# Hospital based screening by paps smear for early diagnosis of cervical malignancy and treatment.

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Summary: Malignancy of uterine cervix is the commonest malignancy in Indian women and women of developing countries. Cervical cytology has been proved to be easiest, simplest, best and cost effective method of detecting pre-malignant conditions of uterine cervix. Efficacy of the said method is tested at different centres world wide. False positive detection rate can be reduced with the assistance of colposcope and suspected lesions are biopsied and confirmed by histology. Ours is one of those centres which are equipped with all these facilities. Attempt has been made to screen all women above 35 years and those with unhealthy cervix for last two years. Result of study has been presented in this paper.

## Introduction

Carcinoma of cervix is the commonest genital malignancy in India, specially in low and middle socioeconomic class of woman. Pap smear is a well known method of screening for early diagnosis of cancer cervix in women. It is cost effective, simple to perform and widely acceptable method to down stage the disease.

Though importance of pap smear is well accepted, use of colposcope and directed biopsy helps in detecting false positive and negative smears, thus effectively down stage the disease. We at BYL Nair Hospital started taking paps smears from Jan, 1996. Aim was to assess the scope and limitations of colposcopic evaluation of pap's smear reported abnormal.

## Material and Methods:

In this prospective study Pap smears were collected from women attending gynaec OPD for various complaints especially above 35 years as well as women with unhealthy cervix irrespective of age, from Jan. 1996 to Dec. 1997.

Smears were collected either by an Ayre's spatula or a swab stick. Smears were fixed by 'Hair spray'. All the smears were processed and reported by department of Cytology at BYL Nair Hospital. Abnormal smears were classified as mild, moderate, severe dysplasia, (also known as CIN I, II, III respectively) carcinoma-in-situ and invasive carcinoma. Women with abnormal smears were subjected to colposcopy examination from Aug. 1997 onwards and directed biopsy as required. Cytology, colposcopy and histology correlation was studied. Dry and inadequate smears were excluded from the study.

## Observations:

In 1996 total 279 smears were collected. Out of this 40 showed CIN I, 1 was CIS and 6 were invasive Ca. In 1997 out 737 smears 25 were CIN I, 3 were CIS and 6 were invasive Ca. Hence our malignancy detection was 0.4% for CIS and 1.6% for invasive Ca.

## Age wise Distribution:

Maximum number of patients screened were 21 to 40

### Table 1 Distribution of the abnormal smears in 1996-97.

| YEAR | TOTAL | NORMAL | INFLA | CIN I | CIN II | CIN III/CIS | INVAS. CA |
|------|-------|--------|-------|-------|--------|-------------|-----------|
| 1996 | 279 | 141 | 97 | 40 | 04 | 01 | 06 |
| 1997 | 737 | 408 | 362 | 25 | 01 | 03 | 06 |
| TOTAL | 1016 | 549 | 459 | 65- | 05 | 04 | 12 |
| | | | | 6.4% | 0.5% | 0.4% | 1.2% |

**Dried and Inadequate smears deleted from the study – 08 (1996) and 16 (1997)**

**Table II  Age wise distribution of reported Pap's smears**

| AGE | TOTAL | NORMAL | INFLA | CIN I no. % | CIN II | CIN III/ CIS | INVAS CA |
|---|---|---|---|---|---|---|---|
| < 20 YRS | 23 | 12 | 11 | ** | ** | ** | *** |
| 21-30 YRS | 254 | 134 | 109 | 10 | ** | ** | 01 |
| 31-40 YRS | 375 | 158 | 185 | 28 | 02 | 02 | *** |
| 41-50 YRS | 219 | 92 | 109 | 12 | 01 | ** | 05 |
| 51-60 YRS | 94 | 54 | 28 | 06 | 01 | 02 | 03 |
| 61-ABOVE | 49 | 29 | 07 | 09 | 01 | ** | 03 |
| TOTAL | 1016 | 549 | 419 | 65 | 05 | 04 | 12 |

**Table-III Percentage of Malignancy detection in abnormal smears**

| Age | Total | Normal | Abn. Smears | Malignancy |
|---|---|---|---|---|
| < 20 YRS | 23 | 12 | 00 | 00 |
| 21-30 YRS | 254 | 134 | 11 – 4.33% | 01 –9.09% |
| 31-40 YRS | 375 | 158 | 32 – 8.53% | 02 – 6.25% |
| 41-50 YRS | 219 | 92 | 18 – 8.21% | 05 – 27.7% |
| 51-60 YRS | 94 | 54 | 12 – 12.7% | 05 – 12.6% |
| 61-ABOVE | 49 | 29 | 13 – 26.5% | 03 – 23.07% |
| TOTAL | 1016 | 549 | 86 – 8.46% | 16 – 18.6% |

years old. Reversible changes like CIN I & II were seen frequently in age group of 21 to 40 (Table II). Irreversible changes like CIN III were seen commonly in women 40 years and older. Of 219 women of 41 to 50 years, abnormal smears were detected in 18 women (8.23%), 5 of them showed invasive Ca (2.4%).

