ORIGINAL RESEARCH PAPER

Volume-7 | Issue-11 | November-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

EFFICACY OF INTRALESIONAL VITAMIN D3 IN EXTENSIVE & RECALCITRANT WARTS: AN OPEN UNCONTROLLED TRIAL

Cosmetology

Manimegalai. M* Prof and Head, Department of Cosmetology (Dermatosurgery), Government Stanley Medical College and Hospital, Chennai, India. *Corresponding Author

Vivekanandh. K Senior Resident, Department of Cosmetology (Dermatosurgery), Government Stanley Medical College and Hospital, Chennai, India.

Vidhya Livingston Assistant Professor, Department of Cosmetology (Dermatosurgery), Government Stanley Medical College and Hospital, Chennai, India.

Hemamalini. R Assistant Professor, Department of Cosmetology (Dermatosurgery), Government Stanley Medical College and Hospital, Chennai, India.

ABSTRACT

BACKGROUND: Extensive warts is a challenging condition to treat. Vitamin D3 is a new modality which acts by enhancing cell-mediated immunity against the warts.

AIM: To evaluate the efficacy and safety of Intralesional vitamin D3 in extensive and recalcitrant warts.

METHODS: 50 patients with multiple warts of varying sizes and duration were included in the study. 0.2- to 0.5-mL vitamin D3 solution (600,000 IU, 15 mg/mL) was injected at the base of the wart. A maximum of 5 warts were injected per session at 3-week intervals until resolution or for a maximum of 4 treatments. Patients were followed up for 6 months to detect any recurrence.

RESULTS: Complete response was seen in 38/50 (76%), partial response in 7/50 (14%) and no response in 5/50 (10%). Average sittings required to achieve complete resolution was 3.46. Side effects like erythema, edema, pain and induration were seen in 12% which were either self limiting or managed with analgesics. Recurrence was seen in 6%.

LIMITATIONS: There was no control group in our study.

CONCLUSION: Intralesional vitamin D3 is effective, safer and an inexpensive treatment option for extensive and recalcitrant warts.

KEYWORDS

Extensive warts, recalcitrant warts, Vitamin D3

INTRODUCTION:

Warts are benign epidermal proliferations of the skin and mucosa caused by human papilloma virus (HPV). Although spontaneous resolution occurs in most cases, most patients seek treatment as they are cosmetically disfiguring and sometimes painful.[1] Conventional methods include topical keratolytics, electrocoagulation, cryotherapy or laser therapy. These are associated with scarring, frequent recurrences and not suitable for the treatment of extensive and recalcitrant warts.[2] Recently immunotherapy is being tried widely for the above cases. These include measles, mumps, rubella (MMR); tuberculin purified protein derivative (PPD) and Mycobacterium ω vaccine.[3]

Vitamin D has the property to regulate epidermal proliferation and cytokine production.[4] There are hardly any studies in the literature supporting the use of intralesional vitamin D in multiple and recalcitrant warts.[5]

METHODS:

This is an open uncontrolled study conducted on patients attending cosmetology OPD in a tertiary care centre. Period of study was 1 year (August 2017- July 2018). Fifty consecutive patients, who were newly diagnosed clinically and old patients who were advised to stop any treatment for 8 weeks, having 2 or more recalcitrant warts (persistent for a period of more than 6 months, resistant to at least 2 conventional treatment modalities) were included in the study. Exclusion criteria were age <12 years, mucosal and genital warts, pregnancy, lactation and immunosuppression. Formal consent was taken from each patient, before starting therapy, after full explanation regarding the nature of disease, course, and method of treatment, duration, and follow up. Ethical clearance from scientific group for this study had been taken. The characteristics of the warts such as type, size, number were noted and clinical photographs were recorded at the baseline and during each follow-up visit.

Using a 26-gauge syringe with the bevel facing upward, 0.2 to 0.5 mL vitamin D3 solution (600,000 IU; 15 mg/mL) was slowly injected into the base of each wart. A maximum of 5 warts were injected per session. The injections were performed at 3 weekly intervals until complete resolution or for a total of 4 sessions. Depending on the decrease in wart size, response rate was classified as complete, if they showed a complete disappearance, partial if some remained unchanged or regressed in size but not 100%, and no response if there was no improvement at all. Patients were followed up for further 6 months to detect any recurrence.

RESULTS:

Among the 50 patients, 29 were males and 21 were females. Age of the patients ranged from 12 to 65 years, with a mean of 23 years. The duration of warts ranged from 1 month to 84 months, with a mean of 7 months. The number of warts ranged from 2 to < 40. Of these, 20 (40%) patients had palmoplantar warts, 23 (46%) had common warts, 4 (8%) had periungual warts, 1 (2%) had filliform warts and 2 (4%) had plane warts. The dimensions of the lesions ranged from 2 × 2 mm to 3.0 × 3.5 mm. Multiple non-contiguous sites were involved in 18 patients (36%). [Table 1]

Complete response was seen in 38/50 (76%), partial response in 7/50 (14%) and no response in 5/50 (10%). Average sittings required to achieve complete resolution was 3.46. Figures 1-3 shows the effects of intralesional Vitamin D3 for warts. Side effects like erythema, edema, pain and induration were seen in 12% which were either self limiting or managed with analgesics. Recurrence was seen in 3 patients (6%).

