

Human Papillomavirus Status Among Women Presenting with Vaginal Discharge at Tertiary Care Hospital

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Abstract

Objective: To evaluate the frequency of human papillomavirus (HPV) in vaginal secretions of women complaining of abnormal vaginal discharge at the Department of Ob/Gyn LUMHS, Jamshoro.

Methodology: This cross-sectional study was conducted at the department of obstetrics and gynecology unit-IV LUMHS Jamshoro from November 2017 to October 2018. There were 202 sexually active women with vaginal discharge were included in this study. All demographic details and relevant reproductive health history were noted on a pre-designed Proforma. Cervical findings on clinical examination were also noted. After 10 days of test and smear results in the outpatient department and results of the test was noted on the Proforma.

Results: There were 202 sexually active women with vaginal discharge were studied, their mean age was 35.13±3.65 years. Human papillomavirus (HPV) in vaginal secretions of women presented with abnormal vaginal discharge was found in 23.27% of cases. Rate of HPV was significantly high among illiterate and low educated women, low social economic status, and those women who had multiple partners ($p < 0.05$). However, the rate of HPV was statistically insignificant according to age, parity, and duration of marriage ($p > 0.05$).

Conclusion: The frequency of human papillomavirus (HPV) in vaginal secretions of women complaining of abnormal vaginal discharge was high. HPV infection continues to be a significant public health problem. Therefore, it is important that genotypes causing cancer in every area be defined.

Keywords: Human papillomavirus, Vaginal discharge, Cervical cancer.

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Introduction

Human papillomavirus is a well-known pathogen for lower genital tract neoplasia¹, yet little is known regarding HPV prevalence in gynecologic patients, today it is widely accepted that the Human Papillomavirus (HPV) is the main causal factor for cervical cancer among women worldwide,^{2,3} and the cervical carcinoma is the commonest cause of women morbidity and mortality in developing nations.⁴ The incredible greater part of the sexually fit females and males are probably going to be infected via HPV in some measure once in their lifetime.⁵ Generally, by far most of all HPV contaminations (90%) are cleared without clinical infections, unexpectedly through invulnerable

reaction and don't persevere sufficiently long to cause oncogenic movement.⁵ It has been hard to carry out viable cytology basis screening in asset poor settings because of cost and organizational necessities, false-negative findings of the Pap test, and under screening at-risk population. New accessibility of prophylactic immunization has made cervical cancer control a predictable reality.⁶ However there are just restricted information accessible from Pakistan on HPV-type, and predominance tried by normalized conventions intended to decide numerous HPV types and diseases in cervical intraepithelial neoplasia (CIN) and invasive cervical malignancy.⁷⁻⁹ Whereas for the general population no data is available. HPV is commonest genital infection

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that affects almost 80% of sexually active women but only in 10 % of women, it persists.^{10,11} Determined infection of HPV is the dominant factor in cervical cancer development and is the precondition for high grade cervical lesions progressions. As the epidemiological study is out of our scope of training and the women were chosen with vaginal discharge as representative of the general population since vaginal discharge,¹² is one of the most frequent reasons for which women come to the hospital. Prevalence in this group was an addition to other similar studies and if a high prevalence is found then the preventive strategy can be developed. Since women with vaginal discharge comprise 2/3rd of our gynecology outpatient attendance, this study may help us to estimate the magnitude of HPV infection in our population. A high prevalence may not only establish the role of HPV testing as a primary screening tool but will also alert the health care managers to make a case for including HPV vaccination in the national immunization program.

Methodology

This cross-sectional study was conducted at the department of obstetrics and gynecology unit-IV LUMHS Jamshoro. The study duration was one year from November 2017 to October 2018. All the sexually active women with vaginal discharge, age 30 to 45 years and women who had no vaginal douche, or pessary insertion, within the last three days were included. All the known cases of cervical cancer, per vaginal bleeding, grossly visible candida discharge and pregnancy more than 12 weeks were excluded. Sample collection was done using open Epi software for sample calculation as the prevalence of HPV in women with vaginal discharge 15.5%³. By using the proportion of 95% confidence interval and 5% margin of error, the sample size stands to be n= 202. Non probability consecutive sampling test was used.

