



A STUDY ON CERVICAL CANCER SCREENING IN ASYMPTOMATIC WOMEN USING PAPANICOLAOU SMEAR IN SRI KRISHNA MEDICAL COLLEGE, MUZAFFARPUR

Pathology

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ABSTRACT

Introduction: cervical cancer is the most common and preventable genital tract cancer in developing countries. Cervical cancer is a leading cause of mortality and morbidity among women globally. Papanicolaou smear study is a simple and cost effective screening test for cervical cancer.

Methods: This cross-sectional study was conducted at Department of Pathology, Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar, India from January 2018 to December 2019 (2 years), all women coming for a Pap smear examination in a department of Pathology, Sri Krishna Medical College and Hospital, Muzaffarpur during study period were included.

Results: Majority (90%) of the pap smears were from the reproductive age group (18- 50 years). 0.73% of pap smears were from the patients aged below 18 years and 0.45% from the patients aged above 70 years.

Conclusion: Pap smear is the simple, easy and cost effective screening tool to detect premalignant and malignant cervical lesions, and reduce the mortality due to cervical cancer by early diagnosis and treatment.

KEYWORDS

Pap smear, LSIL, HSIL, ASCUS, Cervical cancer

INTRODUCTION

In women, cervical cancer is very common and preventable cancer in developing countries. It is more than 10 lacs [1]. According to the report published by the World Health Organization (WHO), 80% of deaths from cervical cancer were from developing countries because of poor screening facility in the society as well as poor awareness among women. By organizing screening programs in developing country by government the incidence of cervix cancer can be reduced. More so, it can be detected much earlier and treated as well. Among the Indian women, cervical cancer is the most common genital tract cancer. Many studies shown that in India, 126,000 new cases of cervical cancer occur every year [2, 3]. Unlike most other malignancies, cervix cancer is easily detected and readily preventable disease.[4] Cervical cancers in their early stage of development is completely and easily treatable as the cancer cells are localized and confined to the surface of the cervix and have not spread into the adjacent tissues. Once cancer metastasizes to other parts of the body, the disease becomes more difficult to treat and increases morbidity and mortality.

Papanicolaou's smear (Pap smear) has been the most widely used screening method for cervical cancer for several years. The Papanicolaou (Pap) test is a screening test which is performed by scraping the cells from the uterine cervix. This test was introduced in 1941, by George Papanicolaou as a cervical cytology screening test [5]. Pap smear test is a rapid, cost effective outpatient department procedure which is capable of detecting neoplastic as well as non-neoplastic cervical lesions at the earliest. Pap smear screening has sensitivity of 50%–75% and specificity of 98%–99% [6].

METHODS

This cross-sectional study was conducted at Department of Pathology, Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar, India from January 2018 to December 2019 (2 years), all women coming for a Pap smear examination in department of Pathology, Sri Krishna Medical College and Hospital, Muzaffarpur during study period were included. Informed and written consent has been obtained after explaining about the study. Proforma was filled and data were collected. The age of the women ranged from 18 to 70 years. Detailed history including medical, menstrual history, marital history obstetric history, vaginal discharge, sexual history, postcoital bleeding, intermenstrual bleeding, postmenopausal bleeding, and educational history was taken.

A total of 1100 pap smears were reported in the study period. After receiving, the slides were fixed in 95% ethyl alcohol and stained with Papanicolaou stain by cyto technicians. Slides were then mounted with

DPX (Distrene Dibutyl phthalate Xylene) and examined. The result of these pap smears was based on 2001 Bethesda System for Reporting Cervical Cytologic Diagnoses. All the data were manually collected and subsequently analysed.

RESULTS

A total of 1100 pap smears were analysed during the study period. The age of the patients in the present study were ranged from 18 to 70 years (Table 1). Majority (90%) of the pap smears were from the reproductive age group (18- 50 years). 0.73% of pap smears were from the patients aged below 18 years and 0.45% from the patients aged above 70 years. Cervical Pap smear findings were tabulated in Table 2.

Table-1: Age wise distribution of total number of patients

Age group	Number of patients	Percentage (%)
< 18	8	0.73%
18-50	990	90%
50-60	80	7.27%
60-70	17	1.55%
>70	5	0.45%

Table-2: Pap smear findings according to 2001 Bethesda system

Pap smear findings	Number of patients	Percentage (%)
Negative for intraepithelial lesion or malignancy	385	35%
Atrophic smear	94	8.55%
Unsatisfactory for evaluation	22	2%
Inflammatory smear	562	51.09%
Candidiasis	5	0.45%
Shift in vaginal flora suggesting bacterial vaginosis	8	0.74%
Trichomonas vaginalis	4	0.36%
Low grade intraepithelial lesion (LSIL)	7	0.64%
High grade intraepithelial lesion (HSIL)	4	0.36%
Atypical squamous cells of undetermined significance (ASCUS)	5	0.45%
Atypical glandular cells	1	0.09%
Vault smear	3	0.27%
Total	1100	100%

There were 2% cases of unsatisfactory smear. The most common cause for unsatisfactory smear was inflammation (55.3%) where more than 75% of squamous epithelial cells were obscured. 34.2% cases showed absence of endocervical/ transformation zone component, 10.5% showed obscuring blood and low squamous cellularity.

