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Original Research Article

A prospective clinical study on homologous autoinoculation in anogenital wart

Saravanan Narayanan, Kamalanathan Nallu*, Sridhar Venu, Muthusubramanian Chandrasekar

Department of Dermatology, Venereology and Leprosy, Chengalpattu Medical College, Tamil Nadu, India

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***Correspondence:**
Dr. Kamalanathan Nallu,
E-mail: nkamalmd@gmail.com

ABSTRACT

Background: Ano-genital wart, an infection of the anal and genital mucosa with their adjoining area is caused by human papilloma virus. Genital warts pose a bigger challenge, because of the lack of cell mediated immunity and its propensity to relapse and the reluctance of patients to consult a physician. The main aim of our study is to determine whether autoinoculation is effective in treatment of ano-genital warts.
Methods: 25 cases of anogenital warts of either sex, who attended RTI/STI clinic in Chengalpattu Medical College from September 2017 to September 2018. The study design was prospective. A detailed history taking, thorough clinical examination and appropriate relevant investigations were done for all the patients who fulfilled the inclusion and exclusion criteria. Autoinoculation was done for those patients. They were assessed periodically for clinical outcome.
Results: A sample size of 25 patients (20 men and 5 women) was included in the study. After 3 months of therapy 8 (32%) patients recovered completely and more than 75% improvement occurred in another 7 (28%) patients. At 6 months 15 (60%) patients showed complete resolution. No significant complication was documented.
Conclusions: Autoinoculation is a single time minimal invasive procedure effective in management of anogenital wart. It also reduces the recurrence of lesions.

Keywords: Viral wart, Genital wart, Autoinoculation, Immunotherapy

INTRODUCTION

Anogenital warts (Syn- condyloma acuminata) refer to the infection of anal and genital mucosa with their adjoining area. They were certainly recognized by early Greek and Roman Physicians, such as Hippocrates and Gallen.[1] The term Condyloma is derived from ancient Greek meaning "a round swelling adjacent to anus".[2] Most commonly caused by human papilloma virus types 6, 11. Current evidence suggests that over 50% of sexually active adults have been infected with one or more HPV (human papilloma virus) types. The prevalence of genital warts in India is 5.1% to 25.2% of patients with STDs.[3,4]

Genital warts pose a bigger challenge, because of the lack of cell mediated immunity and propensity to relapse and the reluctance of patients to consult a physician.

In spite of various therapeutic modalities being available, no single therapy has been found to be universally efficacious and cosmetically acceptable. An ideal treatment for warts should be effective, safe, with low morbidity and no adverse effects. Cytotoxic T

lymphocytes play an important role in eliminating warts.[5] Specific stimulation of immune system against the causative virus can serve this purpose well. Auto inoculation of wart tissue by means of homologous auto-implantation, by helping to induce specific cell-mediated immunity, has been proposed as a treatment option for extensive, recalcitrant genital warts.[6]

We conducted the present study to find if auto-inoculation is effective in the treatment of ano-genital warts, and whether it is effective in preventing recurrences.

METHODS

A prospective analysis of 25 cases of new/old anogenital warts of either sex, who attended RTI/STI (reproductive tract infections/sexually transmitted infections) clinic in Chengalpattu Medical College, Chengalpattu, Tamil Nadu from September 2017 to September 2018 were included in the study. Institutional ethical committee approval was obtained.

Inclusion criteria

Inclusion criteria were patients of either sex of age >18 years; patients with single or multiple anogenital warts; patients newly diagnosed/recalcitrant anogenital warts; patients willing to have sexual abstinence/adopt barrier method during the period of study; patients willing to give a written informed consent.

Exclusion criteria

Exclusion criteria were pregnant and lactating mothers; immunosuppressed patients and those with a history of intake of immune modulatory/immunosuppressive drugs and/or systemic corticosteroids; patients not willing to participate in the study.

Patients were enrolled based on the inclusion and exclusion criteria at the first visit. A detailed history taking including sexual history, thorough clinical examination particularly about the wart size, site, number, morphology were assessed, photographed and recorded in standard record form.

Complete blood count, coagulation profile, liver and renal function tests, urine analysis, serological tests for HIV, syphilis, hepatitis B & C, electrocardiogram, were performed in all patients, as part of routine work-up. Partner screening was also done.

After getting consent from patient, under aseptic precautions procedure was performed at Dermatology procedure room where emergency resuscitative drugs and oxygen were kept ready in hand. A well-developed lesion from the accessible site was pared with number 11 scalpel blade without injuring the deeper part of skin. This was placed on a glass slide and crushed with another glass slide to make a thin film. Then with a wide bore needle (18G), a narrow slit on the ventral aspect of left forearm was made to form a small subcutaneous pocket. With fine curved forceps the processed material was placed inside the pocket and the wound was dressed tightly. Systemic antibiotics were given. Patients were followed up every two weeks for the first month and monthly thereafter for 6 months. Response to treatment is assessed based on the reduction in number and size of the wart, absence of new lesions.

RESULTS

Total of 25 patients were enrolled in our study. Basic patients profile is given in Table 1.

