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Intralesional Vitamine-D3 in Multiple Skin Warts

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Abstract
Background- *Skin warts is a fairly common condition and primarily treated with destructive method which may be associated with scarring in multiple warts. Treatment with intralesional injections has gained momentum due to its efficacy in clearing not only the local warts but also distant warts by stimulating the cell-mediated immunity against human papillomavirus.*
Aims- *To evaluvate the safety and effectivness of intralesional Vitamin D3 for the treatment of multiple skin warts.*
Materials and Methods- *Patients with multiple (>2 in number) skin warts were selected for immunotherapy. Intralesional Vitamin D3 (0.2 ml, 15 mg/ml) was given at the base of each wart after injecting with lignocaine (0.2 ml, 20mg/ml).The injections were repeated at 2 weeks interval for a maximum of 4 sessions or until complete resolution, whichever was earlier. A maximum of 2 warts per session were treated and patients were followed up for 6 months after the last injection.*
Results- *Total 36 patients with multiple skin warts were included for the study .Among 36 patients, 18 had palmoplantar warts, 14 had verruca vulgaris, 3 had periungual wart and 1 patient had filiform wart. Out of 36 patients 25 (69.44 %) had complete resolution of their warts, both at the injection and distant sites, 8 (22.22 %) had very good response and 3 (8.33 %) had good response. No any serious side effect were reported.*
Conclusion- *Intralesional vitamine-D3 injection is a safe, well-tolerable, inexpensive and effective treatment for multiple skin warts.*
Keywords - *Warts, vitamin D3*

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I. Introduction

Warts or verrucae are benign epidermal proliferations of the skin and mucosa caused by human papillomavirus (HPV). Although spontaneous resolution occurs within 2 years in 65%–78% of warts, most patients seek treatment of warts as they are cosmetically disfiguring and sometimes painful, especially on the soles.[1] Local destruction of warts is a commonly employed treatment modality performed by using either topical keratolytics, electrocoagulation, chemicalcoagulation, cryotherapy or laser therapy.[2,3] All these modalities of treatment can be painful and may be associated with scarring and frequent recurrences. Destructive modalities are not suitable for the treatment of multiple and refractory warts as they clear only treated lesions and not the distant ones. Hence, to overcome these shortcomings, immunotherapy is being tried widely for the treatment of warts over the last few years. It acts on the basic principle of enhancing the cell-mediated immunity for the clearance of warts.[4] Few studies have been published showing the efficacy of intralesional Vitamin D3 injection in the treatment of warts and reported encouraging results.[5] Herein, we report the treatment response of intralesional Vitamin D3 injections for the treatment of multiple skin warts.

II. Aims And Objective

To evaluvate the safety and effectivness of intralesional Vitamin D3 for the treatment of multiple skin warts.

III. Material And Method

The study was conducted from November 2017 to July 2018 in the Dermatology Department of our institute and approved by the Institute Ethical Committee All consecutive patients of both sex, having multiple cutaneous warts were primarily selected for the study. Patients <12 and >70 years, pregnant and lactating

females, any evidence of immunosuppression including HIV and with a prior history of hypersensitivity to Vitamin D3 were excluded from the study. Cutaneous warts were diagnosed by history and clinical features. Baseline evaluation was made at the first visit, and the demographic data were recorded in a performa designed for this study. A graphical wart map was prepared for each patient; location, number, size and type of wart were recorded on it at each visit. Photographs were taken at each visit to support the recorded data.
Larger size maximum 2 warts were treated at each session.The injections were repeated at 2 weekly intervals for a maximum of four injections. Clinical response was documented by recording the decrease in number and size of warty lesions at each visit i.e., at 2 weekly intervals for 4 sessions. Patients were evaluated for treatment efficacy and adverse reactions every 2 weeks for first 2 months and monthly thereafter to record for any recurrence for 6 months.

Method of administration of Vitamin D3 injection

Inj. Lignocaine 20 mg/ml

0.2 ml in each wart ⇩ after AST

Inj. Vitamine D3 600000 IU/15mg/1ml

0.2 ml slowly injected into the base of each wart with a 27 gauge insulin syringe

⇩

Patient were adviced not to use any topical And oral medications.

