

A study of clinicoepidemiological and risk behaviour profile of patients with anogenital warts attending an urban STI clinic of Eastern India

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Abstract

Objective To determine the demographic, epidemiological features, frequency, clinical characteristics of the patients presenting with genital warts in an urban STD clinic setting. Also, observe the relationship with other sexually transmitted infections including HIV and other comorbidities.

Methods An institution-based, observational, cross-sectional clinical study was carried over twelve months (from March 2011 to February 2012). About a hundred accepting consecutive patients clinically diagnosed with genital warts were interviewed regarding the demographic features including age, sex, religion, occupation, educational status, marital status and others. Histopathological specimens stained with hematoxylin and eosin were examined when deemed necessary.

Results Out of 93 patients, 71 (76.3%) patients were males and 22 (23.7%) were females. The majority of the patients (66, 71.0%) came from urban areas of Kolkata and its suburbs while the rest (27, 29%) hailed from the rural areas. Modes of sex were genital (84, 90.3%), oral (36, 38.7%), anal (13, 14.0%) and others (like toys, etc., 1, 1.0%). Twenty-seven (29.0%) patients presented with a single wart; 30 (32.3%) had 2-5 warts, 10 (10.75%) patients each had 6-10 and 11-15 warts. Surface changes as secondary infections, bleeding and small necroses were seen in 4 (4.3%) patients.

Conclusion Anogenital warts more commonly occurred in males in third decade of life. Most of patients were married, polygamous, smokers and belonged to lower socio-economic class. Morphologically, classical condylomata acuminata was the most common type. Concurrent other sexually transmitted diseases were rare.

Key words

Anogenital wart, epidemiological, sexual.

Introduction

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Wart is a viral infection which can affect both the skin and mucous membranes and is caused by human papilloma virus (HPV). HPV is a naked, double-stranded DNA virus from the *Papovaviridae* family. Anogenital warts refer to the infection of the anal and genital mucosa and its adjoining areas.¹ Many authors use the term

‘anogenital warts’ synonymously with ‘condylomata acuminata’, although the later is described with a characteristic histology.²

Genital HPV infections are transmitted primarily through sexual contact.³ Most genital warts develop 1 to 8 months (average 3 months) after infection.

Although genital warts are common in India, lack of studies from our country specifically prompted us to evaluate the clinical, epidemiological, and risk behavior patterns of patients in the present study.

Methods

Study design An institution-based, observational, cross-sectional clinical study.

Study period Twelve months (from March 2012 to February 2013).

Study size Hundred (approximately).

Sample depiction All accepting consecutive patients clinically diagnosed with the condition during the study period.

Parameters studied

1. Demographic features of the patients including age, sex, religion, occupation, educational status, marital status and others.
2. Detailed history pertaining to disease including history of present illness, past medical and STI history, family history.
3. Risk-behavior patterns of the patients including detailed sexual history.
4. Physical examination to ascertain the clinical patterns of the disease and any associated STIs or other comorbidities.
5. Syphilis serology and HIV testing.

6. Histopathological specimen stained with hematoxylin and eosin when deemed necessary.

Results

At the outset, 102 patients were found eligible for the study; however, at the end, 93 patients completed the study. The main reasons for drop outs were the suggestion for a biopsy, emphasis on the need for partner attendance and proposal for serological tests.

The results obtained are summarized as follows:

Demographic features

Gender distribution Out of 93 patients, 71 (76.3%) were males and 22 (23.7%) were females. Thus, there was a preponderance of male patients with male to female ratio of 3.23: 1.

Age distribution The age ranged from 14 to 78 years, with mean of 31.5 years and a median of 31 years. The largest number of patients belonged to the 3rd decade, while the lowest incidence was in the 6th decade.

Religion of the patients Out of the 93 patients, 77 (82.8%) were Hindus, 14 (15.1%) were Muslims while 2 (2.1%) patients were Christians.

Occupation It was found that 16 (17.2%) patients were housewives, 12 (12.9%) owned some business, 10 (10.7%) were hawkers, 7 (7.5%) were manual laborers, 6 (6.5%) each were bus drivers and conductors, 6 (6.5%) were unemployed, while 4 (4.3%) patients each were students, salesmen and government servants. Three (3.2%) patients were electricians, 2 (2.1%) patients each were call centre workers, teachers, plumbers, sex workers, farmers,

goldsmiths, and maid servants (2.1% each). There was also a fisherman, carpenter, personal attendant ('aaya'), factory worker, security guard, shop owner and stock market (1.1% each) in our study group.

