

CYTOLOGY OF UTERINE CERVIX BY PAP SMEAR: A STUDY FROM SOUTH INDIAPreetha George¹, Sumathy Rao²**HOW TO CITE THIS ARTICLE:**

Preetha George, Sumathy Rao. "Cytology of Uterine Cervix by Pap Smear: A Study from South India". Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 63, November 20; Page: 13796-13803, DOI: 10.14260/jemds/2014/3846

ABSTRACT: BACKGROUND: Cervical cancer is the most common form of cancer in women in developing countries and the second most common form of cancer in women in the world as a whole. Three quarters of these women who develop CA Cervix live in developing countries. The dramatic reduction in the incidence of cervical cancer in developed countries is because of wide use of an effective cytological screening test, the Papanicolaou smear which can identify the pre-invasive forms of cervical neoplasia. **OBJECTIVE:** A prospective study to find out the prevalence of cervical intra epithelial lesion in women of reproductive age group. **SETTINGS:** 1000 women attending a teaching hospital in South India are studied for a period of one & half years. Pap smear was taken from them and were reported as per the Bethesda System of classification. **RESULTS:** Papanicolaou smear of 1000 patients were reported. Normal smears were seen in 39.9%, inflammatory smears in 53.1%. Intra epithelial lesions were found to be 3.5%. Low grade squamous intra epithelial lesions in 2%, High grade squamous Intra epithelial lesion in 0.9%. ASCUS 0.3% AGCUS 0.3%, Squamous cell carcinoma 0.3% Adeno Carcinoma 0.1%.

KEYWORDS: Papsmear, Bethesda System, Cytology.

INTRODUCTION: Worldwide cervical carcinoma continues to be a significant health care problem. In developing countries where limited health care resources exist, cervical carcinoma remains a significant cause of mortality. It is expected that up to 5, 00, 000 new cases of invasive cancer of cervix occur per year of which India constitutes 1, 00, 000 that is 1/5th of world burden. According to WHO report, globally, cervical cancer comprises 12% of all cancer in women⁽¹⁾ and it is the leading gynecological malignancy in the world. The impact of control measures in India will substantially reduce the global burden. The number of maternal death and cervical cancer cases is almost equal in India. (WHO 2008). There is considerable awareness, advocacy and investment to reduce maternal deaths among policy makers, Govt & professional organization. Paradoxically there is very little awareness regarding cervical cancer, as a threat to the health of middle aged women in the most reproductive period of their life.⁽¹⁾

Cervix is composed of columnar cells which line the endocervical canal and squamous cells which cover the ectocervix. The point at which they meet is known as squamocolumnar junction. In neonates the squamocolumnar junction is located on the exocervix. At the time of menopause the metaplasia advances from the original squamocolumnar junction inward towards the external os and over the columnar villi. This process establishes an area called as transformation zone and it's this area where screening is done. Cervical cancer is recognized as a slowly progressive locally invasive disease which is preceded by dysplastic changes in the cervical epithelium. The pap test has been successful in reducing the incidence of cervical cancer by 79% and the mortality by 70 %.⁽²⁾

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The various degree of cervical intra epithelial neoplasia ranging from Low grade squamous intraepithelial lesion to High grade squamous Intra Epithelial lesions precede invasive cancer. Once these pre-cursor lesions have been identified by cytology, further progress of the disease can be prevented by simple therapeutic maneuvers and continued follow up. Thus cytological screening for early diagnosis of pre invasive lesions makes cervical cancer a preventable disease.

MATERIALS & METHODS: This study was conducted in Government Lady Goschen Hospital Mangalore. Subjects included in this study were 1000 patients attending the Gynaec OPD.

Inclusion Criteria:

1. Age group should be between 18-50 years.
2. On Per-speculum examination there should be no gross evidence of carcinoma cervix.

Exclusion Criteria:

1. Active vaginal Bleeding
2. Diagnosed case of carcinoma cervix
3. Clinical evidence of acute infection.

Patients were put in dorsal position. A per speculum examination was done without using lubricants & naked eye examination of cervix was done. Cervical smear was taken using Ayre's spatula. Smear is made by spreading the scraped material evenly on a glass slide and fixed with 95% ethanol. Smears were stained by modified Papanicolau stain. The smears were reported as per the 1991 Bethesda System.

