla Banik et.al. [5] revealed the following scenario: 0.18% ASCUS, 0.12% Atypical glandular cells (AGC), 6.36% LSIL, 1.18% HSIL and 0.35% malignancy. Kaustubh Mulay et. al.[6] 0.64% ASC-US, 0.31% AGCUS, 0.21% LSIL, 0.16% HSIL, and 0.06% invasive cancer.

Our study shows ASCUS (0.95%) to be the most common epithelial cell abnormality. Similar results were obtained in other studies which also concluded that ASCUS to be the most common epithelial cell abnormality[7,8]. ASCUS progresses to LSIL, HSIL and SCC. AGUS progresses to adenocarcinoma.[9,10]

Our study also shows that the bulk of patient 68.2% belong to age group 21-40 years. Low grade squamous intraepithelial lesion (LSIL)was found mainly in the age group 41-50 years. High grade squamous intraepithelial lesion (HSIL) was found mainly in the age group 31-60 years. Invasive carcinoma cervix was found mainly in the age group 51-60 years.

Age incidence of epithelial cell abnormality by various authors -

AUTHORS	AGE (in years)
Sunita A. Bamanikar et.al. [11] (2014)	20-75 years
Hemali J. Tailor et.al. [12] (2016)	25-70 years
Present series 2016	LSIL (41-50 yr) HSIL (31-60 yr) SCC (51-60 yr)

The difference in the age incidence of intraepithelial lesions and carcinoma cervix could be due to wide variation in selection criteria.

Conclusion

Cervical cytology is a useful method for early detection of intraepithelial lesions and malignancy. So it should be established as a routine investigation. The 2014 Bethesda System has been proved to be best reporting system for reporting cervical cytology.

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