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Prevalence of Precancerous Cervical Lesion in Women Attending Cervical Cancer Screening Programme at a Tertiary Level Hospital

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Abstract

Introduction: Cervical cancer is the second leading cause of cancer deaths in women in developing countries, and their incidence can be reduced by early detection and treatment of related precancerous lesions. Visual inspection with acetic acid (VIA) screening test is common method of finding precancerous cervical lesion. The aim of this study was to determine the prevalence of precancerous cervical lesions in women attending the cervical cancer screening program at a tertiary-level hospital.

Methods: This retrospective, cross-sectional study (record review) was conducted from June to October, 2024, among women who attended cervical screening at the Maternal and Child Health (MCH) clinic of Rapti Academy of Health Sciences (RAHS) from April, 2023 to April, 2024. After obtaining ethical clearance from the Institutional Review Committee of RAHS (IRC RAHS), data on the participants' age, residence, ethnicity, and other reproductive morbidities were retrieved from hospital records.

Results: The hospital records of 1,055 women were analyzed in this study. The mean age of the participants was 37.91±10.41 years, with more than one-third (36.5%) in the age group of 31-40 years. Among those who underwent cervical screening, the prevalence of precancerous lesions was 4.4%. No significant associations were found between age (p=0.55), residence (p=0.91), ethnicity (p=0.055), or other reproductive morbidities and the prevalence of precancerous lesions at the 95% confidence level.

Conclusion: The prevalence of precancerous cervical lesions was low; however, the findings highlight the need for establishing regular screening programs at the community level.

Keywords: precancerous cervical lesion; cervical screening; VIA

Introduction

Precancerous cervical lesions, or intraepithelial lesions, are cellular abnormalities of the cervix that may eventually develop into cervical cancer.[1] Cervical cancer is the second leading cause of cancer-related deaths among women in developing countries and is the most frequent cancer among women in Nepal, despite being a preventable disease.[2] The World Health Organization (WHO) recommends regular screening for precancerous lesions every three years in low-resource settings where HPV DNA testing is not widely available, for both the general female population and women living with HIV.[3] Since cervical cancer has a long precancerous phase, early detection of precancerous lesions and effective treatment can significantly improve the survival chances of women.[4]

Combining simple treatment methods with visual inspection of the cervix using acetic acid (VIA) is an efficient and affordable screening test for cervical cancer in low-resource settings, such as Nepal.[5] Several studies have investigated the prevalence of precancerous cervical lesions. For example, a study in North Ethiopia reported a prevalence of 6.7%.[6] Similarly, a study conducted at a hospital in Nepal found the prevalence of precancerous lesions through VIA to be 20%.[5] Another study at Chitwan Cancer Hospital reported an incidence of 2% of precancerous cervical lesions among 1,050 women

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screened.[7]

Effective screening and treatment of precancerous cervical lesions significantly reduce the public health burden of cervical cancer. While cancer screening services are available in Lumbini Province, data analysis has not been conducted. This study aimed to determine the prevalence of precancerous cervical lesions and assess their association with clinico-demographic factors in women attending the cervical cancer screening program at a tertiary-level hospital.

Methods

This analytical cross-sectional study conducted from June to October, 2024, utilized a retrospective record review design to assess the prevalence of precancerous cervical lesions and explore their association with selected clinico-demographic variables in women attending the cervical cancer screening program. The study was conducted at the Maternal and Child Health (MCH) clinic of Rapti Academy of Health Sciences (RAHS), which conducts cervical cancer screening using the Visual Inspection with Acetic Acid (VIA) method every Thursday. Findings from these screenings are recorded in the reproductive morbidity register.

Ethical clearance was obtained from the Institutional Review Committee (IRC) of RAHS prior to data collection. An official letter from the IRC RAHS (ref: 2486) was submitted to the MCH clinic to seek permission for accessing patient records. The study included data from all women who attended the cervical screening program at the MCH clinic between Baisakh and Chaitra, 2080. A total of 1,055 women's records were reviewed. Only complete records were included in the study, while incomplete records were excluded. Women with VIA-positive results were considered to have precancerous cervical lesions. Reproductive morbidities, as recorded in the reproductive morbidity register, included pelvic organ prolapse, vaginal infections, cervical infections, and erosions.

Data were extracted from the maternal mortality and morbidity register, thoroughly checked for completeness, and entered into SPSS version 16 for analysis. Descriptive statistics, including frequencies and percentages, were calculated to summarize the data. The association between clinico-demographic factors and the prevalence of precancerous cervical lesions was assessed using the chi-square test. The significance level was set at 0.05, corresponding to a 95% confidence interval (CI).

Results

A total of 1,055 women participated in this study. The mean age of the women was 37.91±10.41 years, with more than one-third (36.5%) falling within the 31-40 age group. The majority of women (93.6%) resided in municipalities or sub-metropolitan areas. Nearly equal proportions of women were from Brahmin/Chhetri (39.6%) and Janajati (40.2%) ethnic groups. Among those who underwent VIA screening, 29% had associated reproductive morbidities, including cervicitis (45.3%) and pelvic organ prolapse (43.6%) (Table 1).

