

# CYTOPATHOLOGICAL ASSESSMENT OF CERVICAL CANCERS

By

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## SUMMARY

The prevalence of cervical intraepithelial neoplasia (C.I.N.) and invasive carcinoma (Pre clinical) were evaluated cytologically on 400 married women presenting with signs and/or symptoms of cervical leisions. The abnormal smears constituted 12% of all smears out of which CIN and malignancy were 10.25% and 1.75% respectively. The smears were histologically correlated on 231 patients to evaluate diagnostic acuracy (cytology histology agreement), false positive and false negative reports, which were 89.61%, 5.62% and 4.76% respectively. It was also observed that histology although is confirmatory, at times cytology comes to the rescue of histology especially when the biopsies are made at random (not selective by colposcopy).

### *Scope and AIM of the Research Project*

The patients of the present study belong to Western Orissa, a tribal dominated area, where such studies were not undertaken earlier.

The present investigators propose (1) to evaluate the incidence of cervical carcinoma in patients attending VSS Medical Colege, Burla, Sambalpur, Orissa (2) to assess and evaluate the accuracy of cyto-diagnosis in relation to histopathological diagnosis.

### *Methodology*

The study was conducted for one year from July, 84 to June, 85 on 400 married women attending Obstetrics and Gynae-

cology Department, VSS Medical College, Burla for the treatment of obvious cervical leisions. Overt cancers were excluded from this study. Cervical smears were collected from squamo-columnar junction of the cervix by means of Ayre's spatlua before vaginal examination. Wet smears made from scrapings were immediately fixed by 95% isopropyl alcohol and stained by modified papanicolaou technique.

The smears were interpreted according to CIN (cervical intra epithelial neoplasia) terminology, first introduced by Richart (1967) as modified by Koss (1979). Smears were finally classified into following 5 groups adding one more group of normal and inflammatory which served as control series.

1. Normal and inflammatory (No epithelial atypism).
2. CIN I Mild dysplasia.

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3. CIN II Moderate dysplasia.
4. CIN III Severe dysplasia and carcinoma in situ.
5. Invasive carcinoma.

Biopsy (random) was undertaken on 231 cases including 183 cases of no epithelial atypism and all 48 cases of CIN and invasive carcinomas. These 183 cases of no epithelial atypism were subjected for biopsy on the basis of reparative and metaplastic changes affecting normal architecture of cells. A total number of 457 smears were evaluated including 57 repeat smears.

#### Histological Classification

This classification was followed from Novak (1979) but expressed in CIN terminology to facilitate comparison with classification of smears. In case of discrepancy between cytology and histology, cytology smears were repeated, deeper and serial sections and repetitions were tried on biopsy specimens.

#### Observations

TABLE I  
Grading of Cytological Smears

Grading of Smear	No. of cases	Percentage
1. Normal and inflammatory (No Cellular atypism)	352	88.0
2. C I N—I	18	4.5
3. C I N—II	13	3.25
4. C I N—III	10	2.5
5. Invasive carcinoma (Pre-clinical)	7	1.75
Total	400	100

TABLE II

Histology Report on BCV Cases (183 Cases From no Epithelial Atypism + 48 All Cases of Epithelial Abnormality)

Histological grading	No. of cases	Percentage
No epithelial abnormality	183	79.22
C I N—I	22	9.52
C I N—II	11	4.76
C I N—III	8	3.46
invasive carcinoma	7	3.03
Total	231	99.99

#### Discussion

In the present study no cellular atypism, CIN and malignancy were seen in 88%, 10.25% and 1.75% of cases respectively (Table I). The incidence of CIN observed on population screening by cytology shows wide range of variation. However Das *et al* (1984) observed CIN to be 11.97%. This figure is quite compatible with that of ours, mostly because the studies were carried out on similar group of patients. The incidence of invasive carcinoma (pre clinical) reported by different workers varies from 1.56% to 1.75% (Ras *et al* 1984, Lulla *et al* 1980, Wahi *et al* 1969) which is in consonance with the present study. There is wide acceptance of the fact that although the incidence of CIN and carcinoma varies from place to place due to different population under study the incidence of CIN declines from CIN I to CIN III and invasive carcinoma declines from CIN.

In the present series diagnostic accuracy (Table IV) was observed to be 95.07%, 65.85% and 85.71% in case of no epithelial atypism CIN and invasive carcinoma, respectively, overall accuracy

TABLE III  
Cytology-Histology Co-relation in 231 Cases

Smear grading	No. of cases	Neopithelial atypism	CIN-I	CIN-II	CIN-III	Invasive carcinoma
Neopithelial atypism	183	174	9	Nil	Nil	Nil
CIN-I	18	4	13	Nil	1	Nil
CIN-II	13	4	Nil	8	Nil	1
CIN-III	10	1	Nil	3	6	Nil
Invasive carcinoma	7	Nil	Nil	Nil	1	6
Total	231	183	22	11	8	7

TABLE IV  
Diagnostic Accuracy of Cytology

Cytology smear grading	No. of cases	Cytology Histology agreement	False Negative	False Positive
No epithelial atypism	183	174 (95.07%)	9 (4.92%)	Nil 12
C I N	41	27 (65.85%)	2 (4.88%)	(29.27%) 1
Invasive carcinoma	7	6 (85.71%)	Nil	(14.3%)
Total	231 (99.99%)	207 (89.61%)	11 (4.76%)	13 (5.62%)

being 89.61% which varies in the literature from 82.6% to 100% (Gupta, 1971; Meisili, 1969; Das *et al* 1984 and Szczepanik 1983). However, the diagnostic accuracy of CIN (65.85%) is much less in comparison to other two groups because the diagnostic criteria of CIN I, II together and CIN III has narrow limits of difference in correlation to No-epithelial atypism and invasive carcinoma respectively.

False positive and false negative results in the present study were found to be 5.62% and 4.76% respectively. The former is in agreement with different workers (Graham *et al* 1962 and Copple-son *et al* 1967) whereas false negative reports varies in the literature from

1.8% to 20% (Staff and Wilkinson, 1979). The discrepancy is ascribed to:

(i) differences in cytological expertise,  
(ii) variation in methods of collection,  
(iii) lesions with poor exfoliation of cells.

(iv) scraping procedure may fail to reach lesions high up in cervical canal.

Histology although corrected a number of cytological errors, cytology in one case could come to the rescue of histology by detecting a case of invasive carcinoma, whereas biopsy revealed Chr. Cervicitis in the same case. Taking this discrepancy into account serial and deeper sections of biopsy were studied, which ultimately agreed with the report of cytology.

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