Study of HPV in Different Religious Groups

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Abstract

Background: Human Papilloma Virus (HPV) is a widely prevalent DNA virus that is sexually transmitted. Although the majority of infections are benign and transient, persistent infections are associated with the development of cervical cancers. Cervical cancer ranks as the most frequent cancer among women in India, occurring chiefly between ages 15 to 44 years.
Objective: The objective of our study is to compare the HPV Positivity in different religious groups particularly in Muslim and Hindu population.
Methods: 50 women of reproductive age group visiting the gynaecology outpatient department in maternity hospitals of Petlaburz and Sultan Bazaar, Hyderabad, Telangana were selected during the year 2009-12 and subjected to polymerase chain reaction, using GP5, GP6 primers to detect HPV.
Results & Interpretation: Out of 50 patients, 27 were Hindu's and among them 6 patients (22%) were HPV DNA positive and 23 patients were Muslims and among them only 1 patient (4%) was HPV DNA positive. Hindu women had a higher rate of HPV positivity in this study.
Conclusion: Genital hygiene practices vary in different religions and communities over the world. Such differences along with the practice of circumcision in Muslim men may be the reason for low rate of HPV infection in Muslims.

Keywords: Human Papilloma Virus (HPV); PCR(polymerase chain reaction).

Access this article online

Quick Response Code:

Website: www.innovativepublication.com

DOI: 10.5958/2394-2126.2016.00037.2

Introduction

Human Papilloma Virus (HPV) is the most common sexually transmitted infection. Although there are over 100 HPV types most HPV types do not lead to clinical manifestation and usually clear without intervention. However, in a small percentage of cases, HPV causes significant morbidity and mortality. HPV is associated with virtually all cases (99.7%) of cervical cancer[1].

Certain factors that were associated with an increased risk of cervical cancer are now considered to be risk factors for HPV infection. Some of these factors include a women's age at first sexual intercourse, number of lifetime sexual partners, reproductive history, exposure to hormones, smoking and other factors such lower socio-economic status, as defined by income and education have also been associated with cervical cancer risk[2].

In developing countries, there is a lack of effective screening programs for cervical cancer. In these countries, no clinically significant reduction in the incidence of cervical cancer has occurred during the past three decades[3]. This has led to a search for alternative screening methods that can be more cost-effective for application in low-resources settings.

The studies conclusively showed that a single round of screening for human papillomavirus (HPV) dramatically reduced the incidence of advanced cervical cancer and cervical-cancer mortality within 8 years. This was far more than a single conventional cytologic test or visual inspection of the cervix with acetic acid which are the traditional methods of screening[4]. HPV DNA testing, although expensive, can be cost-effective in the long run, as it has higher sensitivity than cytological screening, can detect CIN lesions at an earlier stage than cytology, and hence can be implemented with longer intervals between screenings while at the same time reducing cervical cancer incidence, and averting more deaths from the disease[5].

Materials & Methods

Women under reproductive age group presenting with cervical erosions were selected from Gynaecology out-patient department of Modern Maternity Hospital, Petlaburz, Hyderabad. The Purpose of study and procedure of sample collection was explained to the patient. With the consent from patient during the clinician's examination cervical specimens were collected and transported using the DNA Pap cervical sampler or the HC cervical sampler (consisting of a Cervical Brush and a Specimen Transport Medium of

Qualigene company) in a specimen transport medium. Out of collected 59 samples, 9 samples yielded DNA of unacceptable quality and were excluded from analysis and women not under reproductive age group were excluded.

Considering the fact that there is almost equal representation of Hindus and Muslims in the study population, we intended to see if there is difference in terms of HPV positivity between these groups.

Study was conducted using Good Laboratory Procedures (GLP) following aseptic precautions. To avoid contamination, pre PCR and post PCR work have been separated. Waste disposal was according to criteria set by GLP norms. Procedures followed are in accordance with the ethical standards laid down by the ICMR's Ethical guidelines for biomedical research on human participants (2006).

DNA Isolation was done by using routine conventional method. Then the presence of DNA is checked by gel electrophoresis and subjected to PCR by using glycoprotein GP5 & GP6 primers.

This study was conducted in Hyderabad, Telangana. A GP 5+/6+ polymerase chain reaction was used to detect the presence of HPV DNA in the cervical smear specimens obtained from women with cervical erosions of varying degrees.

Results

Distribution of HPV DNA positive patients according to Religion

Religion	No. of Patients	HPV DNA	% of patients with HPV DNA
Hindu	27	6	22.22
Muslim	23	1	4.34
Total	**50**	**7**	

In the present study out of 50 patients 27 were Hindu's and among them 6 patients (22%) were HPV DNA positive and 23 patients were Muslims and among them 1 patient (4%) was HPV DNA positive. Hindu women had a higher rate of HPV in the study.

Discussion

Duttagupta *et al* (2004)[6] observed that Indian Muslim women were as susceptible to HPV infection and for the development of abnormal cytology as were Hindu women. According to Varghese (2000)[7], Muslim women had a prevalence of 4.1% compared to 6.5% among Hindus According to Chakrabarti *et al (1987)*[8], higher frequency of HPV infection was observed in Hindu women as compared to Muslims.

In the present study 6 patients (22%) were HPV DNA positive among Hindus and 1 patient (4%) among Muslims was HPV DNA positive. Hindu women had a higher rate of HPV. Incidentally though, the location of the present study was in a dominant Muslim area and the participation of Hindu: Muslim ratio was 54%: 46%.

Genital hygiene practices and practice of circumcision in Muslim men may be the reason for lower rate of HPV infection observed in Muslim women. Our study is in concordance with the findings reported earlier.

References

1. Amanda Gelman, Cara Nikolajski, Eleanor Bimla Schwarz, and Sonya Borrero, Racial Disparities in Awareness of the Human Papillomavirus, J Womens Health (Larchmt). 2011 Aug;20(8):1165–1173. doi: 10.1089/jwh.2010.2617 PMCID: PMC3153869.
2. Flores YN, Bishai DM, Lőrincz A, et al. HPV testing for cervical cancer screening appears more cost-effective than Papanicolau cytology in Mexico. Cancer Causes & Control. 2011;22(2):261-272.
3. Miller AB, Nazeer S, Fonn S et al. "Report on consensus conference on cervical cancer screening and management", International Journal of Cancer,86(2000):440-7.
4. Sankaranarayanan R, Nene BM, Shastri SS, Jayant K, Muwonge R, Budukh AM, Hingmire S et al. HPV Screening for Cervical Cancer in Rural India, N Engl J Med; 360:1385-1394 April 2, 2009.
5. Bulkmans NWJ, Berkhof J, Rozendaal L et al. "Human papillomavirus DNA testing for the detection of cervical intraepithelial neoplasia grade 3 and cancer: 5-year follow-up of a randomized controlled implementation trial", Lancet 370, 2007. DOI: 10.1016/S0140-6736(07)61450-0.
6. Duttagupta C, Sengupta S, Roy M, Sengupta D, Bhattacharya P, Laikangbam P et al. Are Muslim women less susceptible to oncogenic human papillomavirus infection? A study from rural eastern India. Int J Gynecol Cancer 2004;14:293-303.
7. Varghese Cherian. Prevalence and determinants of Human Papillomavirus (HPV) Infection in Kerala, India. University of Tampere. 2000.
8. Chakrabarti RN, Bhattacharya D, Sarkhel T. Detection of human papilloma virus infection in routine Papanicolaou-stained cervical smears Eur J Gynaecol Oncol,1987.;8(1):22-5.