

CERVICAL CYTOLOGY ASSOCIATED WITH LEUCORRHEA IN RURAL WOMEN OF INDIA

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ABSTRACT

Vaginal discharge is the major gynaecological symptom complained by the rural women in India. The detailed cytological investigation is thus necessary to find out the relation between this symptom with predisposing factors of carcinoma cervix.

Cervical cancer screening is in progress in the villages of Lucknow West under the auspices of Era's Lucknow Medical College and Hospital Lucknow since May 2013 and till November 2018, a total of 2665 women have been cytologically examined. The vaginal discharge was complained by 1024 of these women and cytological findings have been analyzed in them in relation to different predisposing factors of cervical carcinogenesis.

Inflammatory smears was found to be the major component of cytology material in 1024 leucorrhic women (49.5%) while squamous intraepithelial lesions of cervix (SIL) was seen in 19.4% of cases. The inflammation was specific in 50.3% of cases and sexually transmitted diseases (STD) like Cocobacilli and Candida was most commonly associated with the inflammation (38.2% and 8.6% respectively). The vaginal discharge was predominantly associated with erosion cervix and hypertrophic cervix. Though the majority of leucorrhic women were from young and sexually active group, the SIL incidence showed rise with increasing age. The SIL incidence showed erratic trend being maximum with single parity and declined afterwards.

The vaginal discharge was found very common in young and sexually active rural women. A high STD rate was also seen associated with leucorrhea. The poor personal genital hygiene due to illiteracy and poverty may be the cause of the persistent vaginal infections leading to the vaginal discharge. A high SIL rate associated with vaginal discharge indicates its potentiality as major risk factor of cervical cancer and hence cytological evaluation of cervical smears is mandatory in these women.

KEYWORDS: Vaginal discharge, Rural women, SIL, STD

INTRODUCTION

Illiteracy and poverty are two prominent factors affecting the living conditions of rural women in India. This may be also the cause of poor personal genital hygiene which leads to the occurrence of different types of vaginal infections which persist as they remain undetected and untreated due to lack of medical amenities. Rural cervical cancer screening is in progress in the villages of Lucknow West under the auspices of Era's Lucknow Medical College and Hospital Lucknow since May 2013 and till November 2018, a total of 2665 women have been cytologically examined attending the camps organized after proper counseling and motivation of women. Vaginal discharge has been found in 1024 of these women (38.4%). Most of these women have been given treatment according to the cytological investigation reports. Leucorrhea may be the clinical evidence of

infection and hence can be easily treated. Moreover, most of the pre-malignant lesions of the cervix and subsequent occurrence of carcinoma cervix are associated with discharge and hence these can be easily prevented if detected early and treated adequately.

Since vaginal discharge is the common symptom reported by Rural women and mostly by the young sexually active group upto 30 years of age, we thought it interesting to investigate different predisposing factors of cervical carcinogenesis in these women. The findings are analyzed and presented in this paper.

MATERIALS AND METHODS

Cervical cancer screening program is being carried out by organizing camps in the villages of Kakori and Malihabad blocks of Lucknow West for the last more than last five years. Till November 2018 total 158 camps have been organized by counseling and

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motivating the women. These women get thoroughly interrogated for any Gynaecological complaints and as told by them vaginal discharge was found to be different types- white discharge, greenish discharge, yellow discharge, blood stained discharge and fowl smell discharge. Informed consent of these women were taken on the Pap smear forms in the form of signature if they are literate or thumb impression in case of illiteracy. The Pap smear is collected by the Gynaecologist in the camp and stained according to Papanicalao's technique. The cytopathological changes observed in the cervical smears were graded according to the revised Bethesda system of classification of reporting cervical smears (1). The cytology reports were delivered to the women explaining them the line of treatment which was also written on the back of the report in Hindi. They were also told about scheduled of followup.

The ethical clearance was taken from the Ethical Committee of the college prior to the starting of Cancer Screening Program.

RESULTS

The cytological pattern observed in the 1024 women complaining of vaginal discharge is shown in Table 1. As expected, the high percentage of cytology smears in the women complaining of vaginal discharge were inflammatory (49.5%). Normal cytology was seen in only 30.8% of these cases. SIL was detected in 199 women with vaginal discharge (19.4%). However, most of them were of low degree (LSIL-95.9%). The SIL rate has also been analyzed in the remaining 1641 women with no complaints of vaginal discharge out of the total 2665 women registered. The SIL rate was found to be 17.5% (288) cases in this category than 19.4% observed in the leucorrhic women. The SIL rate was thus higher with vaginal discharge.

