

## A study of Pap smears in a tertiary care hospital

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**Abstract:** Conventional cervical cytology is the most widely used cervical cancer screening test in the world. Squamous intra-epithelial lesions (SIL) and cervical cancer remain important health problems for women worldwide. The findings of this study confirm the role of conventional Pap testing as a screening test. **Aims & Objectives:** The Objective is to study the role of Pap smear in detecting premalignant and malignant lesions as well as non-neoplastic lesions of cervix and to determine the prevalence of various lesions. **Observation:** The study was done in 300 patients. Out of 300 cases examined by Pap on cytology, 33.3% patients were normal smears, 11.3% had inadequate cytology and 9.0% showed atrophic changes 2.0% were ASCUS, 0.3% showed AGUS and SCC respectively whereas HSIL were 0.6 % and LSIL 1.3% .**Conclusion:** Pap smear is an effective screening method for detecting cervical pre-malignant and malignant conditions. In comparison with other studies, we also report a lower percentage of abnormal Pap smears.

**Keywords:** cervical cancer, Pap smear.

### I. Introduction

Carcinoma of uterine cervix is the second most common cancer among women worldwide. After breast cancer, cervical cancer is the second most common cancer in women worldwide and considered to be the major cause of death from malignancy in women in developing countries<sup>1-3</sup>. It is most prevalent form of cancer in developing countries especially in South East Asia region and prevalence is much higher than developed ones. The pre-clinical stage of cancer of cervix lasts for several years and so can be detected at an early stage. Pap smear is a simple, safe, non-invasive and effective method for detection of pre-cancerous, cancerous and non-cancerous changes in the cervix. Many studies report that exposure to human papilloma virus (HPV), active sexual life, multiparity, hormonal contraception, genetic factors and smoking may contribute to the initiation of cervical cancer<sup>4,5</sup>. Cervical cancer screening programmes play an important role in the reduction of cervical cancer in developed countries<sup>6</sup>. Histopathologic examination is the gold standard. This correlation is also useful for continuous quality improvement, which is a must for many cytology laboratories, in particular, those laboratories that apply the Bethesda system in their diagnosis<sup>7,8</sup>.

### II. Aims & Objectives

The objective is to study the role of Pap smear in detecting premalignant and malignant lesions as well as non-neoplastic lesions of cervix and to determine the prevalence of various lesions.

### III. Material & Methods

A study of 300 Pap smears is performed from January 2014 to December 2015 in the Department of Pathology, Rama Medical College Hospital & Research Centre, Hapur. The Patients presented with complains such as bleeding per vaginum, leucorrhea, discharge and something coming out per vaginum etc. were selected for the study. With sterile Ayre's spatula cervical scrap smear was taken. Material smeared on a pre-labelled glass slide to form a monolayer thick smear. Immediately the slides were fixed with methanol. After drying, the slides were stained by rapid pap method.

### IV. Results

According to age group following results are found in total 300 cases taken.

TABLE 1: SHOWING AGE DISTRIBUTION OF CERVICAL LESIONS

Age group (years)	Inadequate	Normal	Inflammatory	Atrophy	ASCUS	LSIL	HSIL	AGUS	SCC
20-29	20	50	40		1				
30-49	10	30	50	4	2	3	2	1	1
50-59	2	10	20	8	1	1			

>60	2	10	15	15	2				
<b>total</b>	<b>34</b>	<b>100</b>	<b>125</b>	<b>27</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>1</b>

On cytology, 33.3% patients were normal smears, 11.3% had inadequate cytology and 9.0% showed atrophic changes 2.0% were ASCUS, 0.3% showed AGUS and SCC respectively whereas HSIL were 0.6 % and LSIL 1.3% .

### V. Discussion

Cancer cervix is considered to be an ideal gynaecological malignancy for screening as it meets both test and disease criteria for screening. It has a long latent phase during which it can be detected as identifiable and treatable premalignant lesions which precede the invasive disease and the benefit of conducting screening for carcinoma cervix exceeds the cost involved.<sup>9</sup>Conventional Pap smears were used throughout this study. During conventional Pap smearing, drying artifacts, inadequate fixations, background materials and thick smears are frequently present. In the present study 33.3% patients had normal smears, 11.3% had inadequate cytology and 9.0% showed atrophic changes 2.0% were ASCUS, 0.3% showed AGUS and SCC respectively whereas HSIL were 0.6 % and LSIL 1.3% .The results are comparable to those obtained by M S Bal et al<sup>12</sup> and Beinton *et al*<sup>13</sup>. Few studies have documented a lower prevalence rate for SIL and invasive carcinoma.

**TABLE 2: COMPARISON OF FINDINGS OF PAP SMEAR CYTOLOGY WITH OTHER STUDIES**

Name of lesion	Present study	Thomas et al (2002) <sup>10</sup>	Karuma et al (2003) <sup>11</sup>	M S Bal et al (2012) <sup>12</sup>	Beinton <i>et al</i> <sup>13</sup> (1986)
ASCUS (%)	0.3	15.3	6.0	0.3	6.9
LSIL (%)	1.3	14.1	7.0	2.7	8.4
HSIL (%)	0.6	5.8	5.0	0.7	2.6
SCC	0.3	-	-	1.3	2.6

### VI. Summary & Conclusion

Pap smear is a relatively less invasive and a simple procedure to diagnose cervical pre-malignant and malignant conditions in developing countries. But sometimes, there can be obscuring of the cellular details by blood, especially in malignant cases. In such cases, biopsy is helpful and confirmatory.