Their previous medical record was checked if available, all demographic details and relevant reproductive health history including duration of her symptoms, details of the type of vaginal discharge, her sexual history, partner's sexual behavior was taken and noted on a pre-designed Proforma. Cervical findings on clinical examination were noted and swab was taken from posterior fornix and placed in transport medium, i.e HPV (CE VID) kit cervical smear was obtained by inserting sterile cusco's speculum into the vagina, and obtaining cervical cells by rotating Ayre spatula into cervical os, the cervical specimen was placed on a slide, fixed and sent to

pathology department along with vaginal sample for HPV. She was called after 10 days with test and smear results in the outpatient department and results of the test were noted on the Proforma. Woman was informed of the test results and follow up by the consultant on duty. Data was analyzed by using SPSS software version 21.

Results

There were 202 sexually active women with vaginal discharge were studied, their mean age was 35.13±3.65 years, mean duration of marriage was 14.6±5.08 years and duration of vaginal discharge was 5.28±1.41 weeks. Most of the women had single and 16.83% had multiple life partners. Out of 202 women, 55.94% females were nulliparous, 25.74% were primiparous and 18.32% were multiparous. (Table I)

Variables	Statistics	
Age (Years)	35.1±3.65	
Duration of Marriage (years)	14.6±5.08	
Age at marriage (Years)	20.5±2.70	
Duration of Vaginal Discharge (in weeks)	5.28±1.41	
Educational level	Illiterate	27(13.37%)
	Primary to secondary	41(20.30%)
	Metric to intermediate	66(32.67%)
	Graduation to post-graduation	68(32.66%)
Socioeconomic status	Poor	121(59.90%)
	Middle	81(40.10%)
Parity	Nulliparous	113(55.94%)
	Primiparous	52(25.74%)
	Multiparous	37(18.32%)
Number or sexual or life partner	Single	168(83.17%)
	Multiple (two)	34(16.83%)

The frequency of human papillomavirus (HPV) in vaginal secretions of women presented with abnormal vaginal discharge was found in 23.27% cases out of 202. (Figure1)

Stratification analysis was performed and observed that rate of HPV was not statistically significant as per age groups (p=0.594). The rate of HPV was significantly high among illiterate and low educated women, low social-economic status and those women who had multiple partners (p=<0.05). However, the rate of HPV was statistically insignificant according to parity and duration of marriage (p=>0.05). (Table II)

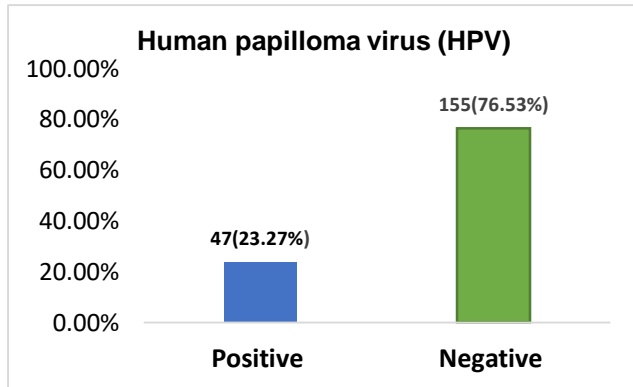


Figure 1. Frequency of human papilloma virus (HPV) (n=202)

Discussion

Cancer of the cervix is estimated as the 4th commonest malignancy among females around 528,000 new cases throughout the world.¹³ All around the world Papanicolaou smear is the screening method to evaluate the lesions of the cervix among females and the diagnosis of the genotypes of HPV is estimated complementary to the diagnosis clinically in cases affected by the preneoplastic and the neoplastic lesions.¹⁴ However, in this study the human papillomavirus (HPV) in vaginal secretions of women presented with abnormal vaginal discharge was found in 23.27% of cases. Consistently in a systemic literature survey of Vinodhini K et al¹⁵ reported that the human papillomavirus was highly prevalent in the developing countries as 42.2% compared to developed countries as