Carcinoma cervix was seen in only two cases (0.2%) and both of them complained of blood stained discharge. Out of the 1024 women complaining of vaginal discharge, 516 were specific (50.3%) associated with presence of some pathogen and the remaining 49.7% were non-specific. In the 516 women in whom the vaginal discharge was specific, following STDs were found-

Cytological diagnosis	Number of cases	Percentage
Normal smears	316	30.8%
Inflammatory smears	507	49.5%
SIL	199	19.4%
Carcinoma cervix	2	0.2%

Table 1: Cytological Diagnosis In 1024 Women Complaining Of Vaginal Discharge

Candida albicans	-	89/1024(8.6%)
Trichomonas vaginalis	-	26/1024(2.5%)
Condyloma (HPV)	-	7/1024(0.6%)
Herpes simplex	-	2/1024(0.2%)
Cocobacilli	-	392/1024(38.2%)

Cocobacilli was the commonest gonococcus organism infecting the female genital tract in the women complaining of vaginal discharge. Since this infection is commensal in the female genital tract, hence, their acute infection was only reported and antibiotic treatment was given to these patients to eliminate the infection. Candida albicans, a fungus, was the next common infection associated with vaginal discharge (8.6%) and anti-candidal therapy was given to these patients for treatment of Candida. Trichomonas vaginilis, a protozoan, was the third organism associated with vaginal discharge (2.5%) and anti-trichomonal regimen was advised to the affected women. The viral STDs- Human papilloma virus (condyloma) and Herpes simplex virus were less common in leucorrhic patients (0.2%-0.6%) and such women were called for HPV detection and laser treatment in the hospital. These findings are summarized in the Table 2 along with the incidence of SIL with different types of STDs. The SIL rate was maximum with viral STDs ranging from 42.8% (HPV) to 50% (HSV). Among the non-viral STDs, the incidence of SIL was highest with Candida albicans (32.5%) followed by trichomonal infection (19.2%) and lowest in the cocobacilli infected women (17.1%). The higher incidence of SIL with STD infection clearly indicates that there is relationship between cytopathological changes in the cervical epithelium with these infections which needs further confirmation and adequate treatment to minimize the risk of development of premalignant conditions of carcinoma cervix.

STD organism	Number & Incidence	SIL rate
Candida albicans	89(8.6%)	29(32.5%)
Trichomonas vaginilis	26(2.5%)	5(19.2%)
Condyloma (HPV)	7(0.6%)	3(42.8%)
Herpes simplex	2(0.2%)	1(50%)
cocobacilli	392(38.2%)	67(17.1%)

Table 2: Incidence Of Different STD Infections In 1024 Women Complaining Of Vaginal Discharge Alongwith SIL Rate

The clinical status of cervix was also investigated in 1024 women complaining of vaginal discharge to see if there is any relation of this symptom with severity of the cervical lesion. The SIL incidence was also analyzed with different types of clinical lesions and shown in Table 3.

Clinical lesions of cervix	Number of cases	Women showing vaginal discharge	Incidence of SIL
Erosion cervix	229	109(47.5%)	35(15.2%)
Hypertrophic cervix	35	17(48.5%)	6(17.1%)
Cervix bleeds on touch	19	6(31.5%)	3(15.7%)
Others (cervicitis, cystocoele etc)	78	11(14.1%)	2(2.5%)

Table 3: Relation With Clinical Lesions Of Cervix In 1024 Leucorrhic Women

As expected the vaginal discharge was highly associated with erosion cervix (47.5%) and hypertrophic cervix (48.5%). With bleeds on touch cervixes, the percentage of vaginal discharge was seen in 31.5% of cases while in other lesions like cervicitis, cystocoele etc. the percentage was 14.1%. The SIL incidence was almost identical with all these lesions of cervix except cervicitis and cystocoele etc. which displayed lowest SIL rate of 2.5%. Thus the cervical lesions like erosion or hypertrophic cervix should be adequately treated to avoid any onset of leucorrhea in these subjects.

The distribution of 1024 vaginal discharge cases in different age groups and the SIL incidence is shown in Table 4. As expected, the maximum number of women complaining of vaginal discharge were younger sexually active women (54.5%) followed by middle aged women (34.2%) and lowest in the old age group beyond 40 years (11.2%). The SIL rate showed rise with

Age group	Number and incidence	SIL rate
21-30 years	559(54.5%)	96(17.5%)
31-40 years	351(34.2%)	72(20.5%)
Above 40 years	114(11.2%)	29(25.4%)

Table 4: Age Group Of 1024 Women Complaining Of Vaginal Discharge

increase in age in the leucorrhic women being highest (25.4%), in the older women beyond 40 years of age.

