# A CLINICO-EPIDEMIOLOGICAL STUDY OF GENITAL WARTS

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## Summary

The epidemiological and clinical characteristics of 109 patients (94 men and 15 women) with genital warts were studied at the STD Training and Demonstration Centre, Safdarjang Hospital, New Delhi. Genital warts is a disease of young adults and correlates with sexual maturity. The majority of patients were poor socio-economically, non-promiscuous and not addicted to alcohol. Most of the males with the disease were single and the women married, reflecting the differing sources of acquisition of the disease. Homosexuality played a significant role in the acquisition of perianal warts in males. The mean incubation period was 3.4 months. Warts were more numerous in women. Long foreskins, by presenting a more moist environment probably predispose to the acquisition and propagation of warts. Personal hygiene soon after coitus did not seem significant in the prevention of warts. Cutaneous warts were associated in 8% of the cases. Concomitant sexually transmitted infections were present in 38.5% of the patients. Genital warts showed a preferential distribution at sites frequently subjected to the trauma of coitus.


KEY WORDS : Clinico-epidemiological study, Genital warts.

The clinical and epidemiological characteristics of genital warts seen in a group of patients are described in the following study.

## Clinical Material and Methods

One hundred and nine patients (94 males and 15 females) with genital warts seen at the STD Training and Demonstration Centre, Safdarjang Hospital, New Delhi, were interviewed and examined according to a preset schedule.

Routine screening procedures were employed to detect other sexually transmitted diseases. The patients were encouraged to bring their sexual partners for examination and treatment.

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## Results

The majority of patients (89%) with genital warts were young adults under the age of 30 years (Table 1). Sixty three (67%) of the 94 males were unmarried, while 13 of the 15 (86.7%) females with warts were married. The majority of patients in this study were of poor socio-economic status. Only six (5.5%) of the 109 patients had a high socio-economic background (all were males). Three unmarried males denied any sexual activity. Twenty nine patients (including one female) were promiscuous. Fifty two men gave a history of premarital intercourse and

26 gave a history of extramarital relationships.

TABLE 1

Age and sex distribution of the patients

| Age group (in years) | Males | Females | Total |
|---|---|---|---|
| < 15 | 4 | 1 | 5 |
| 16–20 | 16 | 8 | 24 |
| 21—25 | 46 | 1 | 47 |
| 26—30 | 20 | 1 | 21 |
| 31—35 | 4 | 3 | 7 |
| 36—40 | 2 | 1 | 3 |
| 41—45 | 2 | 0 | 2 |
| Total | 94 | 15 | 109 |

Professionals (prostitutes and call-girls) were the source of the disease in two-thirds of the males. Only four men attributed their disease to marital exposures. Homosexuality was the source of the disease in 9.6% of cases (Table 2).

TABLE 2

Source of acquisition of genital warts

| Source | Males | Females |
|---|---|---|
| *Professional* | | |
| Prostitutes | 41 | — |
| Call-girls | 20 | — |
| *Non-professional* | | |
| Friend | 6 | 2 |
| Marital | 4 | 10 |
| Homosexual | 9 | — |
| Others (casual acquaintances, relatives, domestic servants etc.) | 11 | 3 |
| Total | 91 | 15 |

Denials : 3

Two-thirds of the women, however, incriminated their husbands as the source of the disease. Twenty six percent of the men were regular alcoholics while 37% were teetotallers; the rest were social alcoholics. All the women were teetotallers. None of the patients was addicted to drugs. A past history of genital lesions was obtained in 37 male patients. The majority of these had had genital ulcers (Table 3). None of these patients had ever had genital warts in the past. Among the females, seven had a history of persistent vaginal discharge in the past. Cleaning of the genitalia with or without soap or antiseptics was practised by only 34 of the 94 male patients.

TABLE 3

Previous sexually transmitted diseases among the 37 repeaters

| Disease | Incidence |
|---|---|
| Chancroid | 19 |
| Gonorrhoea | 16 |
| Primary syphilis | 3 |
| Latent syphilis | 2 |
| Balanoposthitis | 8 |

Eighty two patients incriminated a particular sexual exposure as the origin of their warts. The mean incubation period was 3.4 months and the range ten days to 13 months. Sixteen of the 109 patients attended within one month of noticing the warts. In 29 patients, however, the warts had been present for more than six months before they presented at the clinic. Only two of the 94 males were circumcised The majority had long foreskins (redundant after covering the glans), while 7 had short foreskins (did not completely cover the glans). The total number of warts was less than four in 42 of the 94 males. More than a dozen warts were present in only 27% of the males. Among the females, however, only one had less than four warts, the majority (73%) having more than a dozen warts. Verrucae over the other parts of the body were seen in nine of the 109 cases with genital warts. In five of these, the warts were present on the hands, in two cases on the face and in one case each on the upper arm and trunk.

A study of the sexual contacts was possible in only 19 of the patients owing to a low rate of patient compliance. Genital warts were detected

in three of the four male contacts of females with genital warts. In contrast, only five of the 15 female contacts of males with warts had the disease.

Genital warts were associated with other sexually transmitted diseases in 35 cases (Table 4). Balanoposthitis and chancroid formed the bulk of the associations.