22.6%. On other hand in the study of Wagh P et al¹⁶ reported that the HPV infection was seen in 100 (7.1%) females. In other studies, demonstrated that the rate of the human papillomavirus among Chinese females was 15.71% in the last years, and 84.6% of the sexually active females were found with HPV infection at least once in their life, while some infections of human papillomavirus preserve and progress to cervical malignancy.^{17,18} However in the study of Hariri S et al¹⁹ demonstrated that the overall prevalence of any HPV type was 42.5% among 14–59-year-old US females and the HPV DNA positivity was measured via LA assay. In another study by Akarolo-Anthony SN et al²⁰ observed the overall incidence of human papillomavirus 37%. There was a big difference has been observed in the incidence of HPV in contrast to this study among females and this difference may because of variations in sample size, selection criteria, cultural and environmental variations. In this study, the mean age of the study participants was 35.13±3.65 years. Similarly, Akarolo-Anthony SN et al²⁰ reported that the average age of the females was 38 years. In another study of Bhatla et al³ reported that the women's age range was 30 to 74 years and most women were seen between age of 30 to 40 years with a median age of 36 years.

In this study the rate of HPV was significantly high among illiterate and low educated women, low social economic status and those women who had multiple partner ($p < 0.05$). However, the rate of HPV was statistically insignificant according to age, parity and duration of marriage ($p > 0.05$). Although the Hariri S et al¹⁹ demonstrated that prevalence of any HPV infection

Table II: Frequency of human papillomavirus (HPV) in vaginal secretions of women complaining of abnormal vaginal discharge as per effect modifiers (n=202)

Variables	Human papilloma virus (HPV)		Total	P-Value
	Yes	No		
Age groups	≤ 35 Years	27(21.3%)	100(78.7%)	0.594
	36 to 40 Years	15(28.3%)	38(71.7%)	
	41 to 45 Years	5(22.7%)	17(77.3%)	
Educational status	Illiterate	9(33.3%)	18(66.7%)	0.009
	Primary or secondary	16(39%)	25(61%)	
	Metric and Intermediate	13(19.7%)	53(80.3%)	
SES	Graduate and above	9(13.2%)	59(86.8%)	0.003
	Poor	37(30.6%)	84(69.4%)	
	Middle	10(12.3%)	71(87.7%)	
Sexual partner	Single	28(16.7%)	140(83.3%)	0.0005
	Multiple	19(55.9%)	15(44.1%)	
Duration of marriage	≤10Years	6(14%)	37(86%)	0.386
	11 to 20 Years	25(21.9%)	89(78.1%)	
	>20 Years	7(26.9%)	19(73.1%)	
Parity	Nulliparous	29(25.7%)	84(74.3%)	0.498
	Primiparous	12(23.1%)	40(76.9%)	
	Multiparous	6(16.2%)	31(83.8%)	

significant according to age of the women. On other hand Benard VB et al²¹ also found comparable findings. It is estimated that the HPV prevalence among females seen vary country to country, region within countries and subgroups of the population.^{22,23} These regional variations may be because of host associated factors. Furthermore, lower socioeconomic status, parity, cultural variations, multiparity, multiple sex partners, low educational level, prolonged uses of contraception, poor genital hygiene etc, are the possible factors of the elevated risk of cervical cancer among females having HPV infection.^{22,24}

Conclusion

It was concluded that the human papillomavirus (HPV) found to be highly prevalent among females complaining of abnormal vaginal discharge. HPV infection continues to be a significant public health problem. However large-scale studies are recommended on this subject and prevention strategies should be developed to prevent the morbidity and mortality caused by the human papillomavirus.

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