Original Research Paper

Volume-7 | Issue-10 | October-2017 | ISSN - 2249-555X | IF : 4.894 | IC Value : 79.96

Gynaecology

Clinical Analysis of PAP Smear in Rural Telangana

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ABSTRACT

Introduction:
Papanicolaou (PAP) smear as the key screening procedure for cervical carcinoma, detects 70% – 80% cases of abnormal cells in different stages of development of the disease. It is the simplest, inexpensive, reliable and most acceptable procedure for mass screening. In developed countries screening by PAP smear has shown to have reduced rate as well as morbidity and mortality due to carcinoma cervix.

Materials and Methods:
Study was carried out over a period of 2 years on 5000 cases. Cervical cytology smears of eligible women were taken from transformation zone. Clinical details were correlated with cytology report for analysis.

Results:
5000 patients between age group ranging from 17 to 68 years were taken for the study. Age of marriage was as low as 14 years and 90% of the women were married by the age of 20 years. 46.22% had symptoms and 45.60% had signs suggestive of genital tract infection. 24.16% showed normal cytology; 73.20% had infection and/or inflammation; 1.26% ASCUS (abnormal squamous cells of undetermined significance); 0.62% LSIL (low grade squamous intraepithelial lesion); 0.72% HSIL (high grade squamous intraepithelial lesion) and 0.04% showed squamous cell carcinoma.

Conclusion:
Cervical carcinoma being a preventive malignancy to a major extent needs to be screened at scheduled interval. Awareness among women regarding risk factors, screening and requirement of management of abnormal PAP report is the key to reduce the disease incidence, morbidity and mortality.

KEYWORDS : PAP smear, ASUCS, LSIL, HSIL, Carcinoma cervix.

INTRODUCTION:

Cervical cancer is the second most common cancer in females in the world but the first in the developing countries with a high mortality if not diagnosed early[1]. Development of the disease is a slow process covering a period of about 15 years from precancerous cellular changes to subclinical early stage of the disease and latter clinical presentation. So prognosis is dependent on the detection of the condition at different stages of development. The malignancy can be prevented if detected in precancerous stage. Human Papilloma virus (HPV) has been implicated in 99.7% of cervical squamous cell carcinoma worldwide[2]. Other cases are considered to be due to factors like smoking, low socioeconomic status and high parity. So reproductive tract infection especially STI (sexually transmitted infection) and risk factors for it like multiple sexual partners of either spouse, non-use of barrier contraception, illiteracy, unawareness of health facilities like screening for carcinoma cervix, vaccination against HPV and Combined Oral Contraceptive (COC) Pill use as well as sexual exposure at early reproductive years are responsible for the causation of the malignancy and also detection in advanced stage with a bad prognosis. PAP smear or cervical cytology is the simplest, reliable and inexpensive method of screening for abnormal cells which are likely to progress to carcinoma cervix in later years. It is 70% – 80% sensitive in detecting abnormal cells in different stages of development[3].

MATERIALS AND METHODS:

The present study was conducted on 5000 patients attending gynaecology OPD in Mamata General Hospital, attached to Mamata Medical College, Khammam, Telangana State from January 2014 to December 2015 over a period of two years. Cervical cytology was taken from transformation zone with Ayres spatula, smeared on glass slide, fixed and sent to cytology lab for reporting with adequately filled requisition form. Details of information of the patient from OPD paper and cytology report was compiled for the study. Patients having positive cytology report were further investigated or treated. Many patients were missed during the process so that it was not possible to find the prognosis. All non-pregnant women with history of sexual activity irrespective of age were counselled and taken for the screening. Patients with no history of sexual exposure, vaginal bleeding, clinically detectable carcinoma cervix or follow up cases of carcinoma cervix after completion of treatment were excluded from the study.

RESULTS:

Mamata General Hospital, being a tertiary care centre located in a district head quarter, almost all women reported for treatment in this hospital were from rural area and belonged to low socioeconomic background. They were either illiterate or had primary school education. Most of them were either housewives or agricultural workers. All the patients taken for the study belonged to the age group of 17years to 68years. Age distribution of the patients is presented in table-1.

S. No.	Age Group (in years)	Number of cases (n=5000)	% of cases
1	< 20	143	2.86
2	21 - 30	1969	39.38
3	31 - 40	1572	31.44
4	41 - 50	961	19.22
5	>50	355	7.1

Table 1. Age distribution

In spite of adequate counselling, smoking history and sexual history could not be obtained reliably .The only method of birth control was found to be female sterilisation (tubectomy).There was not a single patient using barrier contraception (condom).Very few women gave history of using COC pills as contraception for a short period. Early marriage was very common leading to sexual exposure at an early age. 90% of women were married by the age of 20 years and minimum age of marriage was 14 years. There was not a single case of grand multi para (4 or more viable birth). 2311(46.22 %) of women were having symptoms and 2280 (45.60 %) were having signs suggestive of genital tract infection or inflammation. 3 (0.06%) cases showed cervical ulcer and 10 (0.20%) had cervical polyps.

Out of 5000 PAP smears, 65(1.30%) slides were found to be unsatisfactory. Repeat sample was taken for these women and report

was compiled for analysis(n=5000). Out of 5000 cases 1208(24.16%) had normal cytology; 3660(73.20%) women had evidence of infection and or inflammation; 63 cases (1.26%) showed ASCUS; 31 cases (0.62%) showed LSIL; 36 cases(0.72%) showed HSIL and 2 (0.04%) cases found positive for squamous cell carcinoma. The result of PAP smear study is depicted in table-2.