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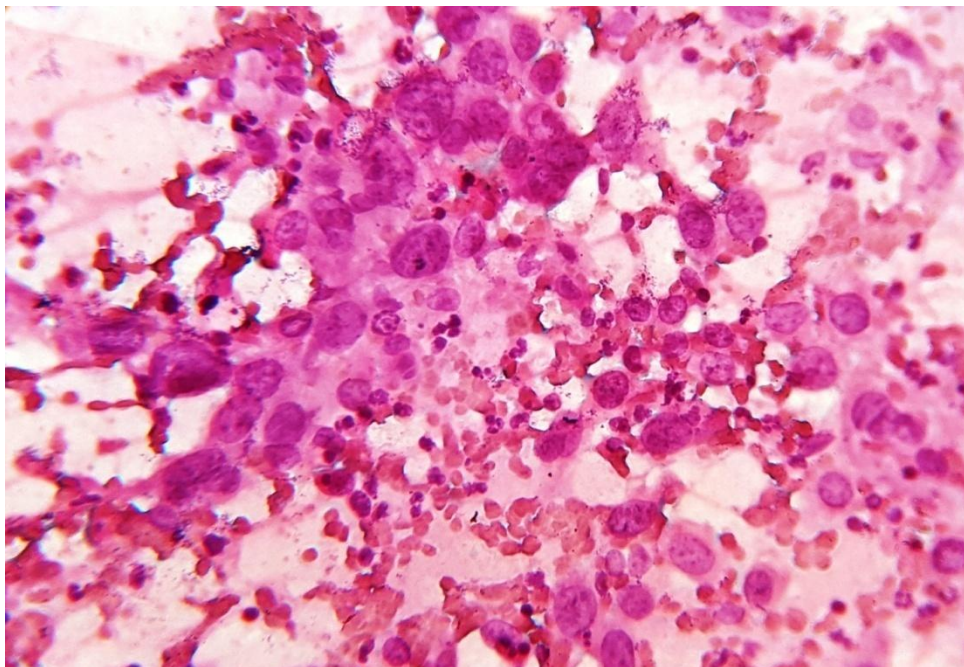


Figure 1: Photomicrograph of HSIL showing group of hyperchromatic parabasal cells exhibiting nucleomegaly and overlapping nuclei (Pap X 400)

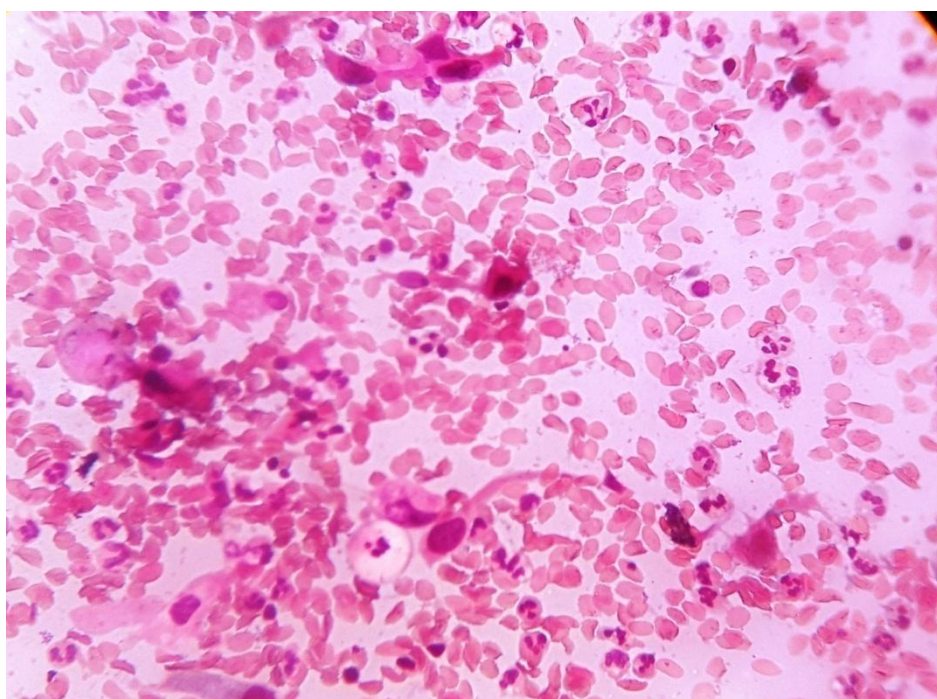


Figure 2: Photomicrograph of Squamous cell carcinoma showing tumour diathesis, malignant cells with nucleomegaly, hyperchromatism, irregular nuclear margins and strap cells (Pap X 400)