OBSERVATION & RESULTS

DEMOGRAPHIC DATA OF THE PATIENTS:

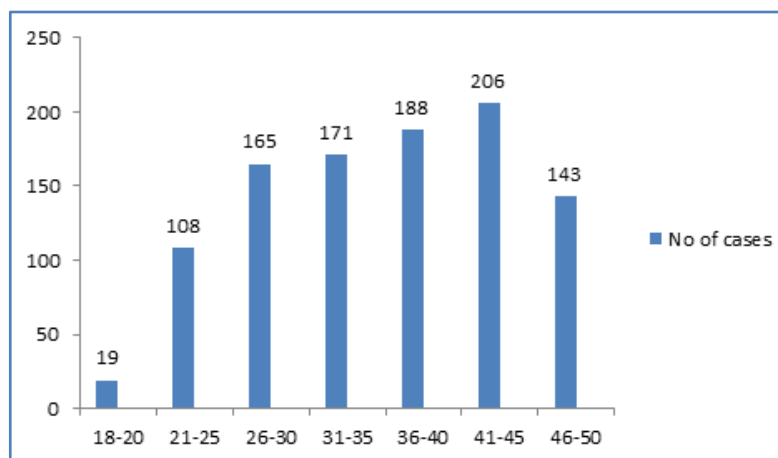


FIG. 1: AGE WISE DISTRIBUTION OF PATIENTS

Maximum numbers of cases were in the 41-45 age groups.

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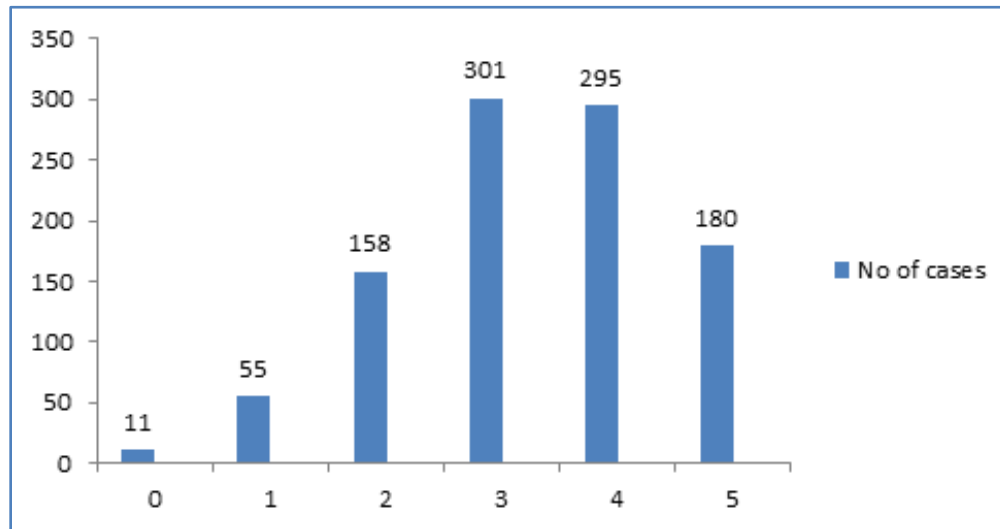


FIG. 2: PARITY OF THE PATIENTS

The maximum numbers of cases were multigravidas.

SYMPTOMS OF THE PATIENTS:

| Complaint | No of Patients | Percentage |
|--------------------------|----------------|------------|
| Discharge P/ V | 184 | 18.4% |
| Menstrual irregularity | 116 | 11.6% |
| Mass P/v | 118 | 11.8% |
| IUCD user | 40 | 4% |
| Back/Abdominal pain | 90 | 9% |
| Infertility | 27 | 2.7% |
| UTI | 12 | 1.2% |
| Post-Menopausal Bleeding | 58 | 5.8% |
| Foul smelling discharge | 45 | 4.5% |
| Antenatal | 88 | 8.8% |
| Sterilization | 30 | 3% |
| Post natal | 28 | 2.8% |
| Others | 35 | 3.5% |

TABLE 1

The maximum number of patients presented with complaints of discharge P/ V.

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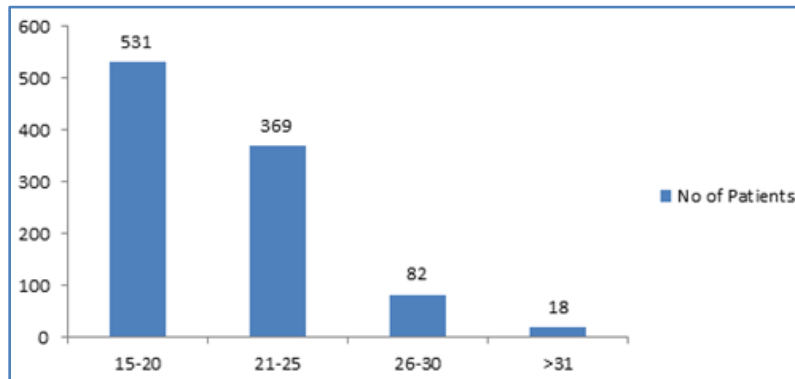


FIG 3: Age at marriage of patients n=1000

Maximum number of patients got married between 15-20 years.

