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Vitamin D and HPV infection: clinical pearls

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Introduction & Objectives:

Treating warts is a great challenge for dermatologists since no single efficacious treatment modality, with ideal efficacy and cure rates, has been introduced up to the present time. Vitamin D is one of the agents that has been tried as immune therapeutic purposes in warts.

Materials & Methods:

Here, we reviewed the existing data regarding potential therapeutic effects of vitamin D in warts through searching on PubMed, Google Scholar and Scopus. All of the relevant papers published in English, until October, 2023, which we could access to their full-texts, were included.

Results:

Studies have shown decreased serum levels of 25-hydroxy vitamin D in patients with genital warts. Moreover, a relationship has been demonstrated between serum vitamin D levels and cutaneous warts. However, it does not seem that its levels reflect the severity of warts or their resistance to treatment.

Topical vitamin D derivatives, in the form of calcipotriene or maxacalcitol ointment or calcitriol solution, have been successful in treating warts, including anogenital lesions which are among the most difficult-to-treat warts Intralesional injection of vitamin D also had been especially beneficial in the regression warts.

It is interesting that intralesional injection of vitamin D might lead to simultaneous clearance of warts at distant areas following immunotherapy.

Combination of vitamin D immunotherapy with mechanical and destructive therapies such as cryotherapy has also been tried in different studies, with favorable cure rates.

Study	Intervention	Number of patients	Therapeutic sessions	Complete clearance rate
Al-Sabak et al. (13)	IL vitamin D	40	Every 2 weeks 4 sessions	82%
Aktas et al. (14)	IL vitamin D	20	Every month 2 sessions	80%
Naresh et al. (15)	IL vitamin D	60	Every 3 weeks	80%
Kaviya et al. (16)	IL vitamin D	42	Every 2 weeks	78%
El-Sayed et al. (17)	IL vitamin D IL 2% zinc sulfate	35 35	Every 2 weeks 4 sessions	63% 71%
EEM et al. (18)	IL vitamin D IL PPD	31 31	Every 2 weeks 4 sessions	35% 69%
Shaldon et al. (19)	IL vitamin D IL MMR	30 30	Every 3 weeks Up to 6 sessions	67% 80%
Raveendra et al. (20)	IL vitamin D IL PPD	50 50	Every 2 weeks 4 sessions	84% 76%
Yousaf et al. (21)	IL vitamin D cryotherapy	30 30	Every 2 weeks Up to 6 sessions	63% 43%

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Conclusion:

Immunotherapeutic interventions, including intralesional and topical vitamin D, has gained interests in the management of these lesion due to its simple application, good compliance, few side effects, high cure rates and low risk of recurrence.