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OPPORTUNISTIC SCREENING FOR CERVICAL CANCER IN A TERTIARY HOSPITAL IN BIHAR

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INTRODUCTION

Cancer of the cervix is a global health problem, comprises approximately 12% of all cancers among women globally. Incidence and mortality of cancer cervix in world is 530232 and 275008 per year while in India it is 134420 and 72825 per year respectively.[1]

It is the most common cancer among women after breast and colorectal cancer in the world, but in India and other developing countries cervical cancer is the leading cause of morbidity and mortality. Women in these countries usually present to the clinic only when they have symptoms, such as pain, discharge and/or abnormal bleeding.[2]

Cancer of cervix is readily preventable, by early detection and appropriate timely treatment of its precursor lesions by simple Pap screening test. Though Pap smear is a routine screening test, the overall sensitivity in detection of high grade squamous intraepithelial lesion (HSIL) is 70-80%.[3] The role of HPV in development of cervical cancer is proved beyond doubt. If Pap screening is associated with HPV-DNA testing then we can increase the sensitivity.[2] The epithelial changes can be treated, thus preventing cervical cancer.[4,5] Intensive screening programmes in various countries show a striking reduction in mortality from cancer of cervix.[1]

In general, in countries where Pap smear screening is routine, it is recommended that females who are sexually active should seek regular Pap smear testing. Guidelines on frequency vary from every three to five years. If results are abnormal, and depending on the nature of the abnormality, the test may need to be repeated in six to twelve months.[6]

In 1988, the Bethesda system of terminology has been introduced to sub-classify the lesions into grades: high grade and low grade Squamous Intraepithelial Lesions (SIL) for Pap smear reporting and some studies reported comparison of various terminologies.[7,8]

The Bethesda system for reporting the results of cervical cytology was developed as a uniform system of terminology that could provide clear guidance for clinical management.[9] The present study was intended to evaluate the pattern of cervical Pap smear cytology at a tertiary hospital and correlate it with clinical findings.

AIMS AND OBJECTIVES

This was a retrospective study aimed to evaluate all previously conducted cervical smears examined at a teaching tertiary hospital during a two year period. The present study was intended to evaluate the pattern of cervical Pap smear cytology at a tertiary hospital and correlate it with clinical findings.

RATIONALE OF STUDY

Cancer of the cervix is a global health problem, comprises approximately 12% of all cancers among women globally. In India and other developing countries cervical cancer is the leading cause of morbidity and mortality. Cancer of cervix is readily preventable, by early detection and appropriate timely treatment of its precursor lesions by simple Pap screening test. The present study is intended to evaluate the pattern of cervical Pap smear cytology at a tertiary hospital and correlate it with clinical findings. This study aims at presumptive identification of unrecognized disease by application of Pap test as a diagnostic procedure which can be applied rapidly and safely.

MATERIALS AND METHODS

This retrospective was conducted on patients to evaluate all previously conducted cervical smears of patients who attended the Obstetrics and Gynaecology outpatient department at AIIMS Patna during the period Jan 2014 to Jan 2016. All patients who had undergone Pap smear testing during this period were included in the study.

Smears were taken of all patients who presented with complaints of vaginal discharge, post-coital bleeding, intermenstrual bleeding, and pain in lower abdomen as well as those who had no complaints and had come for routine cervical screening. Relevant clinical data and Pap smear reports were obtained and data was noted in a structured proforma.

The smears were obtained with the help of Ayer's spatula and cytobrush to collect specimen from the squamo-columnar junction. The cellular material obtained on the spatula and cytobrush was quickly smeared on a clean glass slide. Two smears were prepared for each case. The glass slides were then fixed immediately by immersing them into the Koplin jar containing 95% ethyl alcohol. The smears were stained with Papanicolaou stain. After mounting the slides with DPX (Distrene dibutyl phthalate xylene), slides were examined under light microscope and were reported by pathologists according to the 2001 Bethesda system.

PROFORMA

Name …….. Age…… Address……. Id No. ……..

Chief Complaints: ……..

Duration of complaints: ……..

Menstrual history:……

Obstetric history:……..