PER-SPECULUM EXAMINATION FINDINGS OF THE CERVIX:

| P/S Examination of Cervix | No of patients | Percentage |
|---------------------------|----------------|------------|
| Healthy | 442 | 44.2% |
| Erosion | 336 | 33.6% |
| Bleeds on touch | 20 | 2% |
| Polyp | 11 | 1.1% |
| Hypertrophied | 191 | 19.1% |

TABLE 2

Maximum number of patients had normal cervix.

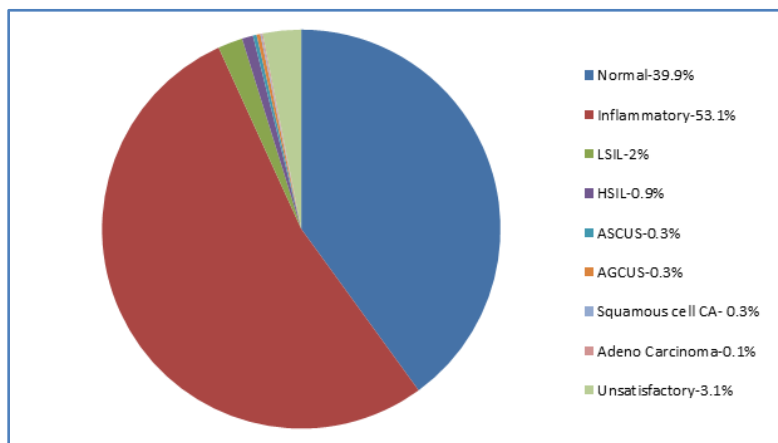


FIG. 4: SMEAR REPORT OF THE 1000 PATIENTS

PREVALENCE OF INTRA-EPITHELIAL LESIONS WERE 3.5%

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CERVICAL EPITHELIAL ABNORMALITIES IN RELATION TO AGE:

| Age | Number of cases | LSIL | HSIL | ASCUS | AGCUS |
|-------|-----------------|------|------|-------|-------|
| 18-20 | 19 | | | | |
| 21-25 | 108 | | | 1 | 1 |
| 26-30 | 165 | 3 | | | |
| 31-35 | 171 | 4 | | | |
| 36-40 | 188 | 6 | 3 | 1 | |
| 41-45 | 206 | 4 | 2 | | 1 |
| 46-50 | 143 | 3 | 4 | 1 | 1 |

TABLE 3

Maximum number of patients with LSIL is in age group of 36-40.

Maximum number of patients with HSIL is in the age group of 46-50.

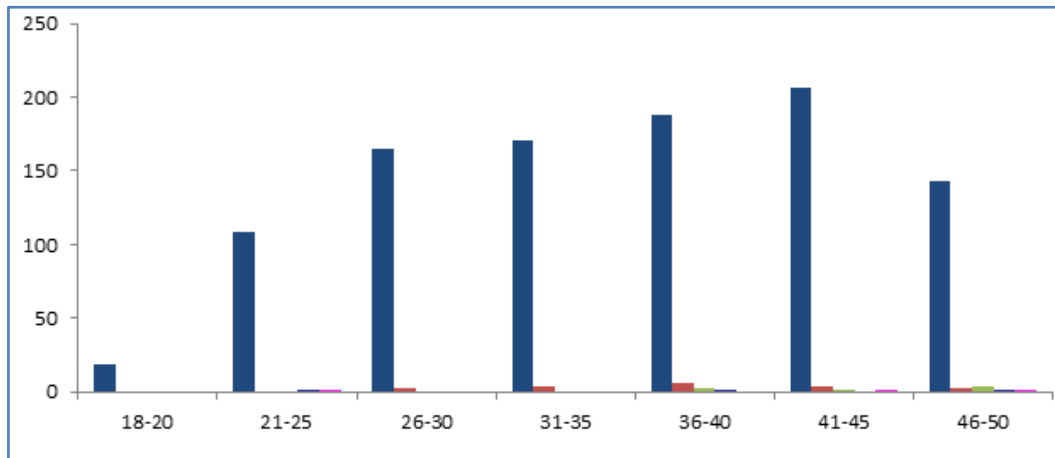


FIG. 5: CERVICAL EPITHELIAL ABNORMALITIES IN RELATION TO AGE

EPITHELIAL ABNORMALITIES IN RELATION TO PARITY:

| Parity | Number of cases | LSIL | HSIL | ASCUS | AGCUS |
|--------|-----------------|----------|----------|----------|----------|
| 0 | 11 | | | | |
| 1 | 55 | 1(1.8%) | | | |
| 2 | 158 | 3(1.89%) | | 1(0.63%) | 1(0.63%) |
| 3 | 301 | 8(2.65%) | 1(0.33%) | 1(0.3%) | |
| 4 | 295 | 5(1.7%) | 5(1.69%) | 1(0.33%) | 2(0.67%) |
| 5&>5 | 180 | 3(1.66%) | 3(1.66%) | | |

TABLE 4

All the squamous intra epithelial lesions are seen in multiparous patients.

$X^2=7.2$ $P < 0.05$ $df=1$

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FIG. 6: CERVICAL EPITHELIAL ABNORMALITIES IN RELATION TO SYMPTOMS OF THE PATIENTS

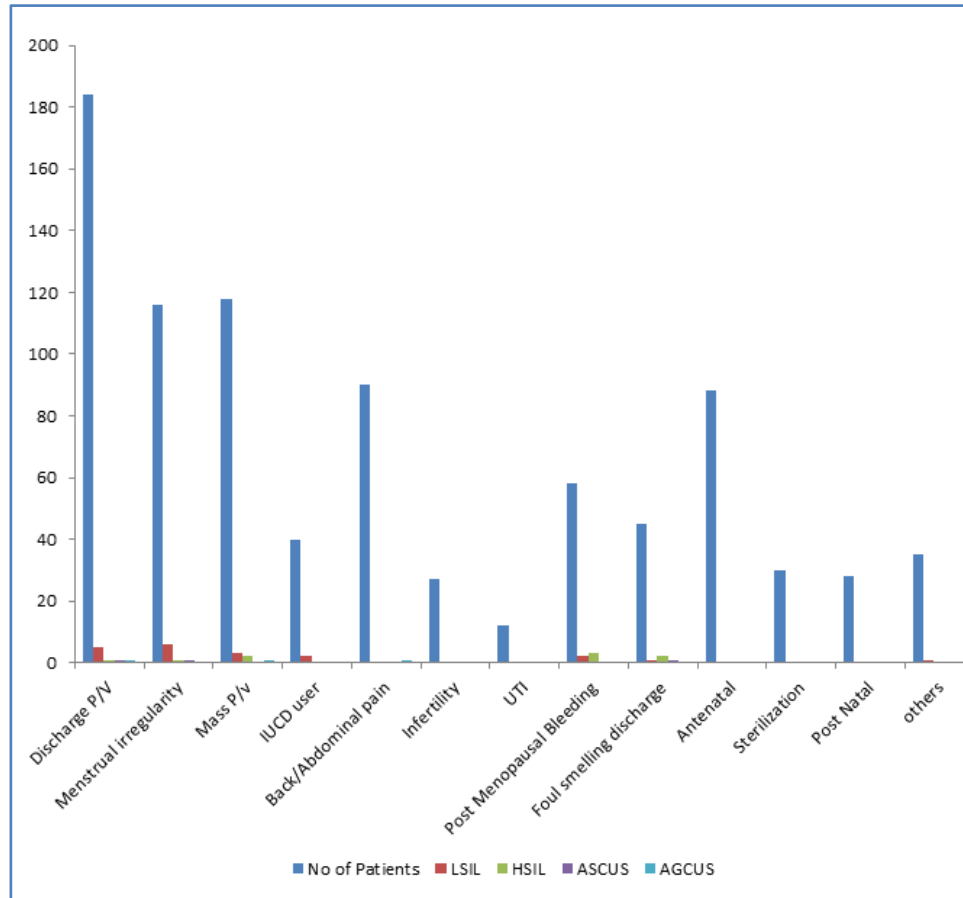


FIG. 6

Maximum number of patients with LSIL presented with complaints of menstrual irregularity.
 Maximum number of patients with HSIL presented with complaints of post- menopausal bleeding.
 Maximum number of patients with SCUS presented with foul smelling discharge.
 Maximum number of patients with AGCUS presented with Back/Abdominal pain.