The number of women showing vaginal discharge in different parity groups are shown in Table 5. The percentage of leucorrhic subjects showed rise from nulliparity (5.1%) to 71.6% in multiparous women (734 women). The SIL rate was very erratic in these women as the maximum incidence was seen in Para 1 women (27.1%) after which it declined to 18.8% in the multiparous women.

Parity group	Number and incidence	SIL rate
Nulliparity	53(5.1%)	7(13.2%)
Parity 1	81(7.9%)	22(27.1%)
Parity 2	156(15.2%)	31(19.8%)
Parity 3 and above	734(71.6%)	139(18.8%)

Table 5: Parity Of 1024 Women Complaining Of Vaginal Discharge

Literacy status was also analyzed in 1024 women complaining of vaginal discharge, only 410 of these were found literate and the remaining 614 were illiterate (59.9%). The poor personal genital hygiene associated with the illiteracy may be the reason of persistent vaginal infections causing vaginal discharge

Comments

A total of 1024 women have complained of vaginal discharge out of 2665 women cytologically examined during a cervical cancer screening program conducted in the villages of Lucknow West for the last more than 5 years. Majority of the cervical smears in these 1024 women were found to be inflammatory (49.5%) and the inflammation was specific in half of them (50.1%). Coccobacilli infection was very common (38.2%) in this group and since this organism is commensal, only its acute infection was reported and treated. Among the pathogenic STDs, Candida was common (8.6%) followed by trichomonal infection. On contrary other workers like Srivastava et al, Nikumbh et al, Rajput et al and Arora et al have reported a high incidence of trichomonal infection in rural women than Candida (2,3,4,5).

A high incidence of SIL was found in the 1024 women complaining of vaginal discharge (199-19.4%). However, only 8 of these were HSIL and the remaining 191 were LSIL. The SIL rate was higher as compared

to 17.5% noticed in the remaining 1641 women with no complaints of discharge in the study. The reason for high SIL rate associated with vaginal discharge in the rural women may be due to the fact that majority of them are illiterate, poor and are not aware of personal genital hygiene. This leads to the development of vaginal infections which persist for long time as they remain undetected and untreated. Many workers (Thulesreedharan et al, Rai choudhary et al, Wang et al and Zhang et al) have also emphasized illiteracy as a contributing factor in the development of carcinoma cervix in the rural women (6,7,8,9).

A high SIL rate have been found associated with non-viral and viral STD infections in 1024 leucorrhic women. This may be due to the poor genital hygiene and lack of education which is a reason for the persistent vaginal infections and consequent STD infection.

The present study revealed clinical lesions like erosion cervix and hypertrophic cervix as major lesions manifesting the vaginal discharge. Hence these lesions should be adequately treated whenever detected during screening to avoid any onset of vaginal discharge. The SIL rate was also higher in these women ranging from 15.2% to 17.1%. Nikumbh et al and Rajput et al have also reported a high incidence of erosion cervix in rural women

As expected, the maximum number of women complaining of vaginal discharge were from the young and sexually active group between 21-30 years (59.5%) and lowest in the older women beyond 40 years of age (11.2%). This is obvious because the chances of STD infection is higher at younger age. The SIL rate showed rise with increasing age in the leucorrhic patients being highest in the older women above 40 years of age. This has also been reported by Thulesreedharan et al. As regards parity, the maximum number of cases with vaginal discharge were multiparous (71.6%) and the SIL rate showed rise with increasing parity. This has also been reported by Dasari et al, Thulesreedharan et al, Makuza et al and Ganeshan et al (10,11,12,13). However, the SIL rate was found to be higher with single parity (27.1%) in the present study and it may be due to that the younger women with low parity complaining of vaginal discharge may be more prone to the onset of pre malignancy than the women with high parity.

The present study has highlighted a high prevalence of vaginal discharge among the rural women. Poor genital hygiene due to illiteracy and poverty prevailing in the large number of rural women population may lead to the vaginal infections which persist being undetected and untreated. Further the vaginal discharge was more prevalent in younger sexually active women and of low

parity which may be more prone to the development of premalignancy. Hence such category of women should be specially looked out for any precancerous lesions of cervix and this should be taken as the major risk factor for development of carcinoma cervix in rural women. There is urgent need of increasing awareness of different risk factors of cervical cancer among rural women which can be achieved by introducing health education as integral part of different levels of health care system. The literacy rate in rural women may be increased by the educated women in the villages who could tell them the different risk factors of carcinoma cervix which they can disseminate to other women particularly young ones.

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