



## Original Research Article

## Evaluation of spectrum of cervical lesions by PAP smear in rural medical college



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### ARTICLE INFO

#### Article history:

Received 27-07-2019

Accepted 01-08-2019

Available online 20-09-2019

#### Keywords:

Awareness

Cervical cytology

Rural population

### ABSTRACT

**Introduction:** Heart of India lies in the rural population and health care systems are reaching many of these rural areas. But still in some of the Indian rural population, measures of health and living standards are low. Rural women are also vulnerable to many risk factors. The incidence of premalignant lesions of cervix may be higher due to these risk factors. Pap smear is the best and economical screening method for detection of cervical premalignant lesions.

**Objective:** To understand the spectrum of lesions and prevalence of precancerous lesion in one of the rural areas in Maharashtra

**Materials and Methods:** All pap smears received in the Department of Pathology, Indian Institute of Medical Science and Research, Warudi, Maharashtra from January 2018 to May 2018 are evaluated and the findings are correlated with age.

**Results:** Out of the 252 cases that were studied, 4.76% of cases (n=12) showed epithelial cell abnormality. 85.7% of cases (n=216) were Negative for Intraepithelial Lesion or Malignancy in which 33.7% cases (n=85) showed inflammation. 8.3% cases (n=21) showed the presence of an organism

**Conclusion:** Pap smear test is the simplest, painless and cost-effective screening tool for cervical cancer. Awareness is needed among the rural population about this gold standard test for cervical cancer screening.

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### 1. Introduction

According to world population review, 67% of Indian population lives in rural area.<sup>1</sup> The measures of health and living standards are low in rural areas and the rural women are vulnerable to many risks which make them prone to develop premalignant lesions of the cervix. Rural woman tend to marry early and have more children than urban Indian women.<sup>2</sup> According to NFHS 4(2015-16), percentage of women in India having age 15-19 years and who were already mothers or pregnant at the time of the survey is 9.2% in the rural compared to 5% in the urban area.<sup>3</sup> The percentage in rural Maharashtra is 10.4% and in Jalna district is 23.5% .<sup>4,5</sup> Traditional reluctance among rural women to seek medical assistance, especially for gynaecological diseases also increases their vulnerability to infection and disease.

Cancer of the cervix has a long pre-invasive stage and because of that, cancer of the cervix is a preventable disease. It takes approximately 10 to 20 years for cervical cancer to develop after mild dysplasia is identified.<sup>6</sup> If there is a screening method that is effective in recognising the preinvasive stage of the lesion, then the disease process can be detected early and appropriate treatment can be given.<sup>7</sup> Pap smear is the most efficient and cost-effective screening technique that can be used as the primary screening method for identifying intraepithelial neoplasms of the cervix. Pap smear has a sensitivity of 70.80% in identifying high grade squamous intraepithelial lesion.<sup>8</sup> Developed countries have brought down the prevalence of cervical cancer because of effective screening methods.

The reason that can be attributed to ineffective screening, especially in the rural areas is the lack of awareness among women regarding cervical cancer, availability of screening methods and ease of access to these screening methods. Cervical screening awareness programmes must

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be conducted, and women have to be educated and motivated to visit nearest facility that are offering screening techniques. The factors that prevent from availing screening methods maybe the following: lack of awareness regarding the availability of a screening technique, difficulty in having access to health facility, prejudice that there is discomfort in screening, fear whether they will be diagnosed of cancer and logistics issues related to their work profile.<sup>9</sup> If these factors can be addressed, then the rate of screening for cervical neoplasm can be increased.

The primary aim of cervical Pap smear is the detection of low grade and high-grade intraepithelial neoplasm. Pap smear also gives details about the hormonal status of the patient to some extent,<sup>10</sup> presence of organisms,<sup>11</sup> cervicitis and metaplastic change. According to cytopathologist Dr. Rajendiran, pap smear primarily is a screening test for cervical intraepithelial neoplasia and all other diagnosis from the Pap smear slide is a bonus. This bonus diagnosis is helpful, especially in the rural setting where availability of recent techniques is limited, and more information is always useful from whatever diagnostic material is available.

