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INTRALESIONAL MEASLES, MUMPS, RUBELLA VACCINE INJECTION FOR TREARMENT OF VERRUCA VULGARIS- A CASE SERIES

Dermatology

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ABSTRACT

Background: Cutaneous warts are benign tumours of keratinocytes visible as well-defined hyperkeratotic protrusions infected with Human papilloma virus (HPV). Many treatment modalities have destructive nature and cause scarring. The concept of intralesional measles, mumps, rubella (MMR) vaccine is that it acts on the immune system and helps in clearing the lesions. **Aims And Objectives:** The aim is to record the response of Intralesional MMR vaccine in treating verruca vulgaris. **Materials And Methods:** We report a case series of 15 patients with verruca vulgaris who attended our dermatology outpatient department treated with intralesional MMR vaccine. **Results:** Out of 15 patients 11(73.3%) patients showed complete clearance of lesions, 3(0.2%) showed incomplete clearance and 1(0.06%) showed no response. **Conclusion:** Intralesional MMR vaccine is safe and effective in treating verruca vulgaris.

KEYWORDS

Verruca vulgaris, MMR, Intralesional injection.

INTRODUCTION

Human papilloma viruses (HPV) are DNA viruses measuring 50-55nm diameter that infect squamous epithelium, causing cell proliferation. Verruca vulgaris is the commonest effect of HPV infection.[1] Common HPV subtypes affecting the skin are HPV 1, 2, 3 and 4 and HPV 6, 11, 16 and 18 affect genital mucosa. Different clinical forms include common warts, plantar, flat, filiform, anogenital warts and oral warts.[2]

As currently there is no specific antiviral therapy available to treat HPV infection, the present treatment modalities mainly focus on destruction or removal of visible lesions or induce cytotoxicity against infected cells. Different treatment modalities include local destructive therapy, topical and intralesional cytotoxic therapy, topical and systemic immunomodifiers, antiviral agents, retinoids and immunotherapy.[3]

Immunotherapy includes topical application of 2% diphenylcyclopropenone, squaric acid dibutyl ester and intralesional injection of candida, trichophyton, Bacillus Calmette Guerin, Mycobacterium indicus pranii antigens.[4]

In our study we point towards safety and efficacy of intralesional MMR vaccine injection in treating verruca vulgaris.

MATERIALS AND METHODS

In this case series, we included 15 patients of age group between 15-45 years with verruca vulgaris who attended our dermatology outpatient department treated with intralesional MMR vaccine. Patients were counselled regarding the procedure, possible side effects and probable outcome. Informed written consent was taken in their regional language. Photographs were taken before procedure and during every sitting. In our study we used MMR vaccine (TRESIVAC®; Serum Institute of India Pvt. Ltd., Pune, India) a freeze-dried preparation of live attenuated measles, mumps and rubella which is available as single dose vial of 0.5ml.

A dose 0.1ml was injected into the volar aspect of left forearm and checked for erythema and induration of at least 5mm diameter during 48 to 72 hours which was considered as desired immune response. After reconstitution of MMR vaccine, around 0.3 to 0.5ml of dose was injected into the base of the wart with insulin syringe (32gauge) keeping the needle parallel to the skin. The procedure was repeated at the interval of 2 weeks and around 4-5 sittings were given. After each session patient was evaluated for immediate and late adverse effects like pain at injection site, erythema, oedema, fever or flu like symptoms. Response was recorded based on decrease in wart size and also by comparing the photographs. Disappearance of warts and appearance of normal skin markings, these features were considered as complete resolution. 50-99% was considered as partial resolution whereas 0-49% was considered as no response. The patient was followed for 6 months once in a month.

RESULTS

The age group included in our study was 15-45 years, among 15 patient's majority of 6 (0.40%) patients belonged to age group 26-35 followed by 5 (0.33%) belonged to 36-45 years and 4 (0.26%) belonged to 15-25 years. Out of 15 patients 8 (0.53%) were females and 7(0.46%) were males. The duration of verrucae included in our study is around 6 months to 1 year. The response of verrucae to intralesional MMR was tabulated in Table 1.

Table 1

Response to treatment	Number of patients	Percentage
Complete response	11	73.3%
Partial response	3	0.20%
No response	1	0.06%

11(73.3%) patients out of 15 showed complete response with appearance of normal skin markings whereas 3(0.20%) patients showed partial response with 60-80% reduction of size and 1 (0.06%) patient showed only 30% reduction in size which was considered as no response to the intralesional MMR vaccine.

