Prevalence of Abnormal Cervical Cytology and its' Relation with age and Parity

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This screening study was carried out in Gynae Unit II, Sir Ganga Ram Hospital, Lahore. The aim of study was to find out prevalence of abnormal pap smears and its correlation to age & parity so that we can formulate a policy to screen at risk population with utilization of minimum resources in our setup. Role of Pap smear in detection of cervical pre-malignant & malignant lesions can not be over emphasized. The Cervical smears of 310 women have been evaluated. The frequency of mild to severe cervical intraepithelial neoplasia was found to be 8% while smear positive for malignant cells was in 0.9% of cases. This study reveals 41-60 years of age and Para three and above a high risk group for Cervical Intraepithelial Neoplasia (CIN) and cytology positive for malignant cells. In view of the expenditure involved and technical constraints in mass screening, an approach of selective screening of high risk population could be an effective strategy for control of carcinoma of cervix in developing countries like ours.
Key words: Pap smear,   cervical cancer, Screening.

Cervical cancer is the commonest genital tract malignancy in women. The global estimates reveal 470,000 new cases each year and annual death toll 234,000[1].

Most women die as 80% of cases occur in developing countries with only 5% resources for cancer control. About 60-80% cases are in advanced stage at time of presentation with low probability of long term survival. There is no population based cancer registry in Pakistan so exact burden of disease can not be assessed, Karachi cancer registry reveals cervical cancer as commonest genital tract malignancy[2].

Cervical cancer is preventable and curable disease provided it is diagnosed early enough. The cervix is an organ which can be easily sampled and there is long term premalignant phase which can be detected cytologically. Pap smear has been the gold standard for cervical cancer screening and detection for many years in developed world. Cytology based program have contributed in marked decline of morbidity and mortality in these countries[3] but in most developing countries meaningful coverage of all at risk women through cytological screening will not be possible for decades to come because of cost and operational problems related to this program.

The present study was aimed to find out frequency of cervical smear abnormalities and correlation of these abnormalities to age and parity which may help in formulation of policy to achieve high coverage of at risk women in our institution.

Patients and methods:

This study was carried out at Gynae Unit II Sir Ganga Ram hospital, Lahore. This is a tertiary care hospital, which is attached with Fatima Jinnah medical college. Data of 310 pap smears which were performed during August 2003 to march 2005 was collected for analysis. Subjects were married, non pregnant women irrespective of age group presenting to Gynae out patient department with some complaints warranting pelvic examination. Patients having pelvic infection and obvious cervical growth were not considered for Pap smear.

Results:

Demographic pattern of subjects as given in Table I & II reveals that maximum smears taken (60%) were in active reproductive age group & 62% were Para three and above.

Table 1: Age distribution of subjects.

Age in years	=n	%age
21-30	73	23.5
31-40	115	37.1
41-50	71	22.9
51-60	42	13.6
>60	9	2.9

Table II: Distribution of parity of subjects

Parity	=n	%age
P_0	33	10.6
P_1-P_2	85	27.4
P_3-P_4	102	32.9
>P_5	90	29.1

Out of total 310 subjects 31% were having normal cervical appearance (Table III) while 36% were having features of chronic cervicitis. Ectopy was present in about 18% while congested cervix which bleeds to touch was in 15% of the subjects. As shown in Table IV, cytological diagnosis was normal in 42% of subjects while 46% had inflammatory smear. About 8% had cervical intraepithelial neoplasia (CIN) of various degrees.

As far as correlation of abnormal smears with age and parity was concerned (Table V) maximum inflammatory smears were (41%) in age 31-40 years and parity three and above (60%). Squamous metaplasia with atypia was maximum (43%) in 51-60 year of age and parity wise 71% were Para three and above. Maximum smears having CIN I (33%) was in subjects 41-50 year of age while CIN II (44%) and CIN III (60%) were in age group of 51-60 year. Regarding relation of parity 75% of CIN I, 44% of CIN II and 60% of CIN III subjects were Para three and above. Cervical cytology positive for

malignant cells was maximum in (67%) in 51-60 year of age while rest of the 33% cases were found in 41-50 years.

Table III: Appearance of cervix on visual inspection

Appearance of Cx	=n	%age
Normal	97	31.3
Cervicitis	38	12.3
Hypertrophied	73	23.6
Congested Cx/bleeds to touch	21	15.1
Ectopy	55	17.7

Table IV: Cytological diagnosis

Cytology	=n	%age
Normal	131	42.3
Inflammatory	143	46.1
CIN I	12	3.9
CIN II	09	2.9
CIN III	05	1.6
Sq. metaplasia with atypia	07	2.3
Positive for malignant cells	03	0.9

Table V: Age and parity distribution in abnormal smears

Age	Inflammatory (%)	CIN I (%)	CIN II (%)	CIN III (%)	Sq. metaplasia with atypis (%)	Positive for malignant cells (%)
21-30	38(26.5)	1(8.3)		1(20)	1(14.3)	
31-40	58(40.6)	3(25)	2(22.2)	1(20)	2(28.6)	
41-50	33(23.1)	4(33.4)	3(33.4)	3(60)	3(42.8)	1(33.3)
51-60	13(9.1)	3(25)	4(44.4)		1(14.3)	2(66.7)
>60	1(0.7)	1(8.3)				
Parity						
P_0	14(9.8)	1(8.3)	2(22.2)	1(20)	1(14.3)	1(33.3)
P_1-P_2	43(30.0)	2(16.6)	3(33.3)	1(20)	1(14.3)	
P_3-P_4	47(32.9)	5(41.7)	3(33.3)	2(40)	2(28.6)	1(33.3)
>P_5	39(27.3)	4(33.4)	1(11)	1(20)	3(42.8)	1(33.3)

Discussion:

The objective of cervical cytology for cervical cancer screening and early detection can be achieved by high coverage of at risk women. To achieve this goal of identifying vulnerable group in our community collaborative studies in teaching hospitals should be carried out to have our own epidemiological data.

Our study revealed inflammatory smear 46% while it was 59.3% in a study at Agha Khan[4], 52.7% as revealed by Anorlu[5], 11.1 % reported by Mishra NK[6] and 37 % was quoted by Thistle PJ[7]. In this study 8% of subjects had CIN of various degrees while it was 5.8% as revealed by Mishra NK[6] and 0.5% quoted by Wasti S[4].

Cytology was positive for malignant cells in 0.9% in our subjects and 0.8% as revealed by Anorlu[5]. Study of Mishra revealed 2.8% cellular profile suggestive of malignancy [6] and 0.2% as quoted by Das [8]. Atypia was 0.7% in study of Wasti[4] & 0.5% by Misra JS[9]. Anwar S study revealed 1.6% [10] positive malignant cells.

Our study reveals 41-60 years of age and Para three and above a high risk group of Cervical Intraepithelial Neoplasia and cytology positive for malignant cells. Study of Mishra revealed high incidence of malignancy in Para four and above while another study in India[11] revealed Para two and above as a high risk group for malignancy. Study of Wasti quoted highest incidence of dysplastic smears in 35-44 years[4]. Das et al revealed median age of CIN I, II & III as 34, 37.9, % 38.6 respectively[8].

This very small study was a step to identify high risk group which should be targeted in selective screening. This can be a step towards control of burden of disease and improve survival statistics. We conclude that selective screening at least once in life time between 41-60 years of age should be promoted to pick up pre-malignant and malignant lesions of cervix. Meanwhile we should concentrate on evaluation of alternative cheaper & cost effective screening strategies

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