# INTRALESIONAL TREATMENT OF WARTS

# **Intralesional Injection of Mumps, Measles, and**

# **Rubella Vaccine, Bleomycin, and Vitamin D3 in**

# **Warts Treatment**

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Abstract

Objectives: To compare the therapeutic efficacy of intralesional mumps, measles, and rubella (MMR) vaccination, vitamin D3 (VitD3), and bleomycin injection in patients with warts.

Background: With good outcomes, common warts have been treated with immunotherapy using intralesional antigens or vaccinations. It might result in resolution without any outward signs of deterioration or scarring and boost the host's defenses against the agent that caused the problem.

Methods: This study involved 84 wart patients in Benha University Hospitals, Egypt. All study participants gave their consent after being informed. MMR, bleomycin, and VitD3 were injected intralesionally to treat warts, whereas normal saline was injected intralesionally in control patients. Patients were followed every session for the size of the mother wart to record the effect of therapy.

Results: Comparing the response of mother wart at the last follow-up after MMR, vitD3, or bleomycin injection versus the control group revealed a significantly better response in each modality compared to control groups (P < 0.001 for each). However, regarding the response of the mother wart following MMR and vitD3 injection (P = 0.965), MMR and bleomycin injection (P = 0.716), and vitD3 and bleomycin injection (P = 0.855), no significant differences were discovered.

Conclusion: MMR, VitD3, or bleomycin injection showed a significantly better response of mother warts or other distant warts than control. When injecting mother warts, intralesional vitD3 provided the best therapeutic response in distant warts, followed by MMR and bleomycin. In comparison, MMR was the most efficient for treating mother warts, followed by vitamin D3 and bleomycin.

Keywords: Bleomycin, Intralesional, MMR, Vitamin D3, Warts