Table 1: Socio-demographic characteristics (n=1055)

Characteristics	Frequency (n)	Percentage (%)
Age of mother in years		
<30	306	100
31-40	385	36.5
41-50	246	23.3
51-60	88	8.3
>60	30	2.8
Mean age±Standard Deviation: 37.91±10.41 years		
Residence		
Sub-metropolitan/ Municipality	988	93.6
Village municipality	67	6.4
Ethnicity		
Brahmin/Chhetri	418	39.6
Janajati	424	40.2
Dalit	169	16.0
Others	44	4.2
Reproductive morbidities (n= 307)		
Uterine prolapse	134	43.6
Cervical erosion/ cervicitis	139	45.3
Vaginitis	34	11.1

A total of 46 women had VIA-positive results, indicating a prevalence of precancerous lesions of 4.4% (Figure 1).

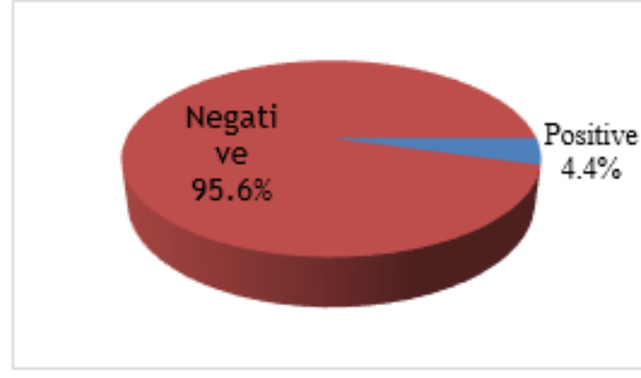

Figure 1: Prevalence of precancerous lesion (VIA status)

In this study, age (p = 0.55), residence (p = 0.91), ethnicity (p = 0.055), and other reproductive morbidities (p = 0.145) were not significantly associated with the prevalence of precancerous lesions at the 95% confidence level (Table 3).

Table 2: Association of clinicodemographic variables with prevalence of precancerous lesion

Sociodemographic characteristics	Prevalence of Precancerous Lesion		χ^2 – Test	
	Present n (%)	Absent n (%)	χ^2	p value
Age				
< 30 years	32 (4.6)	659 (95.4)	0.352	0.55
≥ 30 years	14 (3.8)	350 (96.2)		
Residence				
Sub metropolitan/ Municipality	43 (4.4)	945 (95.6)	0.02	0.91
Village municipality	3 (4.5)	64 (95.5)		
Ethnicity				
Brahmin/ Chhetri	12 (2.9)	406 (97.1)	3.68	0.055
Others	34 (5.3%)	603 (94.7%)		
Morbidity				
Present	9 (2.9)	298 (97.1)	2.11	0.145
Absent	37 (4.9)	711 (95.1)		

Discussion

The Visual Inspection with Acetic Acid (VIA) screening test is a common method for detecting precancerous cervical lesions. This study aimed to determine the prevalence of these lesions and assess their association with clinicodemographic factors in women attending the cervical cancer screening program at a tertiary-level hospital.

This study found the mean age of women attending screening to be 37.91±10.41 years, which is comparable to a study conducted in Chitwan, where the mean age was 38.2±9.73 years.[7] Among the reproductive morbidities in women, 43.6% had pelvic organ prolapse, which is similar to a study conducted in Bara, where 48.86% of women were affected by pelvic organ prolapse.[8]

The prevalence of precancerous lesions was found to be 4.4%, which is similar to the results from studies conducted in Abidjan, Côte d'Ivoire and Nepalgunj, Nepal, where the prevalences were 3.9% and 4.3%, respectively..[9,10] The study findings contrast with those from studies conducted at Kathmandu Medical College (KMC) Hospital[10] in Nepal and in West Ethiopia,[1] where the prevalences were 27.4% and 20%, respectively.

In this study, age, residence, ethnicity, and other reproductive morbidities were not associated with the prevalence of precancerous lesions, with p-values greater than 0.05. This finding is similar to a study conducted at B.P. Koirala Cancer Hospital, where factors such as ethnicity (p=0.26), marital status (p=0.293), and educational status (p=0.061) showed no significant association, except for the age of respondents (p<0.001) and their occupation (p<0.005).[7] A study conducted in Rwanda reported a prevalence of 5.9% for precancerous lesions and found a significant association between age and the initiation of sexual activity in women with the presence of precancerous cervical lesions.[11]

This study has several limitations. Its cross-sectional design limits causal inferences, and no significant associations were found between clinico-demographic factors and precancerous lesions, which may suggest missed risk factors. The exclusion of incomplete records could introduce selection bias, and the study's single-site nature limits its generalizability.

Conclusion

In this study, although the prevalence of precancerous cervical lesions was low and no significant associations were found with age, residence, ethnicity, or other reproductive morbidities, the findings highlight the importance of advising women with a positive VIA status to undergo mandatory follow-up screenings. Health education programs should be conducted at the community level to promote regular screening.

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