Table 1: Patient's profile.

Characteristics	N (%)
Sex	
Male	20 (80)
Female	05 (20)
Age (yrs)	
18-29	08 (32)
30-39	13 (52)
40-49	04 (16)
Duration of disease (in months)	
0-12	20 (80)
13-24	04 (16)
>24	01 (04)

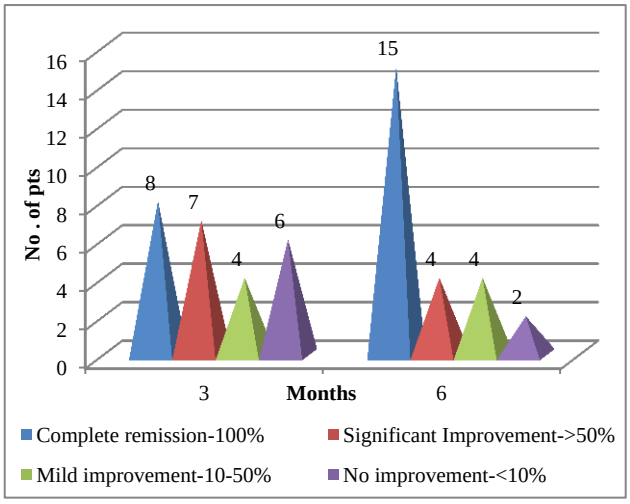

Figure 1: Clinical improvement after auto-inoculation.

After 3 months of therapy 8 (32%) patients recovered completely and more than 75% improvement occurred in another 7 (28%) patients. 3 patients (male) were lost in subsequent follow up. At 6 months, 15 (60%) patients showed complete resolution. The inference of our study is given in Figure 1. Duration of disease did not correlate with improvement. No significant complication was documented.

Figure 2: Female anogenital wart-post auto-inoculation.

Figure 3: Male anogenital wart-clinical improvement after auto-inoculation.

DISCUSSION

Genital HPV infections are transmitted primarily through sexual contact. The infectivity of HPV among sexual partners is estimated to be 60%.[6,7] Effective immunity depends on cell-mediated immune response to the early proteins, E2 and E6, which promotes the regression of lesion. Cytotoxic T lymphocytes play an important role in eliminating warts. Both cell mediated immunity and humoral immunity has been demonstrated in patients with genital wart. Almedia's "one way cross reactivity" states that cutaneous warts are auto-inoculable on to the genital mucosa, whereas the genital warts are not able to produce any cutaneous lesion.[8]

Anogenital warts are often multifocal. The most common sites, in uncircumcised male are the glans, inner aspect of prepuce and frenulum. In females labia minora, majora, introitus, posterior fourchette extending onto the perineum and in the perianal region. These sites were more prone to microtrauma during sexual intercourse which facilitates viral access to the basal layer.[9,10] Genital Warts are broadly divided into acuminate, flat or macular warts and keratinised wart.[11]

Even though various therapeutic modalities being available, no single therapy has been found to be efficacious and cosmetically acceptable in majority of the patients. Aims of treatment for multiple, recalcitrant warts should be removal of the warts, without recurrence, without any post treatment morbidity. The procedure also should be easy to perform even in a resource poor setup.

Studies have shown that warts resolve spontaneously in 40% of patients and the rest need some kind of medical or surgical intervention.[12] The most commonly used treatments involve destruction of the area of epidermis infected either by application of topical preparations or surgical approaches. However scar formation and recurrence rates after these therapies are high.

Immunotherapy by auto-inoculation is a promising modality in treatment of genital warts which augment immune system and prevents relapse.[13,14]

Mechanism by which autoinoculation works in genital wart[8,15]

- Autoinoculation activates delayed hypersensitivity response to wart tissue antigens, aiding clearance to both local and distant warts.
- It augments production of Th1 cytokines.

TNF α and IL-1 ⟶ Down regulates transcription of HPV genes.

INF ϒ and IL-2 ⟶ Stimulate cytotoxic T cells and natural killer cells to eradicate HPV infected Cells.

In our study, we used autoinoculation as a prime modality of treatment and followed up the patients regularly for 6 months. We observed that 60% of patients had complete remission in 6 months in contrast to 80% in a study by Shivakumar et al.[5] Around 32% of patients had mild to significant improvement. 8% patients showed no improvement at the end of 6 months. Patients who did not achieve 50% improvement at the end of therapy/ continued to have new lesions may be due to a specific immune deficit to the virus in absence of generalized immune compromise. No adverse effects or complications following autoinoculation were noted in our study.

Limitation of our study is that patient who responded completely need follow up for a longer duration for risk of recurrence.

CONCLUSION

Anogenital warts cause physical embarrassment and psychological distress to the patients, as well as, a therapeutic challenge for the treating dermatologist. Auto- inoculation is a safe, simple and one time minimal invasive efficacious technique that can be performed in a very simple set-up with minimal trauma and complication. It is effective in genital warts irrespective of duration of suffering.

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Ethical approval: The study was approved by the institutional ethics committee

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