Original Article

# Study of abnormal cervical cytological smears in rural area

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## Abstract

**Aims and Objectives:** To study the application, scope and importance of cervical cytology in rural population **Material and Methods:** A prospective study of 1574 cases, coming from rural areas, was carried out in the department of Obstetrics and Gynecology, Swami Ramanand Teerth Rural Medical college, Ambajogai from May 2016 to April 2017. Cervical smears from all the cases were taken and examined**. Result:** In the study 1574 cases were studied, 383 cases were found to be abnormal pap smears in which 209(13.28%) cases were LSIL( low grade squamous intraepithelial lesion), 78(4.94%) cases were HSIL ( high grade squamous intraepithelial lesion ) and 32(2.03%) cases ASCUS (atypical squamous cells of undetermined significance ). **Conclusion:** The Pap test is a cytological test designed to detect abnormal cervical cells from cervical transformation zone. A strong relation is observed between initiating of screening and reduction in mortality from cancer of cervix

**Key Words:** Pap smear, LSIL (low grade squamous intraepithelial lesion), were HSIL (high grade squamous intraepithelial lesion) and ASCUS (atypical squamous cells of undetermined significance).

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## INTRODUCTION

World wide data shows that cervical cancer is the second most common cancer in women and commonest type of malignancy of the female genital tract in India[1]. Worldwide it is one of the major factors contributing to female morbidity and mortality[2]. Invasive carcinoma of cervix is preceded by epithelial changes in situ. With the advent of cytological techniques the technique of the intra epithelial changes have become focus of interest. Carcinoma cervix is always preceded by a series of transformation in epithelium, which are associated with varying degrees of nuclear abnormalities and disarrangement. These changes are commonly referred to as dysplasia, which is easily identified on cytology. In India 75% of the population is residing in rural areas. This population is at higher risk of developing cervical pathology due to practice of early marriages, multiparty, poor hygiene and low socio economic conditions. In India wide screening programs for detection of carcinoma of cervix for high risk population is the only way by which morbidity and mortality due to carcinoma of cervix can be reduced. Papanicolaou stained cervical smears (Pap smear) is a simple and highly effective procedure for the detection of premalignant cervical lesions[3,4]. The Pap test is a cytological test designed to detect abnormal cervical cells from cervical transformation zone[5]. The objective of screening program is not only to decrease the incidence of carcinoma cervix but also to detect them at an earlier stage. The success of cytological screening for carcinoma of cervix depends upon good technique of cytology, patients co-operation for follow up and treatment. The main advantage of cytological diagnosis and screening is its simple procedure of sample collection and its study without advanced technology. In our study we have done screening for early detection of carcinoma cervix in rural population were women are at a greater risk of developing carcinoma cervix.

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## MATERIAL AND METHODS

A prospective study of 1574 case, was carried out in department of Obstetrics and Gynecology, Swami Ramanand Teerth Rural Medical College, Ambajogai, from May 2016 to April 2017.Cervical cytological smears of all these cases were taken and examined. Criteria for selection of cases was

1. Presenting with complaints of chronic vaginal discharge, post coital bleeding,inter menstrual bleeding and chronic abdominal pain
2. Patients in whom per speculum examination revealed an unhealthy cervix, cervix erosion, cervical erosion and polyp
3. Cases diagnosed clinically as carcinoma cervix were excluded from the study.

Patients were examined thoroughly examined including general and systemic examination. Before doing Papsmear, it was confirmed that per vaginal examination, vaginal wash or douche was not done during last 24 hours. It was also made sure that they had not used used intra vaginal drugs preparations for the last week. Patients abstinence from coitusfor 1 day before Pap smear was confirmed. The smears were sent to pathology department for staining and reporting

## RESULTS

**Table 1:** Age wise distribution of smears

| Age | Cases | Percentage |
|---|---|---|
| <20 years | 38 | 2.41 |
| 21-30 years | 502 | 31.90 |
| 31-40 years | 678 | 43.08 |
| 41-50 years | 222 | 14.10 |
| >50 years | 134 | 8.51 |
| **Total** | **1574** | **100** |

In the study 1574 cases were studied in which the maximum cases who underwent Pap smear examination belonged to the age group of 31-40 years around 43.8%. Another major group undergoing Pap smear examination was of 21-30 years around 31.90%.

**Table 2:** Parity wise distribution of smears

| Parity | Cases | Percentage |
|---|---|---|
| Nil | 42 | 2.67 |
| 1 | 102 | 6.48 |
| 2 | 434 | 33.92 |
| 3 | 602 | 38.24 |
| 4 | 203 | 12.90 |
| >4 | 91 | 5.74 |
| **Total** | **1574** | **100** |

90.8% of women were multiparas.