TABLE 4
Concomitant sexually transmitted diseases among the males

| Disease | Incidence |
|---|---|
| Early syphilis | 1 |
| Chancroid | 14 |
| Herpes genitalis | 2 |
| Gonorrhoea | 2 |
| Scabies | 3 |
| Balanoposthitis (Candidal) | 3 |
| Balanoposthitis (Other) | 10 |

Among the females with genital warts, four had candidial and three trichomonal vulvo-vaginitis, and two had latent syphilis. Four of the patients were pregnant.

**Discussion**

The majority (91%) of men were below 30 years of age. A comparison of the age group distribution of male patients with genital warts with that reported in patients with gonorrhoea in a previous study reported from our clinic[1] shows close similarities.

Women tended to acquire genital warts at a younger age. In this study only 21% of men were under 21 years of age as compared to 60% of women in this age group ($X_c^2 = 8.0$; $p < 0.01$). This has also been noted earlier by Reddy and Vimla Bai[2] who attributed this to the fact that women tend to start their sex life at an earlier age than men.

Only about one-third of the men were married as compared to four-fifths of the women. Reddy and Vimla Bai noted that 94% of women as compared to only 69% of men were married. This may be related to a lower age at marriage among women (which in many communities in India, is still performed soon after the girl attains menarche). Since the majority of women, particularly in the lower socio-economic groups, start their sex life with marriage, women with genital warts are less likely to be single. This also explains, in part, why most of the women stated their spouse to be the source of their disease.

Professionals (i.e., prostitutes and call-girls) were responsible for two-thirds of the cases of genital warts among the males, while among the females the spouse was responsible for two-thirds of the cases Only four of the 94 males attributed their infection to their wives.

The majority of patients (70.6%) were not promiscuous. Homosexuality was the cause of the warts in approximately 10% of cases among males. In all these cases the males had acted as the passive agents and presented with perianal warts.

The mean incubation period was 3.4 months (range 10 days to 13 months) which is comparable with the observation of 3.1 months by Teokharov[3] and 2.8 months by Oriel[4]. The latter investigator observed the incubation period to range between 3 weeks to 8 months.

Only 15% of the patients attended the clinic within one month of noting the warts, and in 27% the warts had been present for more than six months before the patient sought treatment. This lag period, between the appearance of the wart and attendance at the clinic for treatment (in part due to an absence of alarming symptoms) is an important factor in the spread

of the disease, particularly among the promiscuous. Oriel[4] observed that the infectivity of warts decreased with time and after a duration of approximately 12 months the warts appeared to be non-infectious.

90% of the male patients with genital warts were seen to have long foreskins. Cleaning of the genitalia after coitus with water alone or with soap or antiseptics within a few hours by 36% of the men did not seem to prevent the disease.

Warts were more numerous among the women than men. More than a dozen warts were present in 73% of women compared to only 27% of the men.

Cutaneous warts were present in association with genital warts in 8% of the cases. A study of skin warts in a control group was not undertaken. However, Oriel[4] has shown that the incidence of skin warts in patients with genital warts and in a control group of patients with gonorrhoea is not significantly different.

42% of contacts of patients with genital warts also acquired the disease. However, only a prolonged follow-up of more than six months as suggested by Teokharov[4] is likely to give a real index of transmissibility of the disease.

Four of the female patients were also pregnant, though no differences were noted in the size and distribution of the warts in these patients.

Oriel[4] stated that the sites at which genital warts first appear are the sites most frequently injured during coitus. In our study the distribution of genital warts in males (Table 5) followed the pattern described by Oriel with a few differences. Nearly 94% of patients had lesions on the frenum, corona and glans contrasting with 52% in Oriel's study. Also, meatal warts were relatively infrequent in our patients (4.3%, as compared with 23%).

TABLE 5
Distribution of genital warts among the 94 males

| Site | Incidence | % | % in Oriel's Study[8] |
|---|---|---|---|
| Frenum, corona & glans | 88 | 93.6 | 52 |
| Prepuce | 30 | 31.9 | 33 |
| Urinary meatus | 4 | 4.3 | 23 |
| Shaft of penis | 9 | 9.6 | 18 |
| Scrotum | 1 | 1.1 | 2 |
| Anus | 7 | 7.4 | 8 |
| Buttock | 1 | 1.1 | 0 |

Among females too, though the overall distribution of genital warts followed that described by Oriel, there was a preponderance of warts on the labia majora and vagina, and a lower incidence of warts on the posterior part of the introitus (Table 6).

TABLE 6
Distribution of genital warts among the 15 women

| Site | Incidence | % | % in Oriel's study[8] |
|---|---|---|---|
| Posterior part of the introitus | 7 | 46.7 | 73 |
| Labia majora | 13 | 86.7 | 31 |
| Urethra | 0 | 0 | 8 |
| Labia minora | 6 | 40 | 32 |
| Vagina | 8 | 42.1 | 15 |
| Cervix | 1 | 6.7 | 6 |
| Perineum | 4 | 26.7 | 23 |
| Anus | 2 | 13.3 | 18 |
| Thigh | 1 | 6.7 | 0 |

The rarity of genital warts on the abdomen, thighs and buttocks has been commented upon[4,6]. In our study, a solitary male had a wart on the buttock and another female had a wart on the thigh in association with genital warts.

Giant condylomas and malignant degeneration were not observed in our study.

## References


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