



## Prevalence of abnormal Pap smear in pregnant women attending the antenatal clinic in Dr S N Medical college and attached hospitals, Jodhpur

### KEYWORDS

Prevalence, abnormal Pap smear, pregnant women, carcinoma cervix, Bathesda classification

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### ABSTRACT

**Background:** Worldwide carcinoma cervix is the most common cancer after carcinoma breast. Most cervical cancers are preventable. 1 in 100 women will develop cervical cancer by age of 75. PAP smear being most sensitive and specific screening test reducing mortality and morbidity, can be used to identify early changes in cervix during pregnancy.

**Aims & objective:** 1) To detect abnormal pap's smear in pregnant patients. 2) To study the epidemiological profile. 3) To identify the risk factors.

**Material & Methods:** A cross-sectional study involving patients attending OPD for regular antenatal check-up was carried out in antenatal clinic of Dr S N Medical College and attached hospitals, Jodhpur during time duration October 2015-March 2016. The data was obtained using a questionnaire. Conventional Pap smears were taken. The cytological results were reported based on the Bethesda classification system 2001.

**Results:** Total 200 women participated in the study. 6 patients out of 200 were found to have abnormal Pap smear. Prevalence of abnormal Pap smear was 3%. Maximum number of patients with cervical dysplasia belonged to age group 30-35 years, with low socio-economic status, low level of education, women who had sexual intercourse before 20 years, and in multiparous women.

### INTRODUCTION

Cervical cancer is one of the most common malignancies among females, worldwide<sup>1</sup> Invasive cervical cancer is considered to be a preventable disease because it has a long pre-invasive state, and the implementation of a screening programme can do much to reduce the incidence and mortality rates. However, up to 60% of cervical cancer cases in developing countries have never been screened<sup>2</sup>.

The highest rate of cervical abnormality occurs in women of reproductive age and the goal of screening is to identify a pre-invasive lesion to prevent the abnormality from progressing to an invasive state. Pregnancy provides an opportunity for women of a reproductive age to meet an obstetrician and discuss their health concerns, and prenatal care offers an excellent opportunity to implement cervical screening in patients of a young age<sup>3</sup>.

A conventional Pap smear is the standard method for cervical cancer screening. It poses no risk to the fetus and is not associated with an increased rate of miscarriage or preterm labor. Although cytology specimens are more difficult to interpret in pregnancy because of hormonal changes, a Pap test seems able to demonstrate the equivalent accuracy in both pregnant and non-pregnant women<sup>4</sup>.

Cervical cancer screening is recommended for pregnant women as an essential component of pre-natal care in many developed countries. Pap smears are generally done at the first prenatal visit in many developed countries, such as the United States, and although this is considered to be necessary, safe and acceptable for a routine prenatal test, it is still challenged in India.

1, 32,000 women in India are diagnosed with cervical cancer and 74,000 die from the disease each year. It is the most common cancer affecting Indian women. India contributes 1/3 of the global cervical cancer deaths<sup>5</sup>.

This study aims to determine the prevalence of abnormal Pap smears implemented by the conventional technique in pregnant women who attend the antenatal care clinic of MDM Hospital, Jodhpur.

### Material & methods:

It was a cross sectional study involving patients attending OPD for regular antenatal check-up.

The study was carried out in antenatal clinic/OPD Dr. S. N. Medical College and attached hospitals during time duration October 2015-March 2016. 200 pregnant women were selected by convenience sampling technique.

### Inclusion Criteria:

Study included all cases attending OPD whether booked or unbooked, term or pre-term.

### Exclusion Criteria:

- Women with history of threatened abortion in present pregnancy.
- Pregnant women not willing for Pap smear.

The purpose of the study was explained to the patients and informed consent was obtained. Data was collected using a pretext proforma which included the information regarding patient's age, caste, socio-economic status, gravida status, age at marriage, age at first intercourse, addiction history for smoking, alcohol or tobacco, and knowledge of vaccination against HPV, any significant complaints as white discharge, post-coital bleeding or irregular bleeding, any significant family history of malignancy.

Pap smear was taken with patient in dorsal position. Using Cusco's speculum cervix visualised and scrapings from squamo-columnar junction were obtained using cytobrush for endocervix and Ayre's spatula for ectocervix with 360° swipe. Scrapings were evenly spread over glass slide and immediately fixed with 95% ethyl alcohol for 30 min and stained with Papanicolaou stain.

The cytological results were reported based on the Bethesda classification system 2001.

Group I - Normal smears/ inflammatory cells

Group II - ASCUS

Group III - Low SIL

Group IV - High SIL

Group V - Squamous cell carcinoma

The statistical analysis of the data consisted of percentage and mean and a Chi-square test was used to find any association between

categorical variables.

### Results:

Total 200 pregnant women participated in the study. Majority (34%) of them belonged to the age group 25-30 years. Mean age at marriage was 17.7 years. Maximum no of women (46%) had their first intercourse at the age below 20 years. Majority of them were gravida 2 or more (95%), only 10 patients were primigravida.

Abnormal Pap smears were found in 6 of the 200 participants. The prevalence of abnormal Pap smears was 3%, 4 of which were cases of ASCUS (2%) and 2 of LSIL (1%).

**Table 1: The result of Pap's smear from 200 pregnant women**

Result	Number (%)
Normal/Inflammatory	194 (97%)
ASCUS	4 (2%)
LSIL	2 (1%)
HSIL	0 (0%)
SCC	0 (0%)

The study showed that maximum number of patients with cervical dysplasia belonged to the age group 30-35 years (66.66%), High incidence of cervical dysplasia was seen in women from low socioeconomic status (50%) and who had 3 or more issues.

