

**Brief
Report**

Autoimplantation therapy for multiple warts

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DOI: 10.4103/0378-6323.57721
PMID: 19915240

ABSTRACT

Background: In the treatment of multiple warts, there is no single treatment that is 100% effective and different modalities of treatment need to be combined. **Aim:** To evaluate the efficacy of homologous autoimplantation therapy in the treatment of multiple warts. **Methods:** A total of 60 patients of multiple verruca vulgaris and palmo-plantar warts were enrolled. Homologous autoimplantation was done after harvesting full-depth wart tissue. Patients were followed upto a period of 6 months. Resolution of warts within a period of 3 months after procedure was considered successful. **Results:** All the 60 patients were available for follow-up. A total of 28 patients of verruca vulgaris (70%) and 16 patients of palmo-plantar warts (80%) showed resolution of warts within 3 months, accounting for a total clearance rate of 73.3%. Majority of the responders (91%) showed resolution of warts within 2 months. **Conclusion:** This study demonstrates that homologous autoimplantation could be an effective, simple modality of treatment for multiple warts.

Key words: Autoimplantation, Resolution, Warts

INTRODUCTION

Warts are benign tumours that commonly involve the skin and other epithelial tissues, caused by human papilloma virus infection.^[1] Treatment of warts is difficult, though several treatment modalities are available. There is no single treatment that is 100% effective and different types of treatment may be combined. Different types of warts and those at different sites may need differing treatments. In recalcitrant warts, the treatment modalities available are cryotherapy, lasers, intralesional bleomycin and 5% imiquimod, if the lesions are few in number. In multiple lesions, systemic retinoids, photodynamic therapy and topical sensitizers such as dinitrochlorobenzene (DNCB), squaric acid dibutylester (SADBE) and diphencyprone are reported to be effective.^[2] In multiple warts, especially of palms and soles, destructive procedures are inappropriate and impractical.

Homologous autoimplantation is a simple technique, which helps in inducing a good cell-mediated immune response, essential for the clearance of warts. We

evaluated the efficacy of homologous autoimplantation therapy in the treatment of multiple warts.

METHODS

A total of 60 eligible patients with multiple verruca vulgaris and palmo-plantar warts (>5 in number) were enrolled in an open, non-randomized study done between May 2007 and October 2008. Patients with warts other than verruca vulgaris and palmo-plantar type, pregnant and lactating mothers, children, immunosuppressed patients and those with history of intake of immunomodulatory/ immunosuppressive drugs were excluded. Proper written consent was obtained after counseling. A treatment free washout period of 3 months was ensured. Institutional ethical committee clearance was obtained for the study.

Homologous autoimplantation was done as per the procedure described below.

A well developed verrucous papule was chosen as a donor wart. Under local anaesthesia and strict aseptic precautions, a full-depth nick was made upto the

How to cite this article: Shivakumar V, Okade R, Rajkumar V. Autoimplantation therapy for multiple warts. Indian J Dermatol Venereol Leprol 2009;75:593-5.

Received: January, 2009. **Accepted:** July, 2009. **Source of Support:** Nil. **Conflict of Interest:** None declared.

subcutis level with an 18G needle and a chunk of wart tissue was removed and placed on a sterile swab. An area on the flexor aspect of left forearm around 2 inches below antecubital crease was chosen as a recipient site for autoimplantation. Under local anaesthesia with aseptic precautions, a small nick was made on the skin using an 18G needle in accordance with resting skin tension lines (RSTL). The needle was then introduced subcutaneously and a pocket was created with to and fro motions of the needle. The harvested tissue was gently introduced into the subcutaneous pocket with the same 18G needle and secured tightly with a small micropore dressing or band-aid plaster. The donor area was similarly dressed. Systemic antibiotics were given for a period of 5 days. The dressings were removed after 5 days. Patients were followed up every 2 weeks for 1 month and monthly thereafter for 6 months. Resolution of warts within a period of 3 months after procedure was considered as successful treatment. Nonresponders and also resolution after 3 months were considered as failures.

RESULTS

All 60 patients were available for follow-up. The baseline characteristics are shown in Table 1.

Out of 60 patients, 40 had verruca vulgaris [Figure 1] and the remaining 20 had palmo-plantar warts. Majority of the patients had warts persisting for more than 6 months.

A total of 28 patients of verruca vulgaris (70%) and 16 of palmo-plantar warts (80%) showed resolution [Figure 2] within 3 months [Table 2], accounting for a

total clearance rate of 73.3%. Majority of the responders (91%) showed resolution of warts within 2 months.

Earliest resolution of warts was seen at the end of 3rd week. In few patients, warts resolved with post-inflammatory hypopigmentation, which lasted upto 8 weeks. In some cases, an inflammatory nodule was formed at the site of autoimplantation during the 2nd week and these patients showed an early resolution of warts.

DISCUSSION

Although some warts regress spontaneously, it can persist for years causing physical discomfort and



Figure 1: Multiple warts seen on hands and feet



Figure 2: Warts have resolved with hypopigmentation after autoimplantation procedure

Table 1: Baseline characteristics of patients (n = 60)

Characteristics	Numbers of Patients
Age (in years)	
21-30	43
31-40	17
Sex	
Male	40
Female	20
Type	
Verruca vulgaris	40
Palmo-plantar warts	20
Duration (in months)	
<1	04
1-3	14
3-6	14
>6	28

Table 2: Resolution time

Type	<1 month	1-2 months	2-3 months	>3 months
Verruca vulgaris	14	11	03	12
Palmo-plantar warts	05	10	01	04

psychological trauma.^[1] There is no single treatment that is 100% effective. Hence, multiple modalities of treatment have been tried with an average of 60–70% clearance in 3 months.^[2]

The ideal aims of the treatment of warts should be to remove the wart without recurrence, avoid aggressive (potentially scarring) procedures, and to assist the immune system in dealing more effectively with the virus and inducing life-long immunity to human papillomaviruses (HPVs).^[2]

The presence of local as well as systemic immunity may be necessary to eradicate the clinical manifestations of HPV infection.^[1] Warts in adults, in those with a long duration of infection and in immunosuppressed patients are less likely to resolve spontaneously and are more recalcitrant to treatment. The highest clearance rates for various treatments are observed usually in younger individuals who have a short duration of infection.^[2]

Significant alterations occur in the immune status of patients during spontaneous wart regression or following successful wart therapy.^[3] The most striking feature is the increase in viral-specific antibodies (both IgM and IgG type). Delayed hypersensitivity to HPV antigen also increases in regressing warts.^[4] A significant booster in both antibody and delayed hypersensitivity response are noted after intradermal testing with HPV antigens and wart treatment.^[5]

In a study of 22 patients with multiple or recurring warts, repeated intradermal skin tests using formalin-

inactivated purified viral antigen administered at 3 weeks interval for 3 times, showed development of cell-mediated immunity and appearance of circulating IgG antibodies in patients in whom warts resolved. But in non-responders, warts persisted with either a weak or nonexistent immune response.^[6]

CONCLUSIONS

Homologous autoimplantation is an easy, minimally invasive technique, wherein, the wart tissue is harvested aseptically with an 18G needle and placed subcutaneously. This could theoretically induce an adequate immune response leading to resolution of wart, more so in multiple warts involving distant sites. A double-blind, randomized study with a longer follow-up will help in determining accurately the effectiveness of the treatment.

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