51.09% cases were inflammatory smears and 35% were Negative for Intraepithelial Lesion or Malignancy. Epithelial cell abnormalities were seen in 1.54% cases which include LSIL (0.64%), HSIL (0.36%), ASCUS (0.45%) and atypical glandular cells (0.09%). LSIL was most commonly seen in reproductive age group (15- 50 years) and HSIL was most commonly seen in peri menopausal age group (51-65 years). Atrophic and reactive cellular changes were seen in 8.55% and 0.09% respectively. Organisms associated lesions like candidiasis (0.45%), bacterial vaginosis (0.74%) and trichomonas vaginalis (0.36%) were also seen in our study.

DISCUSSION

Despite widespread screening and acceptance of the Pap smear, morbidities and mortalities from cervical cancer has not been eliminated. In a study on 1,867 elderly women in the United States died from cervical cancer in 1986[7]. Cervical cancer is the most widely screened cancer in both developed and developing countries. Nayir et al [8] in their study showed that the population-based cervical cytology screening programs using Pap smear testing every 3–4 years have reduced cervical cancer incidence and mortality by up to 80% in developed countries in the last five decades.

In our study of cervical Pap smear cytology, age of the patients ranged from 18 to 70 years was included and the predominant population in the present study was between 18- 50 years (90%). This finding was similar to the studies done by Pudasaini et al, Hirachand et al, Ranabhat et al [9, 10, and 11].

The present study shows 0.73% of pap smears were from the patients aged below 18 years than other age groups. This similar result (0.6%) was seen in the study done by pudasaini et al in Nepal on cervical Pap smear in a tertiary hospital. However, in the studies done in mid-western part of Nepal and Bangladesh, there were no cases below 20 years [12].

There were 2% cases of unsatisfactory smear in the present study and the most common cause for unsatisfactory smear was obscuring dense inflammation and blood, absence of endocervical or transformation zone component and low squamous cellularity. This is similar to the study done in Pakistan (1.8%) by Bukhari et al [11]. Lots of variation regarding unsatisfactory smear was seen in several studies conducted in different places. Study done in Kathmandu revealed 0.3% of unsatisfactory smear, which is lower than in our study [10]. In contrast to our study, the incidence of unsatisfactory smear was quite high in the studies conducted by Patel et al, Khan et al respectively (11.9%, 9.5%) [14, 15]. In the present study, Negative for Intraepithelial Lesion or Malignancy was seen in 35% cases. Whereas the studies done by Vaghela et al and Saha et al, Negative for Intraepithelial Lesion or Malignancy were 47% and 50.6% respectively, which is higher than in our study [16,17].

Epithelial cell abnormalities represents 1.40% cases in our study which includes low grade squamous intraepithelial lesion (LSIL), high grade squamous intraepithelial lesion (HSIL), atypical squamous cells of undetermined significance (ASCUS) and Atypical glandular cells (AGC). Other studies had shown that the prevalence of epithelial cell abnormalities were different in different studies done by Ranabhat et al (1.7%)[12]. Low grade squamous intraepithelial lesion (LSIL) in our study was 0.64%, which is comparable to the other studies conducted by pudasaini et al, Hirachand et al respectively (0.2%, 0.15%) [9,10]. High grade squamous intraepithelial lesion (HSIL) was seen in 0.36% cases in our study that correlates well with the other Studies done in Nepal and India (0.29%, 0.7%) [10, 12,]. Cases of ASCUS (0.45%) were also quite comparable to other studies done by Hirachand et al, Ranabhat et al respectively (0.51%, 0.23%) [10, 12].

LSIL and HSIL were most commonly seen in reproductive age group (18-50 years) and perimenopausal (46-55 years) age group respectively who correlate well with the studies done by Pudasaini et al and Hirachand et al [9, 10]. Other studies conducted by Yeasmin et al revealed that epithelial cell abnormalities were seen in an age group 40 years and above [13]. Atrophic changes were seen in 8.55% cases in the present study whereas the studies did in Bangladesh show atrophic changes in 3.0% [13]. Bacterial vaginosis (0.74%) was common among the organism associated lesion in our study. Other studies by Vaghela et al, Saha et al revealed 1.6%, 7.1% cases of bacterial vaginosis respectively [16, 17]. Trichomonas vaginalis was seen in 0.36% cases which are in contrast to other studies, where there were 3.2% [17].

CONCLUSION

Pap smear is the simple, easy and cost effective screening tool to detect premalignant and malignant cervical lesions, and reduce the mortality due to cervical cancer by early diagnosis and treatment.

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