Residence The majority of the patients (66, 71.0%) came from urban areas of Kolkata and its suburbs while the rest (27, 29.0%) hailed from the rural areas of south and central Bengal.

Economic status of patients The majority of the patients (61, 65.6%) were from lower class, 31 (33.3%) from middle class and only 1 (1.1%) from the upper class, mainly from the adjacent areas of Kolkata.

Marital status Out of 93 patients, 59 (63.4%) married, 29 (31.2%) were never married, 4 (4.30%) were widow/ widowers, and 1 (1.08%) divorced.

Sexual history

Age of first sex Majority of patients i.e. 35 (37.6%) had first sexual exposure between 16 years to 20 years of age followed by 34 (36.6%) patients who had first sexual exposure between 21 to 30 years. Between 11 years to 15 years of age, 21 (22.6%) patients had their first sexual experience. Two (2.1%) patients had experienced first sex between 30-40 years and only one person (1.1%) gave history of first sexual exposure before 10 years.

Sexual orientation In this study 76 (81.7%) patients were found to be heterosexuals, 13 (14.0%) were homosexuals and 4 (4.3%) patients were bisexuals.

Number of sex partners Eleven (11.8%) patients were found to be monogamous while 82 (88.2%) were polygamous.

Table 1 Types of partners (n=93).

Types of partners	N (%)
Commercial sex worker (CSW) only	35 (37.6)
Spouse only	28 (30.1)
Girlfriend, boyfriend, casual friends & others	21 (22.9)
Spouse and CSW	21 (22.9)
Spouse, girlfriend & boyfriend	9 (9.7)

*Combinations of preferences present

Table 2 Mode of sex (n=93)

Mode of sex	N (%)
Genital	84 (90.3)
Oral	36 (38.7)
Anal	13 (13.0)
Others	1 (1.1)

Types of sexual partners 35 patients visited commercial sex workers, 28 were committed to their spouses while 21 had sex with casual contacts and friends. There were also combinations amongst the preferences (**Table 1**).

Mode of sex Mode of sex was different among different patients. Some used multiple modes while some followed single method. The different modes were genital (84 patients, 90.3%), oral (36 patients, 38.7%), anal (13 patients, 14.0%) and others (like toys etc. 1 patient, 1.1%). **Table 2** illustrates these values.

Condom use Only 13 (14.0%) patients used condoms consistently, 26 (28.0%) patients used condoms irregularly, 7 (7.5%) patients used rarely. The majority 47 (50.5%) patients never used condoms.

History of sexual abuse Among the 93 patients, 11 (11.8%) patients gave history of having suffered from childhood sexual abuse.

Clinical findings

Sites of involvement **Figure 1** shows different sites of involvement in descending order. Corona and labia majora were the most frequent site in males and females, respectively.

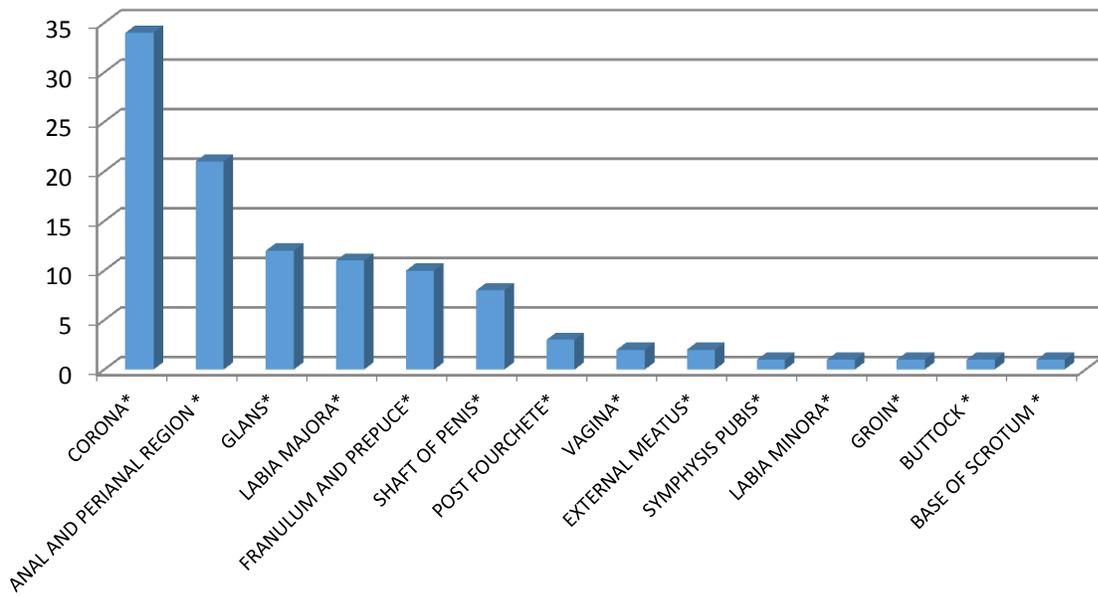


Figure 1 Bar chart showing distribution of lesions.



