



Spectrum of Cervical Lesions on Pap test screening in Gwalior Region: A One Year Retrospective Study

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ABSTRACT

Cervical cancer is the second most common cancer in women constituting about 15% of all cancers in women worldwide. 80% of all the cases of cervical cancer occur in developing countries. Worldwide, cervical cancer is the 2nd most common cancer in women and the third most frequent cause of cancer deaths. Since the development and proper implementation of pap smear screening for cervical lesion the scenario has been changed worldwide as well as in India. Present study was designed to estimate the scenario of cervical lesion in Gwalior Region by the help of pap test. Total 5566 smears were examined with 98.6% satisfactory smear, having maximum cases of 21-30 yrs age group. Of the total cases studied, NILM far exceeds the ECA. Total 08 cases of Squamous cell Carcinoma detected during our one year retrospective study.

KEYWORDS : Cervix, Pap smear, NSIL, ECA, Bacterial Vaginosis, Trichomoniasis, LSIL, HSIL, Squamous cell carcinoma

INTRODUCTION: The 20th century witnessed a remarkable decline in incidence & mortality from cervical cancer after implementation of Papanicolaou (PAP) test as a regular screening.^[1]

The Pap smear test is a simple, non-invasive, and a cost-effective method for the diagnosis of cervical and vaginal precancerous, cancerous lesions.^[2] Pap smear is a screening as well as a diagnostic test. As a screening test, it is used to detect preinvasive lesions of the cervix and as a diagnostic tool; it is used for the examination of samples from high risk cases.^[3,4]

Of the various cancers diagnosed worldwide in females, carcinoma cervix has major part as about 15% of the total cancers.^[5] In the present scenario worldwide, the incidence of cervical cancer is approximately 510,000 new cases annually, with approximately 288,000 deaths.^[6] As far as developing countries are concern, 80 % of the cervical cancer occurs in these countries^[7] owing to far better screening programme in developed countries.

In India the current estimates indicate approximately 132,000 new cases diagnosed and 74,000 deaths annually, accounting to nearly 1/3rd of the global cervical cancer deaths^[8]

Cervical lesions including inflammatory and epithelial abnormalities are the major health problem among the females of Gwalior region. As mentioned in a study as 33.56% of all other cancers with highest crude index of in Bhind and Gwalior Distt.^[9]

The purpose of this study was **to evaluate the entire spectrum of Cervico-vaginal cytological abnormalities** like Inflammation, Precancerous and Cancerous lesions among females undergoing routine screening at JAH group of Hospital, GRMC Gwalior and also to **find prevalence** of these lesions in Gwalior Region.

Method and Material: A total number of **5566 cases of women** with age group 17-89 studied which were presented for routine screening at **JAH group of Hospitals, GRMC Gwalior (a tertiary care centre)**, during time period from **1st July 2013 to 30th June 2014**. Cervical scrape smears were collected using Ayer's spatula or endocervical brush, the smears were fixed in absolute alcohol and stained **using Papanicolaou stain and simultaneously air dried and stained with Leishman Giemsa stain**. Each slide

were reported by expert cytopathologists The significance was given on **No-intraepithelial lesions or Malignancy (NILM)** and **Epithelial Cell Abnormalities (ECA)** Cases were recorded and classified according to **Bethesda system 2001^[10] of reporting Pap smear** cytology into three general categories : unsatisfactory, normal or abnormal. Abnormal smears are subdivided into NILM (no intra epithelial lesion), ECA (epithelial cell lesion) which are classified into ASUS (atypical squamous cell of unknown significance), LSIL (low grade squamous intra epithelial lesion), HSIL LSIL (high grade squamous intra epithelial lesion), SCC (squamous cell carcinoma). NILM included benign cellular changes as reactive change, inflammatory and atrophic smear

Pregnant women, menstruating women, women with invasive carcinoma at the time of clinical evaluation, and women previously treated for cervical neoplasm were excluded from the study.

Results: Results of the present study were as follows:

As per Bethesda System of the total 5566 smears examined, **5493(98.7%)** smears were found satisfactory and 1.3% smears were unsatisfactory (the proportion of inadequate smears ranged from 0.2-5% in other studies)^[6-10] with **1038 (18.6%)** normal smears.

Table No. 1:

	Unsatisfactory smears	Satisfactory smears	
		Normal	Abnormal
No. of cases	73	1038	4455
Percentages	1.3%	18.6%	80.1%

Age Distribution: Maximum number of cases **(38.9%)** was of **Age Group 21-30yrs** followed by the age group 31-40 yrs with 34.2%. Age group of extremes of this study were less in number with **least for >60 yrs with 2.5%** followed by age group <20yrs as 3.23%

Table No. 2:

Age Group	<20yrs	21-30 yrs	31-40yrs	41-50yrs	51-60yrs	>60yrs
No. of Cases	180	2165	1903	900	278	140
Percentage	3.23%	38.89%	34.18%	16.16%	4.99%	2.51%

P/S Findings: Of the total 5566 cases, each case were evaluated on per-speculum findings as depicted in table no.3 .