IV. Results

Demographic and Clinical data

Total patients	36
Gender ratio (Male: Female)	2:1
Mean age in years (Range)	20 (12-60)
Mean duration of disease in months	8 (1-72)
Mean numbers of warts	9 (3-40)
Type:- Verruca vulgaris	14
Palmoplantar wart	18
Periungual wart	3
Filiform wart	1

Treatment response according to type of wart

Respone / Types	Palmoplantar wart (n=18)	Verruca vulgaris (n= 14)	Periungual wart (n= 3)	Filiform wart (n= 1)	Total (n=36)
Complete Resolution (both treated and distant warts resolved)	15	10	0	0	25
Very good response (50 - <100%)	3	4	1	0	8
Good response (1- <50%)	0	0	2	1	3
Total	18	14	3	1	36

Adverse effects were seen in 22 (61%) patients, but all were minor with no life-threatening complications. Swelling at the site of injection was the most common adverse effect seen in 20 (55.5%) patients which resolved without any treatment in 4 weeks [Figure 5]. Dyspigmentation was seen in 2 patients [Figure 6].

V. Discussion

Immunotherapy is the best available option in treating warts as it boosts the immune system to HPV virus leading to clearance of both treated and untreated warts. Recurrence rate is also low when compared to destructive methods.[1,2,3] Immunotherapy has been tried with various antigens and vaccines .

Response rate of various Antigen/ Vaccines

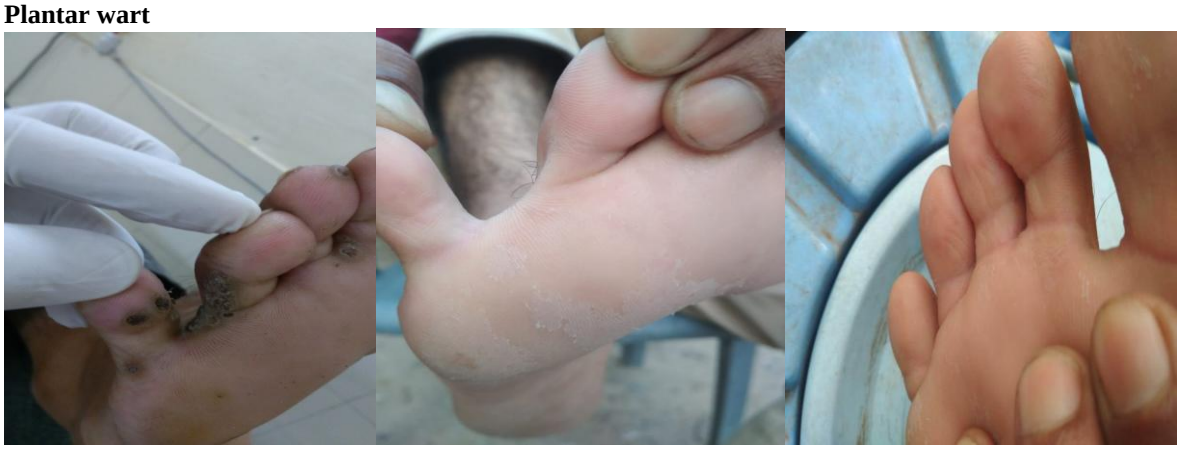
Study	**Antigen/Vaccine**	**Number of session given**	**Clearance rate (%)**
Garg and Baveja	Mycobacterium-w vaccine	10	**93**
Lee et al	Bleomycin	6	**73**
Nofal et al	MMR Vaccine	5	**63**
Saoji et al	PPD	4	**76**
Majid et al	Candida albicans	3	**56**
Present study	Vitamine-D3	4	**69**

The exact mechanism of action of Vitamin D in the clearance of warts is not known. Experimental evidence suggests that it has immunomodulatory effects by inhibiting the expression of interleukin-6 (IL-6), IL-8, tumour necrosis factor (TNF)-α and TNF-γ mediated through VDR-dependent pathway.[6]

Recently, it was observed that there is toll-like receptor activation of human macrophages which upregulated the hydroxylase genes, leading to induction of the antimicrobial peptide.[7]