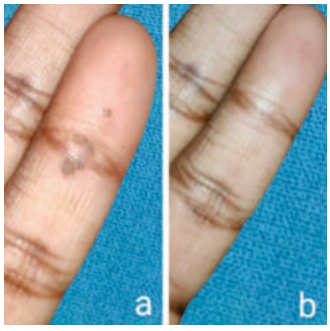

Figure 1: A) Verruca Vulgaris Over Distal Crease Of Left 5th Finger B) Complete Clearance Of Lesion With Intralesional Mmr Injection After 2 Sittings.

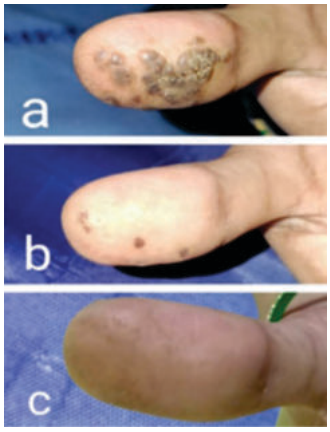

Figure 2: A) Verruca Vulgaris Over Right Thumb B) Partial Clearance After 3 Sittings C) Complete Clearance After 5 Sittings.

Out of 15 patients 3(0.20%) patients developed pain at the site of injection, 1(0.06%) patient developed fever which subsided within 12 hours and were given symptomatic treatment.

DISCUSSION

The prevalence of cutaneous warts is increasing in our practice and became a challenge to both patients and clinicians. It also makes the patient feel uncomfortable as it interferes with their social and leisure activities. Besides the destructive therapy immunotherapy has benefits of lesser adverse effects and also less chances of recurrences as they act by activating immune system.[5]

The main concept of immunotherapy is to induce delayed type hypersensitivity reaction. In immunocompetent patient T Helper 1 cells will secrete different cytokines like interleukin (IL)-2, IL-12, interferon gamma, which in turn stimulates killer T cells and cytotoxic natural killer cells. The cytotoxic T cells will recognize and destroy the cells infected with virus.[6]

In our study out of 15 patients 11 (73.3%) showed complete clearance, 3(0.20%) patients showed partial response and 1(0.06%) showed no response. Injection site pain (0.20%) and fever (0.06%) were the common adverse effects noticed in our study.

In Awal and Kaur study, a randomized, placebo-controlled trial 68% of patients in MMR group showed complete response compared to 10% in control group with recurrence rate of 2.7% in MMR group and pain was the most common side effect noted.[5]

A Randomized controlled trial by Rezai et al showed complete clearance in 65.2% (14/23) of patients in MMR group and recurrence was not observed in any of the completely cured patients at 6 months follow up.[6]

In a study by Saini et al., complete response was seen in 40 (46.5%) of 86 patients. Recurrence in 6 months follow up was seen in 3(5%) patients. Injection site pain, erythema and post inflammatory hyperpigmentation were common side effects in their study.[7]

In a study of case series by Chandran, 9 (81.9%) showed complete clearance and 1 (9.1%) showed incomplete clearance out of 11 patients. Pain, secondary bacterial infections were noted in their study.[8] Rutnin et al., did a double blinded randomized controlled trial, which showed complete resolution was higher in MMR group (90%) when compared to purified protein derivative group (PPD) with 80% in index lesion. In distant lesions 81.3% in MMR group and 54.6% in PPD group.[9]

Chauhan et al., in their study found complete response in 42 (82.4%) out of 51 patients and partial response was seen in 9 (17.6%). Injection site pain was the only noted side effect and no recurrences were noted.[10]

CONCLUSION

Electrocautery is the easily available and most commonly performed procedure to treat common warts but depending on depth of wart, healing time is very slow and becomes cumbersome for patients with palmoplantar warts to perform routine activities during healing. In such patients, immunotherapy with MMR vaccine can be a boon as it is mostly less painful and has faster healing time. In Our study, 73.3% showed complete clearance. Hence Intralesional MMR vaccine can be considered as first line of treatment as it is a non-destructive procedure, with less adverse effects and less chances of recurrence and various other studies also showed the safety and efficacy of the intralesional MMR vaccine.

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