The present study was aimed at finding the spectrum of lesions seen in the rural population of Maharashtra and to correlate the findings with the age group of the patient.

## 2. Materials and Methods

This is a retrospective study on the Pap smears received in the Department of Pathology, Indian Institute of Medical Science and Research, Warudi, Maharashtra. 252 cases that were received during January to May 2018 were taken for this study. After placing the patients in lithotomy position, cervix is visualised using sterile bivalve speculum. Samples were obtained from cervix using Ayer's spatula. The material was immediately spread on a clean glass slide and fixed with 95% ethyl alcohol. The slides were stained with Papanicolaou stain and were reported according to the new Bethesda System of Reporting Cervical Cytology 2014

## 3. Results

Total of 252 cases were studied. 4.76% of cases (n=12) showed epithelial cell abnormality. 85.7% of cases (n=216) were Negative for Intraepithelial Lesion or Malignancy in which 33.7% cases (n=85) showed inflammation. 8.3% cases (n=21) showed the presence of an organism. 4.3% (n=11) had trichomonas vaginalis infestation, 1.6%(n=4) had candida infection and 2.9% cases (n=6) showed shift in flora suggestive of bacterial vaginosis (Figure 1).

## 4. Discussion

Till today, Pap test is the most simple, painless and cost-effective screening tool that has reduced the cervical cancer mortality (Pre pap: 14 per 100,000. Post pap: 4 per 100,000).<sup>12</sup> Though this is true, the awareness regarding the

pap smear among the population is very low. The standard recommendation for Pap test screening is to get the test done every 3 years. This doesn't happen especially in rural areas where people are not aware of the availability of such tests. Giving posters and hand-outs, or using mass media, awareness must be created in the rural population.

In the present study, 112 cases were between the age group of 21-30 years with an average age of 26.6 years. 83 cases were within the age range of 31-40 years with an average age of 37.1 years. 42 cases from 41-50 years of age with an average age of 46.8 years. 15 cases above 50 years with an average age of 62.2 years.

In this study, 4.76% of cases showed epithelial cell abnormality. This is less when compared to other studies which showed epithelial cell abnormality of 8.48% (Sachan *et al*)<sup>13</sup> and 9.05%(Study in United Arab Emirates by Al Eyd *et al*).<sup>14</sup> Among these cases, 41.67% of cases belonged to the age group of 30-39 years. This data is comparable with the data obtained by Gupta *et al*<sup>15</sup> where 40.37% cases having epithelial abnormality belonged to the age group 30-39 years. The average age for epithelial abnormality was 44.8 years which is lower when compared to the study by Vaghela *et al*<sup>16</sup> where the average age was 49 years.

Among the cases of epithelial cell abnormalities, 1.98% cases (n=5) were reported as ASCUS (Table 1). This is almost similar to the study conducted by Verma *et al*<sup>17</sup> whose study had 1% cases reported as ASCUS. Few other studies like Sachan *et al*<sup>13</sup> and Padmini *et al*<sup>18</sup> where the rates of ASCUS were 2.9% and 8% respectively. 1.19% of cases (n=3) were reported as LSIL (Table 1). This is less in comparison with studies by Sachan *et al*<sup>13</sup> and Padmini *et al*<sup>18</sup> who reported 5.09% and 5% respectively. HSIL was reported in 0.4% cases (n=1) (Table 1) which is same when compared to the study by Sachan *et al*<sup>13</sup> who reported 0.48% in her study. But various other studies like Nayani *et al*<sup>19</sup> and Verma *et al*<sup>17</sup> showed higher rates of HSIL with 3.8% and 5.5% respectively.