Table No. 3:

Appearance of cervix	No. of cases (%)
No gross pathology	2177 (39.11%)
Hypertrophied,unhealthy cervix	1186 (21.30%)
Cervical erosion	1575 (28.30%)
Prolase	542(9.74%)
Visible growth on cervix	86(1.55%)
Total	5566 (100%)

No-intraepithelial lesions or Malignancy (NILM) spectrum: Of the total 5566 cases NILM constituted 70.5%(n=3921) were diagnosed as No intraepithelial lesions or Malignancy(NILM). Under this category Shift in flora suggestive of Bacterial Vaginosis(BV) tops the list with 2577cases(65.7%). Significant number of cases were found to be in miscellaneous category with non-specific inflammatory changes-in cluding bening squamous metaplasia as 20.3%(n=805) .

Table 4:

NILM	<20	21-30	31-40	41-50	51-60	>60	Total
Shift in flora suggestive of Bacterial Vaginosis	54	1069	967	382	97	08	2577(65.7%)
Candidiasis	12	89	69	38	11	01	220(5.6%)
Atrophic changes	nil	nil	01	23	40	64	128(3.3%)
Trichomoniasis	11	60	30	16	03	01	121(3.2)
Endocervicitis	02	22	28	08	06	04	70(1.9%)
Others (miscellaneous)	04	318	264	136	61	22	805(20.3%)
Total	83	1558	1359	603	218	100	3921(100%)

Epithelial Cell Abnormalities (ECA) ECA accounts for 9.59% (n=534) of the total cases in present study with LSIL leads far ahead of all the other lesions included in ECA with 79.77% (n=426).. Total 08 cases (1.49% of ECA and 0.14% of the total cases) were diagnosed as Squamous Cell Carcinoma mainly on the older age group as expected. No any case of Adenocarcinoma were detected in the study.

Table 5:

ECA	<20 yrs	21-30 yrs	31-40 yrs	41-50 yrs	51-60 yrs	>60 yrs	Total
LSIL	03	74	177	145	17	10	426
ASUS	08	15	13	09	08	04	57
HSIL	Nil	03	07	10	13	10	43
S.C.Ca	Nil	Nil	01	02	02	03	08
Adeno. Ca.	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Total	11	92	198	166	40	27	534

Discussion:

The Pap test is the only test in our practice settings that has been

used in widespread screening programs for cervical lesions . The prevalence studies around the world with reference to the epithelial abnormalities, which was the main motive for advocating custom cervical smear examination , has shown a widespread range from as low as 0.98% ^[11] to as high as 15.6%.^[12]

If we deem countries such as Unites States Of America (U.S.A.), the prevalence rates of cervical dysplasia range from 2.3-6.6%^[13] in Middle East 1.65-7.9% ^[14-16] in Israel 0.98 to 4.41% ^[17-19] and in India 1.392-7.8% ^[20-23] ; whereas in our study it was 9.59%.

In our study, prevalence of LSIL was more common in premenopausal age group near 40 years. It was noticed that in the majority of studies including ours, prevalence of HSIL was higher in postmenopausal women in our study.

The reasons for these disparity could be many including criteria employed for diagnosis, the quality checks used, fundamental differences in the population studied including the prevalence of risk factors and the numbers studied which have ranged from as few as 419^[24] to as high as 297,849.^[25]

Negative for intraepithelial lesion or malignancy (NILM) category analyzed further and showed majority (65.7%) of cases were diagnosed as Bacterial Vaginosis. Reduced incidence of Trichomonas and Candida were noted due to radical use of drugs by practitioners at the local level , rather than to go for specific screening in hospital.

The average age of the patients in this study was 29 years with majority of the patients (38.89%) were from 2nd and 3rd decade. This suggests that Pap testing is slightly delayed in many women in our setup. The physicians or healthcare professionals should request Pap smear testing and educating people about the benefits of the Pap smear test.[26]

On per speculum examination, 39.11 % patients had no gross pathology. Cervical erosion (28.30.%) was the second most common finding and 21.30 % had hypertrophied cervix. These findings correlated well with Chitale et al [27] and Misra et al. [28]

Conclusion: Cervical ca. is 2nd m.c. cancer among females after breast ca^[13]. Akin to previous studies, Inflammatory and epithelial abnormalities of Cervix are high in our setup also, and conventional Pap smear is a good tool to screen various cervical lesions .**The prevalence of epithelial abnormalities (EAC), as our study shows, is directly proportional to the age.** This may be a tip of iceberg as more awareness is needed in females especially from rural areas to undergo screening routinely in Gwalior Region. Periodical cytological screening would go a long way in the early detection of various cervical lesions and help in reducing the incidence of cervical cancer

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