Figure 2 Giant condylomata acuminata: Buschke-Lowenstein tumor.



Figure 3 Large cauliflower lesion on the perianal region.



Figure 4 Lesions involving the vulva.

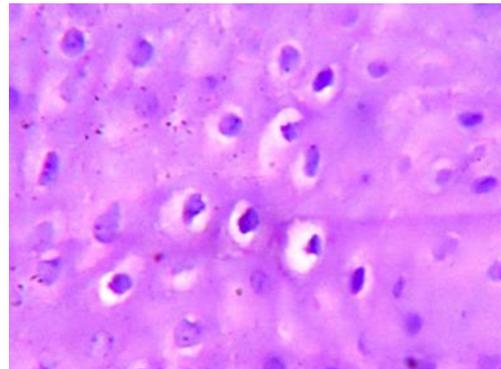
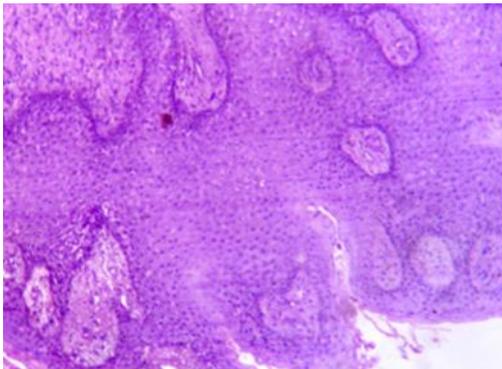


Figure 5 Histopathology: (original magnification X 40, H&E) There is pronounced acanthosis. Many cells of stratum malpighii appear vacuolated and have round, hyperchromatic nuclei.

Number of lesions Twenty-seven (29.0%) patients presented with a single wart; 30 (32.3%)

had 2-5 warts, 10 (10.7%) patients each had 6-10 and 11-15 warts. Nine (9.7%) patients

presented with 16-20 warts, while 6 (6.5%) of them had between 21 and 99 warts. One patient (1.1%) had over a hundred warts.

Surface changes of the lesions Surface changes as secondary infections, bleeding and small necroses were seen in 4 (4.3%) patients, only.

Type of lesions (Figure 2, 3 and 4) An overwhelming majority of patients (88, 94.6%) in our study presented with condylomata acuminata. Histopathological examination revealed pronounced acanthosis, vacuolated cells in stratum malpighii which appear to have round, hyperchromatic nuclei (koilocytes), (Figure 5). Papular type were present in 4 patients (4.3%), 3 (3.2%) had verrucous type and 2 patients (2.1%) presented with flat type of lesions

Associated symptoms The genital warts were asymptomatic in 31 (33.3%) patients. The rest pruritus as associated symptom.

HIV and RPR status Eleven (11.8%) patients tested positive for HIV and only 1 (1.1%) patient showed positive RPR/VDRL test. Eleven patients were HIV seropositive out of which 7 were male and 4 were female. Most of them came from rural area of low socioeconomic status. Out of these 11 HIV positive patients 10 were heterosexual and one is homosexual. They were mostly polygamous and they either never used condom or used irregularly. Urethral discharge was also seen in one patient, where gram staining revealed gram-negative intracellular diplococci. Two men had herpes genitalis; multinucleated giant cells were found on Tzanck smear. Another man had few mollusca contagiosa on the genitalia, in addition. Curdy white discharge was seen in 4 women and yeast cells with mycelia were demonstrated in a 10% KOH preparation.

Follow up Most of them visit our clinic regularly for treatment. Recurrence, however, was detected in one patient.

Discussion

In the present study a male: female ratio of 3.23:1 was noticed; whereas in another Indian study involving 56 genital wart patients by Abarna Devi *et al.*⁴ (2009) a male: female ratio of 1.8:1 was found.

The maximum number of patients in our study belonged to the age group of 21 to 30 years. This corroborated with Franceschil *et al.*⁵ (1983) where the peak age group was 20-24 years. We found 11 out of 22 female patients (50%) and 20 out of 71 male patients (28%) to have age between 18 to 25 years, showing the incidence rate to be high with a peak at younger ages in females. This concurred with Kraut *et al.*⁶ (2010) who found that most cases occurred in the 15 to 40 years age group.