**Table 2: Age Distribution Of Patients With Cervical Dysplasia**

AGE DISTRIBUTION	NUMBER OF PATIENTS	PATIENTS WITH CERVICAL DYSPLASIA
15-20 yrs	29	0
20-25yrs	42	0
25-30yrs	68	1 (16.66%)
30-35yrs	54	4 (66.66%)
>35yrs	7	1 (16.66%)

**Table 3: Distribution On The Basis Of Socio-Economic Status**

SOCIO-ECONOMIC STATUS	NUMBER OF PATIENTS	PATIENTS WITH CERVICAL DYSPLASIA
1	23	1 (16.66%)
2	27	0 (0%)
3	42	1 (16.66%)
4	46	1 (16.66%)
5	62	3 (50%)

**Table 4: Distribution On The Basis Of Number Of Children**

NUMBER OF CHILDREN	NUMBER OF PATIENTS	PATIENTS WITH CERVICAL DYSPLASIA
0	10	0
1-2	86	1 (16.66%)
3-4	73	2 (33.33%)
>4	31	3 (50%)

It was found in our study that incidence of cervical hyperplasia was higher in those who were illiterate or primarily educated. Also those who had first intercourse before 20 had higher incidence of cervical dysplasia.

It was found in the study that family history and OCP usage does not play major role in cervical cancer.

The study revealed considerable lack of awareness about vaccination against HPV, only one patient was aware of the vaccine against HPV. Majority of women had not heard of Pap's Test, only 4 women had knowledge about Pap's test.

### Discussion:

The prevalence of abnormal Pap smear in pregnancy is dependent on the population undergoing screening and could be as high as 5-8%<sup>6</sup>. Pregnancy creates an important opportunity to screen the cervix for neoplastic and infectious diseases, and pick up the disease in early stage will increase<sup>1</sup>. In our study 3% of the screened pregnant women showed abnormal Pap test result. Meena Priyadhashini V et al found abnormal Pap test in 1% of pregnant women studied where 0.5% of the smear showed abnormality and diagnosed as ASCUS which is low as compared to our study<sup>7</sup>. Comparably Vural et al. found ASCUS in 1.55% of the pregnant women screened<sup>8</sup>. This present study found that the prevalence of an abnormal Pap smear in pregnant women is much higher than in past studies that used the same conventional technique. This indicates an increasing rate of abnormal cervical cytology, which will lead to an increase in incidence of invasive cancer without an adequate screening programme.

The Pap smear should be performed at the first prenatal visit regardless of the duration of pregnancy to establish the presence or absence of SIL, STD, and BV, all of which represent a risk to the fetus and the mother. This initial smear will establish a baseline diagnosis and can be followed up accurately throughout pregnancy by repeated Pap smears<sup>12,13</sup>. Although pregnancy does not significantly alter the rates of false-negative results in general, several common physiologic changes associated with pregnancy can cause difficulties in interpretation of a Papanicolaou smear<sup>14</sup>. Examples of these effects include the increasing levels of estrogen and progesterone which lead to hyperplasia of the cervical glands that creates mucus plug. This endocervical mucus becomes thick and tenacious in pregnancy coupled with an increase in vaginal secretions overall, visibility of the cervix may be hampered<sup>15</sup>.

Pregnancy creates an important opportunity to screen the cervix for neoplastic and infectious diseases, and also to spread awareness.<sup>9</sup> Studies report that 10%-70% of dysplasia cases diagnosed during pregnancy regress and sometimes even disappear postpartum, while persistence in the severity of cervical neoplasia is reported in 25%-47% of cases and progression in 3%-30% of cases.<sup>9</sup>

Conducted studies prove that cervical cytology conducted during pregnancy is as reliable as those conducted when the individual is not pregnant (Vural et al., 2004). As discussed above, pregnancy provides an opportune time for screening. A Norwegian study showed that Pap smear screening during pregnancy increases the coverage of the cervical cancer screening programme<sup>10</sup>.

The management of the pregnant patient should be based on the results of cytology, and colposcopy and biopsies. If an invasive tumor is excluded after cytology, and colposcopy and biopsy, no treatment is performed during pregnancy, and the treatment is postponed after delivery following a complete cervical reevaluation. If an invasion cannot be excluded with the biopsy; a diagnostic conization completed with a cerclage should be performed. This procedure should be exceptionally performed<sup>11</sup>.

### Conclusion:

High incidence of cervical cancer was seen in the age group 30-35 years, women with low socioeconomic status, low level of education, multi-parity and early intercourse (before 20 yrs of age). There was gross lack of awareness regarding screening programmes and HPV vaccination. In conclusion, our study proved that the PAP smear test is reliable as a prenatal screening test. Visits for antenatal check-ups by women are a potential opportunity to perform this test and educate & counsel them regarding the significance of screening. Present study has highlighted this fact and proved they are very receptive during antenatal period. In addition helps in identifying and treating infections that could play a role of cofactor in the pathogenesis of cervical carcinoma. Clinicians should make every effort to educate, counsel and screen pregnant women if they have not had a Pap test in the past. In a country like India where organized screening programmes are not available, as well as the awareness

and uptake of available services by the target population is also poor, screening in pregnancy is worthwhile and may be a viable option to reduce the burden of cervical carcinoma. The way of integrating cervical cancer screening and treatment services into the existing women's health care system is critical in the environments with limited resources.

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