Past history: ……

Family history: ……

Personal history: ……. ……

Examination: General examination:

P/A findings:

Local examination : p/s

p/v

Clinical diagnosis :

Treatment given:

PAP Report:

Further management:

Follow up:

OBSERVATIONS AND RESULTS

In the present study, a total of 1689 cervical and vault smears were studied. The age of patients ranged from 19 years to 80 years with mean age being 37.5 years. The major presenting complaint was discharge per vaginum followed by pain abdomen and then menstrual complaints.

Out of 1689 cases, epithelial cell abnormality (premalignant lesion) was diagnosed in 15 cases. Out of these, 9 were ASC-US, 2 were ASC-H, 2 were diagnosed as Atypical glandular cells (AGC), 1 was mature squamous cells and 1 granulomatous cervicitis. 895 cervical smears and 7 vault smears were diagnosed to be inflammatory (non specific).134 smears were diagnosed with Bacterial vaginosis, 12 with candidiasis and 2 with Trichomonas infection. 559 cervical smears and 16 vault smears were reported as NILM (no intraepithelial lesion or malignancy). 36 cervical and 1 vault smear were reported as atrophic. 10 smears were inadequate and 2 were unsatisfactory for evaluation. Table 1 shows age wise distribution of cytologic diagnosis and percentage of neoplastic and non-neoplastic lesions is given in Table 2.

Table 1: Agewise distribution of cytologic lesions on Pap Smears.

Age in years	NonNeoplastic Lesions(no.of cases)	Percentage (%)	Neoplastic lesions(no.of cases)	Percentage (%)
20-30	507	30%	0	0%
31-40	628	37.1`%	11	0.65%
41-50	371	22%	3	0.17%
51-60	126	7.4%	0	0%
61-70	42	2.4%	1	0.059%

TABLE 2: Distribution of Neoplastic and Non-neoplastic Lesions on Cytology

Neoplastic lesions	1. Malignant 2. Premalignant	0 15
	2a HSIL	2
	2b LSIL	13
Non Neoplastic lesions	1. NILM 2. Reactive changes 3. Non-specific inflammation 4. Squamous metapasia 5. Atrophic 6. Reactive endocervical cells 7. Specific infections	575 0 902 1 37 0 148
	6a Trichomonas	2
	6b Candida	12
	6cBacterial vaginosis (BV)	134

Cytology: High grade Squamous Intraepithelial lesion (HSIL): Two cases showed dysplastic cells with marked increase in nuclear cytoplasmic ratio. Cells had moderate to scanty cytoplasm with hyperchromatic pleomorphic nucleus. Chromatin was coarse and irregularly clumped with inconspicuous nucleoli. Also seen were normal superficial and intermediate

squamous cells. Background showed a few inflammatory cells. All these were given a diagnosis of HSIL.

Low grade squamous intraepithelial lesion (LSIL): 13 cases were grouped into this category. All cases showed cellular smears with few clusters of atypical cells showing mild increase in nuclear cytoplasmic ratio. Nucleus was slightly enlarged with fine granular chromatin. Few cells had hyperchromatic and irregular nuclei with perinuclear halo (koilocytic change). Background showed acute inflammatory cells.

Non neoplastic lesions: Cases in this category predominantly showed superficial and intermediate cells in sheets and singles with a few showing squamous metaplastic cells, reactive endocervical cells and parabasal cells. Almost all cases showed dense to moderate amount of neutrophils. Two cases showed Trichomonas vaginalis and 12 showed candidiasis.

DISCUSSION

In India, till date there has been no well organized comprehensive population based screening programme for cervical cancer. As a result, asymptomatic women are not screened for cervical cancer, even once in their lifetime.[10]

However, many efforts are being carried out to formulate a uniform healthy strategy in low resource countries like, India by WHO through IARC and ACCP (International agency for Research in Cancer, Alliance for cervical cancer prevention) and Government of India through ICMR and NCCP.

The National Cancer Control Programme (NCCP) was started in 1975-76 by government of India. Under NCCP, 1 lakh pap smear kits for early detection of cancer cervix in women were supplied to 12 Regional cancer centres (RCC) in 1998-99. Training of trainers programme regarding awareness, prevention, early detection and treatment in Breast and Cervical cancers in women was held at TMH, Mumbai and CNCI Kolkata in 1999 and orientation training workshops for cytopathologists regarding quality assurance of Pap smear test were carried out at 5 RCCs.[11]

In November 2005 (in collaboration with NCCP and WHO) the department of Cytology and gynaecological Pathology at the Postgraduate institute of Chandigarh organized meeting of the experts and proposed NCCP guidelines for cervical cancer screening programme to be

implemented in areas which do not have the capacity for undertaking Pap smear based cervical screening programmes for large populations.