The highest prevalence of the disease was seen among Hindu (85%) patients. This could be explained by the Hindu predominant catchment of the health facility. Moreover, Muslims are generally circumcised near birth which may give protection from many STIs. Cook *et al.*⁷ (1993) observed that 26% of male were uncircumcised while only 3% were circumcised suffered from genital warts. Larke *et al.*⁸ (2011) concluded in their study that several countries were expanding access to voluntary medical male circumcision to reduce HIV prevalence which provided additional benefit in reducing HPV prevalence.

Most patients (85%) had no education beyond school level. Shin *et al.*⁹ (2004) in an all-female study found the maximum number of patients with genital warts to be students; this was in contrast to the present general-population study wherein the largest number of patients were

found to be housewives (17.2%). This finding could be attributed to socio-economic factors.

Most of our patients belonged to the low socioeconomic status, since the hospital setting is usually visited by people from the lower class.

Most patients (63.4%) were married, which may reflect diminishing social values. Only four patients gave history of having similar lesions in genital area of their partner or spouse.

Smoking (34, 36.6%) was the commonest addiction in our study which corroborated Wen *et al.*¹⁰ (1999) who found that independent risk factors for genital warts included smoking amongst other factors. It was seen that 21 (22.6%) patients were addicted to alcohol. Bairati *et al.*¹¹ (1994) stated that moderately high consumption of alcohol was associated with increased risk of condyloma.

Most of the patients in the study had had their first sexual experience during the age group 16 to 20 years of age, closely followed by the 21 to 30 year-old age group. This data could have resulted from the early age of marriage maintained in parts of India which agreed with Wen *et al.*¹⁰ (1999) who found that younger age to be an independent risk factor.

While the majority (81.7%) of the patients was heterosexual, a large (14.0%) fraction was homosexuals. Among 13 homosexuals it was seen most of them (7, 53.8%) were interested in receptive anal sex and the rest had had oral sex only. The striking feature was that, only 1 of 7 had anal wart. Sanchez, *et al.*¹² (2012) found 60% perceived risk of HPV due to anal sex among MSM (male having sex with male).

Most patients in our study were polygamous (82, 88.2%). Many patients were visitors to commercial sex workers (CSWs), while an equal

population had sex with CSWs and others in addition to their spouses. Koutsky *et al.*¹³ (1997) and Hippeläinen *et al.*¹⁴ (1993) both found that major risk factors for acquiring genital HPV infection involve sexual behavior, particularly multiple sex partners.

The most common mode of acquisition of warts in the present study was genital intercourse followed by oral sex. This was followed by acquisition of warts having had sex in the anal route and remotely but significantly by fomites (sex toys). In our study it was found that out of 22 patients having anal sex only 5 patients actually had anal wart. Lu *et al.*¹⁵ (2006) found anal sex is not the main route of HPV infection for perianal warts.

Most patients in our study had never used condoms a finding which agreed that of Wen *et al.*¹⁰ (1999), who found that consistent condom use significantly reduced the risk of acquiring genital warts. Repp *et al.*¹⁶ (2012), however, had found that HPV prevalence was high even among those who reported always using condoms.

Clinical data from our study suggest that the warts were situated mostly on the corona of the penis, followed by the anal and perianal regions, followed by the glans in men and labia majora and perianal region in female. This order of occurrence roughly followed the patterns of sexual intercourse as observed in the study.

Warts were mainly grayish brown-brown in color. Most patients had 2-5 warts, followed by single lesion. One patient had more than a hundred warts. Most patients had warty or rough surface without any surface changes.

An overwhelming majority of patients (88, 94.6%) in our study had condylomata acuminata. Papular, verrucous and flat lesions

were present in equal and small number of patients. Lu *et al.*¹⁵ (2006) found classical condylomata acuminata to constitute the majority of the eruptions, while flat condylomata came next. Most lesions were found in a group. Warts were diffusely distributed in a lesser number of patients and resulted probably due to autoinoculation.

Most patients had associated pruritus while the next majority was asymptomatic.

All patients were checked for HIV and RPR status where most patients (88.2% and 98.9%, respectively) were negative for both. Patient should be evaluated and if required tested for other STIs.

Conclusion

Genital warts were more common in males in third decade of life, mostly married, polygamous, smokers and from lower socio-economic class. Classical condylomata acuminata constituted the majority of the morphology, followed by papular type. Association with other sexually transmitted diseases was rare.

Limitations of the study: Partner profile was not available in all cases.

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