CERVICAL EPITHELIAL ABNORMALITIES IN RELATION TO AGE AT MARRIAGE:

| Age at marriage | Number of patients | LSIL | HSIL | ASCUS | AGCUS |
|-----------------|--------------------|------------|----------|----------|----------|
| 15-20 yrs | 531 | 15(2.82 %) | 6(1.12%) | 2(0.31%) | 2(0.37%) |
| 21-25 yrs | 369 | 4(1.08%) | 3(0.81%) | | 1(0.27%) |
| 26-30 yrs | 82 | 1(1.21%) | | 1(1.21%) | |
| >31 yrs | 18 | | | | |

TABLE 5

Cervical Epithelial Abnormalities occurs maximum in patients who got married between 15-20 years.

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CERVICAL EPITHELIAL ABNORMALITIES IN RELATION TO PER SPECULUM EXAMINATION OF CERVIX:

| Sign | Number of patients | LSIL | HSIL | ASCUS | AGCUS |
|--------------------|--------------------|-----------|----------|----------|----------|
| Healthy | 442 | 10(2.26%) | 2(0.45%) | 2(0.45%) | 1(0.22%) |
| Erosion | 336 | 6(1.78%) | 3(0.89%) | 1(0.29%) | 2(0.59%) |
| Bleeds on Touch | 20 | | 1(5%) | | |
| Polyp | 11 | | | | |
| Hypertrophied | 191 | 4(2.09%) | 3(1.57%) | | |

TABLE 6

Maximum number of patients with LSIL had normal cervix.

Maximum number of patients with HSIL had hypertrophied cervix.

DISCUSSIONS: Bethesda System for reporting the results of cervical cytology will provide a uniform system of cytology that will give the clinician a clear guidance for clinical management.

Prevalence studies help in assessing magnitude of the problem in the community and help in devising preventive measures. Prevalence rate in my study was comparable to other studies conducted in western Uttar Pradesh reports epithelial cell abnormality of 3.23%, LSIL 1.36%, HSIL 9%⁽³⁾ but lower rates are reported in developed countries. Pankaj Desai 1992 reports a prevalence of LSIL 3.29%, HSIL 4.6%, ASCUS 6.4%⁽⁴⁾. CIN prevalence of 4.5% was reported by Chandra Madhu Das & Nasreen Shah.⁽⁵⁾

Mean age of LSIL in our study was 36-40 yrs, HSIL 46-50. Other studies show smears age for LSIL 32.3 yrs that for HSIL 40.5 years. Mean age of CIN is 37.5 years as per Chandra Madhu Das & Nasreen Shah.⁽⁵⁾ Musarrat Jabeen reported in his series the mean age of diagnosis of CIN 35.6 years. Our studies show an increased risk of carcinoma cervix with parity. Other studies by K E Jensen & S Schneder show a relative risk of 4.4 for patients with 5 pregnancies compared with nulliparous woman⁽⁶⁾. International Collaboration of Epidemiologic studies shows relative risk of invasive cervical cancer in parous women was 1.76. Musarrat Jabeen reported that increase parity increases risk by 75 %.⁽⁷⁾

Early age of first coitus also shows increase risk of cancer cervix. Our studies show an increased incidence of intra epithelium lesion when age of marriage is between 15-20 years. A study by Chandra Madhu Das & Nasreen Shah reported that 59.4%⁽⁵⁾ of cases diagnosed to have intraepithelial lesion had first sexual act before 20 years. Musarrat Jabeen also reported 41.68% had lesions when age of marriage was less than 18 years.⁽⁷⁾

LIMITATIONS: Sensitivity of Pap test to detect epithelial lesion is only 47%-62%. Specifically is 60-95%.⁽²⁾ Improvement in the conventional Pap test technique is necessary. Liquid based cytological assessment improves the sensitivity to 80%. But in a developing country like India Pap smear is still the standard to diagnosis intra epithelial lesions.

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CONCLUSION: This Study has shown a relatively high prevalence of epithelial abnormality in cervical smears with increasing age, parity, & early age at first coitus. So the screening should concentrate more to these groups which comes to approximately 10% of the population. Also other tests like human papilloma virus screening tests can ideally be offered to these groups of patients. Appropriate preventive measures applied to the high risk groups would help to reduce the incidence of further progression to cervical carcinoma.

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AUTHORS:

1. Preetha George
2. Sumathy Rao

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Obstetrics and Gynaecology, MOSC Medical College, Kolenchery.
2. Professor (Retd.), Department of Obstetrics and Gynaecology, Kasturba Medical College, Mangalore.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Preetha George,
Assistant Professor,
Department of Obstetrics and Gynaecology,
MOSC Medical College,
Kolenchery, Kerala, India.
Email: drpreetha69gmail.com

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