**Table 3:** Findings of pap smear cytology

| Diagnosis | Number of cases | Percentage |
|---|---|---|
| Unsatisfactory for evaluation | 78 | 4.95 |
| Normal | 397 | 25.23 |
| Negative for intraepithelial lesion | 716 | 45.49 |
| ASCUS | 32 | 2.03 |
| LSIL | 209 | 13.28 |
| HSIL | 78 | 4.94 |
| Squamous cell carcinoma | 38 | 2.41 |
| AGCUS | 17 | 1.08 |
| AGCUS probably of neoplastic origin | 3 | 0.20 |
| Adenocarcinoma | 3 | 0.20 |
| Others :Granulosa cell tumor | 2 | 0.13 |
| Others :clear cell carcinoma | 1 | 0.06 |
| **Total** | **1574** | **100** |

In the study 1574 cases were studied, 383 cases were found to be abnormal pap smears in which 209(13.28%) cases were LSIL (low grade squamous intraepithelial lesion), 78 (4.94%) cases were HSIL (high grade squamous intraepithelial lesion) and 32 (2.03%) cases ASCUS (atypical squamous cells of undetermined significance). Out of 1574 cases 716 (45.49) were Negative for intraepithelial lesion. Squamous cell carcinoma was seen in 38 cases (2.41%). AGCUS probably of neoplastic origin along with adenocarcinoma was seen in 3 cases each (0.40%). Granulosacell tumor was reported in 2 cases (0.13%) while clear cell tumor was seen in 1 case (0.06%).

**Table 4:** Age wise findings of Pap smear cytology

| Age | ASCUS | LSIL | HSIL | SCC | AGCUS | AGCUS PROBABLY OF NEOPLASTIC ORIGIN | ADENOCARCINOMA | OTHERS | TOTAL NO. OF ABNORMAL FINDINGS | % |
|---|---|---|---|---|---|---|---|---|---|---|
| <20 | 02 | 4 | 01 | 0 | 2 | 0 | 0 | 0 | 9 | 0.58 |
| 21-30 | 08 | 42 | 09 | 0 | 10 | 0 | 0 | 1 | 70 | 4.45 |
| 31-40 | 14 | 52 | 18 | 7 | 5 | 2 | 1 | 0 | 99 | 6.28 |
| 41-50 | 07 | 87 | 24 | 4 | 0 | 1 | 0 | 0 | 123 | 7.82 |
| >50 | 01 | 24 | 26 | 27 | 0 | 0 | 2 | 2 | 82 | 5.20 |
| TOTAL | 32 (2.03%) | 209 (13.28%) | 78 (4.94%) | 38 (2.41%) | 17 (1.08%) | 3(0.20%) | 3(0.20%) | 3(0.19%) | 383 | 24.33% |

Among 678 cases in the age group of 31-40, 52 (7.66%) cases had LSIL, 18 (1.14%) cases HSIL, 14 (2.06%) cases ASCUS and 579 (85.40 %) cases were reported as negative for intraepithelial lesion. Of the total of 502(31.90%) cases in age group of 21-30 years, 42 (8.36%) cases were LSIL, 9 cases were HSIL (1.79%) and 432 reported as negative for intraepithelial lesion (86.06%).

## DISCUSSION

According to study done in India, by J Giftson Senapathy J *et al*, there is an estimated annual global incidence of 5, 00,000 cancers, in that India contributes 1, 00,000, i.e., one fifth of the world burden (Shanta, 2003)[6]. Cervical screening is necessary because the cervical precancerous lesions do not present with obvious signs and symptoms[6]. The incidence of cervical cancer has decreased more than 50% in the past 30years because of wide spread screening with cervical cytology [7.]

| Interpretation | Ranabhat SK *et al*.; (2011)[7] | Dhiraj B Nikumbh *et al*.; (2011)[8] | Present Study |
|---|---|---|---|
| Negative for intraepithelial al lesion | 98.29% | 94.20% | 45.49% |
| LSIL | 00.23% | 0.96% | 13.28% |
| HSIL | 00.68% | 1.98 | 4.94% |
| ASCUS | 00.23% | 0.96% | 2.03% |

The present study is compared with Ranabhat SK *et al*.; in 2011[7] and Dhiraj B Nikumbh *et al*.; in 2011[8]. According to the study by Ranabhat SK *et al*.; in 2011[7], 80% of the abnormal lesions were found in the age group above 40 years[7]. A study by Vaidya A *et al*.; in Kathmandu shows the maximum numbers of cases were in the age group 45-49 years [9.] The present study also showed that the abnormal lesions are more in the age group between 41-50 years. Our study showed that prevalence of abnormal smear, out of 383 positive cases; 123 (7.82%) cases belong to age group of 41-50 years, 99 (6.28%) cases belong to 31-40 years group. So prevalence of abnormal smear is quite high among the age group (41-50 years). The previous study by Ranabhat and Vaidya A were correlates with our study.

## CONCLUSION

In the study 1574 cases were studied, 383 cases were found to be abnormal pap smears in which 209(13.28%) cases were LSIL (low grade squamous intraepithelial lesion), 78 (4.94%) cases were HSIL (high grade squamous intraepithelial lesion) and 32 (2.03%) cases ASCUS (atypical squamous cells of undetermined significance) Papanicolaou stained cervical smears (Pap smear) is a simple and highly effective procedure for the detection of premalignant cervical lesions. The Pap test is a cytological test designed to detect abnormal cervical cells from cervical transformation zone. A strong relation is observed between initiating of screening and reduction in mortality from cancer of cervix.

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