The Indian Medical council introduced National Cancer Registry Programme (NRCP) in December 1981. Initially the programme began with setting three population based cancer registries (PBRC) at Bangalore, Chennai and Mumbai and three hospital based cancer registries (HBRCs) at Chandigarh, Dibrugarh and Thiruvananthapuram. And now there are fourteen PBCRs under NCRP network. The main function of these PBCRs is to provide reliable data on the magnitude and patterns of cancer that help in undertaking epidemiological studies and designing, planning, monitoring and evaluation of cancer control activities under the NCCP.

WHO in coordination with IARC and ACCP is also helping the low resource countries to fight against cervical cancer. During 1999 to 2003 the IARC/WHO have started several studies in many states in India. The objectives of these studies were to know the accuracy of different screening tests available for cervical cancer, cost effectiveness of each test, cure rates of CIN, side effects and complications of treatment of CIN, and determinants of participation. Conclusion of these studies were as follows: Cytology as a single test had a better sensitivity, specificity and predictive value and in a low resource country which cannot afford for cytology based screening tests, visual screening methods are promising methods for the early detection of cervical cancer.[12]

The major drawback of visual tests is its lower specificity which means large number of women may receive unnecessary treatment or additional investigations. Developing countries can implement good quality cytology even in rural setting with reasonable investment.[13]

The sensitivity of HPV ranged from 45.7-80.7% and its specificity was significantly higher than that of visual tests, but lower than that of cytology. Due to high cost and requirement of sophisticated laboratory HPV test cannot be used in low resource countries.[14] Apart from these sanctioned projects in selected districts, Government of India is not intending to introduce population based screening in almost the entire country.

Recently, Government of India initiated an integrated National Programme for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) in 100 districts of 21 states in 2011. National Cancer Control Programme has been integrated under

NPCDCS. It is painful that cervical cancer screening and prevention is neglected against other bigger problems like diabetes and stroke in this ongoing programme (NPCDCS Guidelines).

It is needless to say the importance of preventing a cancer than treating it. The best way of treating a cancer is to prevent its occurrence. There are many cancers which can be diagnosed at early asymptomatic stage. Cervical cancer being one among those is an ideal disease for screening. Screening can be achieved in two ways: 1. Nationally or regionally organized screening programmes, which aim at covering >80% of the population at risk or 2. Opportunistic screening programs are focused on women who are visiting health services for other reasons.[15]

The mean age in the present study was 37.5 years which was comparable to the study of Chang et al[16] in which the mean age was 37 years. The mean age was slightly higher in other studies.[17-18]

The percentage of LSIL and HSIL was 86.6 and 13.3 respectively. However other studies have reported a higher percentage of HSIL compared to LSIL. This probably indicates variation in individual interpretation of SIL. Mean age of preinvasive lesions was 42.46 years in the present study. Maximum cases of dysplasia were detected in 31-40 years age group.

The major presenting complaint was discharge per vaginum(48%) followed by abdominal pain (27%). Others presented with irregular bleeding per vaginum, postcoital bleeding or postmenopausal bleeding.

In conclusion, 15 patients were found to have neoplastic lesions on cytology in the present study and all of them were subjected to further investigations like coloposcopy and biopsy to confirm the diagnosis and offer treatment. In India with lack of centrally organized population based screening program for cervical cancer, we hope such opportunistic screening to cover more women at risk by counseling and encouraging them to involve in a screening program regularly may help to reduce the country's burden of cervical cancer. However, opportunistic screening may not be as efficient as organized programme due to low coverage of target population.

Hence for a country like India with great burden of carcinoma cervix population based centrally organized screening programme is imperative to reduce mortality and morbidity of

cervical cancer. Limitation of the present study was that other screening tests like VIA (visual inspection with acetic acid test) and HPV DNA or VILI (visual inspection with Lugol's Iodine) was not done.

Until the time centrally organized screening programmes for cervical cancer are established in India, arrangements should be made for hospital based opportunistic screening for all women attending hospitals.

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