51.98% of cases subjected to the present study were negative for malignancy which is in par with the study conducted by Sachan *et al*<sup>13</sup> whose study showed 48.84% cases which were negative for malignancy. Our study also showed that 33.73% had inflammation which is less compared to the study by Sachan *et al*<sup>13</sup> where the number of cases with inflammation was 42.66% and Parimala *et al* where the number of cases with inflammation were 47.05%.<sup>20</sup>

This study included 24 cases which were unsatisfactory for evaluation of epithelial abnormality which accounted for 9.5% of cases Table 1. Majority of these cases (62.5%) were unsatisfactory due to the presence of inflammatory cells and haemorrhage obscuring the field and these were more commonly reported in younger age with an average age of 35.3%. Rest of the cases were unsatisfactory due to the absence of sufficient squamous component. This

was seen more towards older age group (Average age 43.2) and the reason can be reducing levels of oestrogen leading to atrophy. In other similar studies the percentage of unsatisfactory cases were 6.42%<sup>13</sup> and 4.8%.<sup>16</sup>

Organisms were identified in 8.33% of cases (n=21) out of which, 4.36% were Trichomonal vaginitis (n=11), 1.59% were Candida infection (n=4) and 2.38% were bacterial vaginosis (n=6). This is less when compared to a similar study conducted in rural Tamil Nadu by Parimala *et al*<sup>20</sup> where trichomonal vaginitis were 14.7%, Candida infection were 17.65% and bacterial vaginosis were 14.7%. Candida infection was seen in younger age group with an average age of presentation at 22.5 years. Trichomonal vaginitis was seen at an average age of 34.4 years. Bacterial vaginosis was seen at an average age of 42.67 years. This is comparable with the study conducted by Guducu *et al*<sup>21</sup> where Trichomonas vaginalis was seen more in postmenopausal woman.

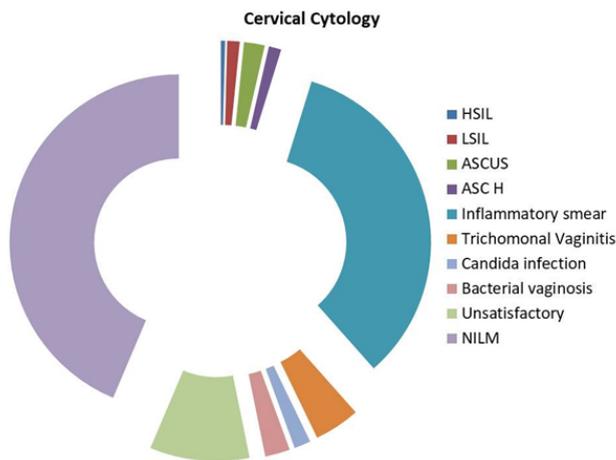


Fig. 1:

Table 1:

Diagnosis	Number of Cases (Total = 252)
HSIL	1(0.4%)
LSIL	3(1.19%)
ASCUS	5(1.98%)
ASC H	3(1.19%)
Inflammatory smear	85(33.73%)
Unsatisfactory	24(9.5%)
NILM	131(51.98%)

## 5. Conclusion

Pap smear test is the simplest, painless and cost-effective screening tool for cervical cancer. Low detection rate of epithelial cell abnormality and less rate of inflammation may be due to a smaller number of individuals turning up for pap smear test and this may be due to lack of awareness

among the rural population. Awareness is needed among the rural population about this gold standard test for cervical cancer screening.

## 6. Acknowledgment

We sincerely thank hon. Dean Dr. A. B Solepure and the Head of the Department of Pathology Dr. K. S. Bhople for their constant support and guidance.

We hold in high regard the expert help extended by the Assistant Professors of Department of Pathology: Dr. Piyush Narkhede, Dr. Rahul Jadhav and Dr. Sheetal Mahajan. We also appreciate the aid provided by the technicians Prasant Chavan and Azhar Quadri.

## 7. Source of Funding

None.

## 8. Conflict of Interest

None.

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**Cite this article:** Cherian DM, Patil AS, Bhople KS. Evaluation of spectrum of cervical lesions by PAP smear in rural medical college. *J Diagn Pathol Oncol* 2019;4(3):166-169.