S. No.	PAP smear Report	Number of cases (n = 5000)	% of cases
1	Normal	1208	24.16
2	Infection/inflammation	3660	73.20
3	ASCUS	63	1.26
4	LSIL	31	0.62
5	HSIL	36	0.72
6	Squamous cell carcinoma	02	0.04

Table 2. PAP smear report

42 patients (0.84%) in the age group of 31-40 years (n=1572) followed by 40 patients (0.8%) in the age group of 41-50(n=961) showed abnormal features on PAP smear study in form of ASCUS,LSIL and HSIL. Only 02 cases (0.72%) out of 355 patients in age group of >50 years were positive for squamous cell carcinoma. The detailed abnormal PAP smear findings among various age groups have been depicted in table-3.

S. No.	Age Group (years)	No. of cases (n=5000)	ASCUS	LSIL	HSIL	Squamous cell carcinoma	No. of Abnormal Cases	% of abnormal Cases
1	< 20	143	0	0	0	0	0	0
2	21 - 30	1969	11	1	2	0	14	0.28
3	31 - 40	1572	20	11	11	0	42	0.84
4	41 - 50	961	19	12	9	0	40	0.8
5	>50	355	13	7	14	2	36	0.72
6	Total	5000	63	31	36	2	132	2.64

Table-3. Age wise distribution of abnormal PAP smear report

DISCUSSION

Though the second most common cancer in women worldwide and most common cause of death due to cancer in women, incidence and mortality due to cervical cancer has been reduced because of screening, early diagnosis and effective management. Women are getting aware about prevention of the disease. But we are still lagging behind and the following discussion emphasises the risk factors prevailing in the region. It also emphasises the need of regional study to find the deficiencies and take measures against it.

No age bar is considered for the present study as early age of sexual (marriage) exposure is very common in this region, the earliest being 14 years and 90% were married by the age of 20 years. Low socio-economic status, illiteracy, unawareness is prevalent. Though sexual history could not be extracted reliably high incidence of symptoms and signs of genital infection/ inflammation goes in favour of it. Inflammatory cytology was 73.20% which cannot be ignored by only antibiotic treatment.

One study by Campion, Singer and Mitchell [4] drew attention to a number of published studies including those of Kohan et al. [5] and Reiter et al. [6] showing that colposcopy and directed biopsies in cases of inflammatory Pap smear found 30% of intraepithelial neoplasia after a single inflammatory smear and 70% of intra-epithelial neoplasia in cases of persistent inflammation.

A study by Charan Paul et al.[7] on 756 patients of 20 - 70 years age group showed majority of cases being in the age group of 40-59 years in comparison to present study, where majority of patients(70.82%) were in the age group of 21-40 years. Age being a criterion to develop cellular abnormality after HPV infection may affect the incidence cytological report. Out of 32 cases in the study by Charan Paul et al which were tested positive for epithelial lesion on Pap-smear, 68% of the cases were Low Grade Squamous Intraepithelial lesion (LSIL), 25% of the cases were classified as High Grade Squamous Intraepithelial lesion (HSIL). 1 case each was diagnosed as ASCUS and Atypical Glandular cells respectively[7]. As compared to this study, out of 132 abnormal cytology reports in the present study, 63(47.72%) ASCUS, 31(23.48%) LSIL, 36(27.27%) HSIL and 2(1.5%) cases of squamous cell carcinoma were observed. This may be explained by the lower age group of patients in this study and the fact that many asymptomatic patients were included for screening.

A study by Lakshmi PV and Gouri SRS on 200 patients of 25-70 years of age group showed 6 cases of Bacterial vaginosis,134 cases of inflammatory, 5 cases of ASCUS,15 cases of LSIL,13 cases of mild to moderate dysplasia and 12 cases of HSIL[8]. The study included patients beyond 45 years for routine screening which showed 8 cases to be negative for malignancy and 2 cases of squamous cell carcinoma following primary treatment for carcinoma cervix. Present study does not include known cases of carcinoma cervix and has included both symptomatic as well as asymptomatic women after sexual exposure. In study by Lakshmi PV and Gouri SRS,104 out of 200 (52%) cases were of the age group of 25-45years in comparison to the present study, where 63.68% of cases were up to 40 years of age. Lower limit of age was not fixed in the present study as age of marriage was low in this geographical region which is a major risk factor for carcinoma cervix.

A study by Shyamala Devi including 300 women in a remote medical college hospital in South India showed 190 (63.33%) inflammatory and 20 (6.67%) with epithelial abnormality. Out of abnormal cytology, 8 cases (2.67%) were ASCUS, 2 (0.67%) were LSIL, 6 cases (2%) were HSIL and 4 cases (1.33%) were reported as squamous cell carcinoma. Age group of patients was taken from 21-80 years. 31-40 years constituted the largest age group (38%)[9]. A comparative result in various studies in respect of PAP smear in different geological regions are depicted in table 4.

Studies	No. of cases	ASCUS %	LSIL %	HSIL %	Squamous cell carcinoma%
Beinton A et al (1986)[10]	130	6.93	8.46	2.69	2.69
Karuma et al (2003)[11]	100	6	7	5	0
Sherwani RK et al (2007)[12]	160	0	10.6	0.6	3.7
Vaghela BK et al (2014)[13]	400	2.75	15	6	3
Present study	5000	1.26	0.62	0.72	0.04

Table 4: Comparison of PAP smear report in present study vs other studies in other regions

CONCLUSION:

Cervical cancer is the most preventable cancer in females, which include primary, secondary and tertiary prevention. Avoidance of risk factors, regular screening and management of abnormal cytology prevents the disease. Screening detects the disease in premalignant condition when it is completely curable by adequate management. Even detection of the disease in preclinical or early stage improves the prognosis. So awareness among the people is the basic requirement to avoid this dreaded disease for which participation of both public as well as private health authorities is the need of the hour.

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