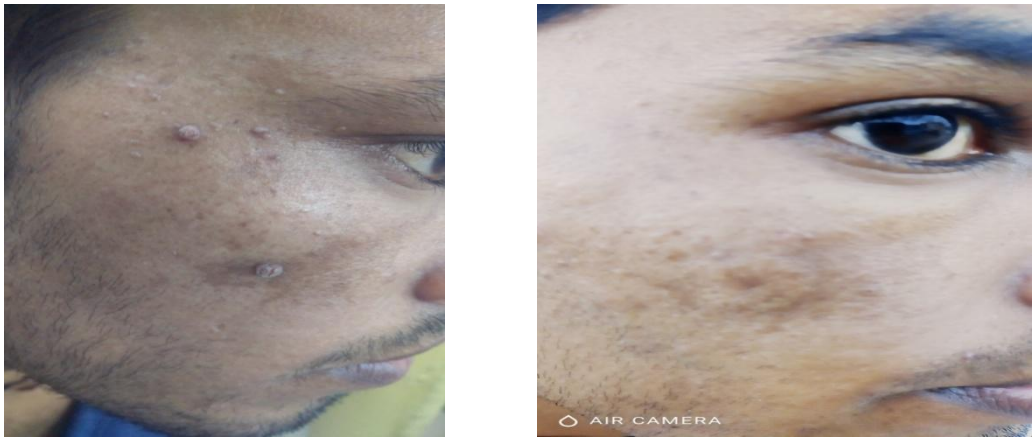
Aktas *et al*. used intralesional Vitamin D3 for plantar warts. Twenty patients were included and 7.5 mg Injection Vitamin D3 was given at monthly intervals for a maximum of 2 sessions. They reported complete clearance in 80% of patients at the end of 8 weeks.[5]

Plantar wart



(Before treatment) **(Complete resolution after four injection)**

Verruca vulgaris



Before treatment **Complete resolution After three injection**

Periungual wart

Before treatment

Very good response after four injection

Fig-6 Pigmentation after clearance

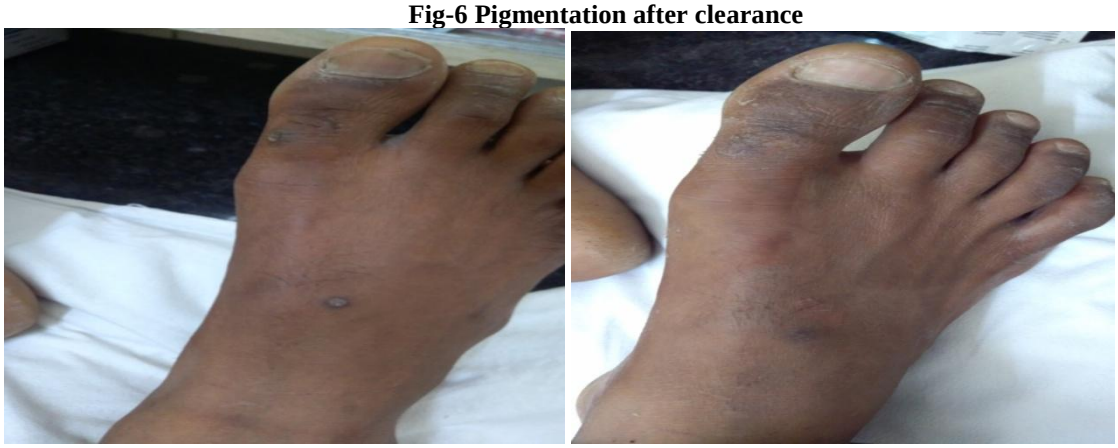
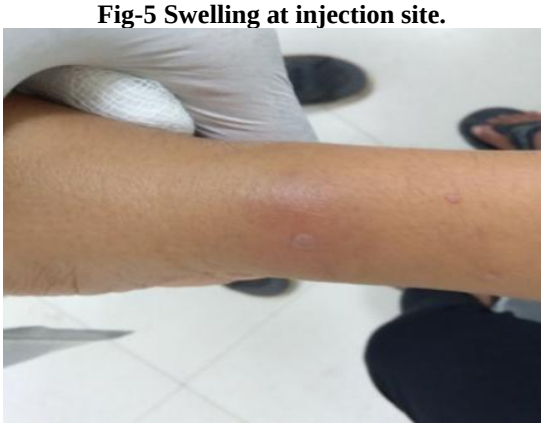


Fig-5 Swelling at injection site.



VI. Conclusion

Intralesional vitamine-D3 injection is a safe, well-tolerable, inexpensive and effective treatment for multiple skin warts.

Acknowledgements

Nil

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