Table 1: Epidemiological data

Total patients	**n=50**
Age (years): Mean ± SD	23 ± 11.47
Sex: Male **Female**	29 (58%) 21 (42%)
Duration (months): Mean ± SD	7 ± 17.56
Types: Palmoplantar **Common** **Periungual** **Filiform** **Plane**	20 (40%) 23 (46%) 4 (8%) 1 (2%) 2 (4%)

Figure 1: A. Wart over right middle finger before treatment. B. Complete clearance after 1 sitting

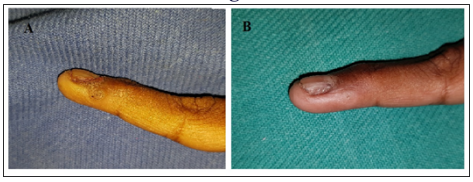

Figure 2: A. Subungual wart over right index finger before treatment. B. Complete clearance after 2 sittings

Figure 3: A. Multiple warts over neck before treatment. B. Complete clearance after 3 sittings

DISCUSSION:

Treatment of extensive and recalcitrant warts is challenging and it needs multiple sittings by destructive methods such as electrocautery, which are are associated with scarring and recurrences.[2] Advantage of immunotherapy is, it induces immunity against HPV virus leading to clearance of both treated and distant warts with low recurrence.[6] Immunotherapy has been tried with various antigens and vaccines such as bleomycin, PPD, MMR, Candida albicans and Mycobacterium ω vaccine.[7]

Several studies have been published showing the efficacy of topical Vitamin D for the treatment of warts. Moscarelli et al. reported successful treatment of refractory wart in a 41-year-old renal transplant patient with calcitriol solution. The effect of Vitamin D3 derivatives on warts was thought to be due to its potential to regulate epidermal cell proliferation and differentiation and to modulate cytokine production.[8] Recently, it was observed that there is toll-like receptor activation of human macrophages which upregulated the expression of Vitamin D receptor (VDR) and Vitamin D-1-hydroxylase genes, leading to induction of antimicrobial peptide.[9]

Aktas et al. used intralesional Vitamin D3 for plantar warts. Twenty patients were included in the study and 7.5 mg of Vitamin D3 injection was given at monthly intervals for a maximum of 2 sessions. They reported complete clearance in 80% of patients at the end of 8 weeks, which were similar to the results seen in our study.[10]

In a study by Kavya et al., Out of 42 patients complete response was seen in 78.57%. Mean number of sittings required to achieve complete clearance was 3, which were comparable to our study.[4] In another similar study by Raghukumar et al., done on 60 patients, two (3.33%) patients developed edema at the site of injection, resolving within 1 week. Mild erythema was seen in 3 (5%) patients. Recurrence was seen in 3.33%.[5]

CONCLUSION:

To conclude, Intralesional Vitamin D3 injection is an inexpensive, effective and safe option among the available treatments for multiple and recalcitrant warts. No control group in our study was the main limitation. Some more randomized clinical trials with a greater sample size and longer follow-up are required.

ACKNOWLEDGEMENT: NIL
CONFLICTS OF INTREST: NIL

REFERENCES:

1. Sterling JC, Handfield-Jones S, Hudson PM; British Association of Dermatologists. Guidelines for the management of cutaneous warts. Br J Dermatol 2001;144:4-11.
2. Gibbs S, Harvey I, Sterling J, Stark R. Local treatments for cutaneous warts: systematic review. BMJ. 2002;325:461.
3. Aldahan AS, Mlacker S, Shah VV, et al. Efficacy of intralesional immunotherapy for the treatment of warts: a review of the literature. Dermatol Ther. 2016;29:197-207.
4. Kavya M, Shashikumar BM, Harish MR, Shweta BP. Safety and efficacy of intralesional vitamin D3 in cutaneous warts: An open uncontrolled trial. J Cutan Aesthet Surg 2017;10:90-4.
5. Raghukumar S, Ravikumar BC, Vinay KN, Suresh MR, Aggarwal A, Yashovardhana DP. Intralesional Vitamin D(3) Injection in the Treatment of Recalcitrant Warts: A Novel Proposition. J Cutan Med Surg. 2017 Jul/Aug;21(4):320-324.
6. Savant SS, Gore D. Electrosurgery. In: Savant SS, Shah RA, Gore D, editors. Textbook and Atlas of Dermatosurgery and Cosmetology. Mumbai: ASCAD; 2005. p. 305-14.
7. Garg S, Baveja S. Intralesional immunotherapy for difficult to treat warts with Mycobacterium w vaccine. J Cutan Aesthet Surg 2014;7:203-8.
8. Moscarelli L, Annunziata F, Mjeshtri A, Paudice N, Tsalouchos A, Zanazzi M, et al. Successful treatment of refractory wart with a topical activated Vitamin D in a renal transplant recipient. Case Rep Transplant 2011;2011:368623.
9. Liu PT, Stenger S, Li H, Wenzel L, Tan BH, Krutzik SR, et al. Toll-like receptor triggering of a Vitamin D-mediated human antimicrobial response. Science 2006;311:1770-3.
10. Aktas H, Ergin C, Demir B, Ekiz Ö. Intralesional Vitamin D injection may be an effective treatment option for warts. J Cutan Med Surg 2016;20:118-22.