Out of 94 women in 51-60 years age group, 5 were detected to have malignancy (5.0%) and out of 49 women above 60 years 3 showed invasive Ca (6.0%). This suggests that as age advances incidence of dysplasia and advanced malignancy increases 2 to 4 folds (Table-III).

**Clinical Presentation of Women with Abnormal Smears:**

Most of the women with abnormal smears presented with leucorrhoea, unhealthy looking cervix and menstrual disturbances (Table-IV). Out 196 women with unhealthy cervix, 1 showed CIS and 3 showed invasive Ca (2.0%). Out of 151 women with menstrual disturbances 6 had advanced malignancy (4.0%). Growth on the cervix was the next common presentation where Ca cx was detected in 1 out of 21 (5.0%). Three invasive Ca were detected from the vault of the vagina of asymptomatic women at routine follow-up after Wertheim's hysterectomy. They

**Table-IV Clinical presentation of abnormal smears**

| SYMPTOMS | Total | Normal | Inflam | CIN I | CIN II | CINIII/CIS | INVAS CA |
|---|---|---|---|---|---|---|---|
| Leucorrhea | 296 | 133 | 146 | 15 | ** | 02 | *** |
| Prolpse | 207 | 106 | 89 | 12 | ** | *** | *** |
| Unhealthy Cx | 196 | 85 | 78 | 24 | 05 | 01 | 03 |
| Menst Disb. | 151 | 75 | 61 | 09 | ** | 01 | 05 |
| Mass in Abd | 22 | 14 | 08 | ** | ** | ** | *** |
| Growth on Cx | 21 | 09 | 11 | ** | ** | ** | 01 |
| Asymptomatic | 123 | 64 | 51 | 05 | ** | ** | 03 |
| TOTAL | 1016 | 486 | 442 | 65 | 05 | 04 | 12 |

## Table-V Cytology-Colposcopy correlation

| COLPOSCOPY<br>CYTOLOGY | TOTAL | NOR | INFLA | ATYP Bl. V | SUSP CA. |
|---|---|---|---|---|---|
| MILD DYSP | 11 | 01 | 01 | 05 | 04 |
| MODE DYSP | 03 | ** | ** | 01 | 02 |
| SEVE DYSP / CIS | 01 | ** | ** | 01 | ** |
| INVASIVE CA | 05 | ** | ** | ** | 05 |

## Table VI Cytology – Histology correlation

| HISTOLOGY<br>CYTOLOGY | TOTAL | NOR | INFLA | MILD DYSP | MODE DYSP | SEV DYS / CIS | INVAS CA |
|---|---|---|---|---|---|---|---|
| CIN I | 11 | 01 | 04 | 01 | 02 | 01 | 02 |
| CIN II | 03 | ** | ** | ** | 02 | 01 | ** |
| CIN III / CIS | 01 | ** | ** | ** | ** | 01 | ** |
| INVAS CA | 05 | ** | ** | ** | ** | 01 | 04 |

were referred to radiotherapy for recurrence of malignancy.

Women with carcinoma in situ and severe dysplasia were subjected to appropriate surgery after histology confirmation. Out of 12 patients with invasive malignancy 7 were in clinical stage II b or IIIa and were referred for radiotherapy

### Cytology and Colposcopy Correlation:
Some of the women with CIN I & II were lost to follow up, hence were not evaluated by colposcope. Five out of 11 smears with mild dysplasia (CIN I) showed atypical vascular pattern of which 4 were suspected to be malignant, so directed biopsy were taken. For moderate, severe dysplasia and invasive Ca, there was good correlation, almost 100% as shown in Table-IV.

All 5 women with invasive Ca diagnosed on cytology, showed malignant features on colposcopy.

### Cyto-histology Correlation
All the women who had colposcopic examination were subjected to directed biopsy and the histology pattern was studied. (Table VI). There was poor correlation for mild dysplasia. Of 11 smears diagnosed as mild dysplasia, 3 were proved to be malignancy. There was 90-100 % correlation for moderate and severe dysplasia and invasive Ca.

### Conclusion:

Colposcopic examination and directed cervical biopsy of 11 women reported to have CIN I lesion, 1 was detected to have CIS and 2 had early invasion. Non availability of colposcope could have missed these early lesions. Similarly 1 of the 3 CIN II lesions was diagnosed to have CIS. All these malignancies were operable and were treated appropriately

Cyto-colpo-histology correlation was 90-100% for CIS and invasive Ca. CIN I & II showed poor correlation with histology. Hence Pap smear along with colposcopy and directed biopsy is the only effective way of down staging the cervical malignancy. As age advances chances of dysplasia and advanced malignancy increase.