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ASSESSMENT OF THE EFFECTIVENESS AND SAFETY OF AN ALTERED METHOD OF AUTOWART INJECTION THERAPY FOR THE MANAGEMENT OF MULTIPLE, RECURRENT, AND RESISTANT WARTS.

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ABSTRACT

Background: Recurrent warts significantly impact a patient's quality of life by inducing both physical and psychological distress. Traditional treatment options often involve pain, scarring, high rates of recurrence, and are not suitable for addressing multiple lesions simultaneously. A promising approach to treatment is immune stimulation, which involves presenting viral antigens to the body's immune system. The autowart injection method operates based on this principle. **Aim:** To evaluate the safety and efficacy of modified technique of auto wart injection in the treatment of multiple recurrent recalcitrant warts. **Methods:** A total of 40 patients suffering from multiple recurrent cutaneous warts participated in this prospective open-label study. The donor tissue was obtained by simply paring the wart rather than excising the entire wart tissue. This harvested tissue was subsequently crushed and injected into the gluteal region in a suspension of 1 ml of distilled water. Patients were monitored biweekly for the first month and then monthly for the following three months. At each visit, the number of lesions was recorded, and the treatment response was evaluated at the conclusion of the 12-week period. **Results:** All 40 patients diagnosed with multiple warts (29 males and 11 females) participated in the follow-up assessment. After a period of three months, 28 patients, representing 75%, exhibited complete resolution of their warts, while 9 patients, or 22.5%, experienced partial resolution. One patient did not demonstrate any improvement. No significant side effects were noted during the study. **Conclusion:** Modified autowart injection technique was found to be a safe and effective therapeutic modality with rapid resolution of warts in the treatment of multiple, recurrent, recalcitrant warts.

Key Words: Auto wart injection; Immune stimulation; Paring; Multiple, Recurrent, Recalcitrant warts.

INTRODUCTION

Warts are non-cancerous growths on the skin and mucous membranes, resulting from various strains of the double-stranded DNA human papillomavirus (HPV). Clinically, they present in several forms, including common warts (verruca vulgaris), filiform warts (digitate warts), flat warts (verruca plana), plantar warts, genital warts (condyloma acuminata), as well as oral and laryngeal papillomas, and epidermodysplasia verruciformis. The presence of multiple recurrent warts can lead to considerable morbidity, manifesting as both physical and psychological distress. Traditional treatment methods, such as electrocautery, radiofrequency, laser therapy,

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and cryotherapy, effectively remove wart tissue but fail to activate the immune system against the underlying virus. These procedures can be painful, may result in scarring, and often have high rates of recurrence, making them less suitable for managing multiple lesions. Therefore, an effective treatment approach would involve stimulating the immune system by exposing it to viral components, which can lead to spontaneous wart regression and long-lasting immunity. One innovative procedure, known as autowart injection, is designed to enhance the immune response against the virus in a single visit. In our research, we employed a technique of harvesting donor tissue by paring the wart rather than excising a significant portion of it. This method was chosen to minimize discomfort and reduce the risk of infection at the donor site. The current study aims to assess the safety and efficacy of this modified autowart injection technique in treating multiple recurrent recalcitrant warts.

MATERIALS AND METHODS

This research was conducted over the course of one year within the Dermatology outpatient department of a tertiary care rural hospital, designed as a prospective open-label study. Prior to the commencement of the study, ethical approval was secured. A total of forty patients presenting with multiple (defined as more than five), recurrent (those that have reappeared following any form of treatment), and palmoplantar warts were included in the study. The exclusion criteria encompassed individuals under the age of 10, pregnant or lactating women, immunocompromised patients (such as those with HIV), and individuals receiving immunosuppressive therapy. Written informed consent was obtained from all participants. A comprehensive medical history was collected using a pre-tested semi-structured questionnaire. A thorough general and systemic examination was performed and documented in the standard proforma.

Procedure of modified technique of autowart injection:

Donor tissue for autologous wart treatment was obtained under aseptic conditions by excising a prominent verrucous lesion or palmoplantar wart. The selected lesion was first disinfected using a combination of spirit and povidone-iodine, followed by spirit, and then carefully pared with a sterile surgical blade no. 11 (refer to Fig. 1). The excised tissue was placed on sterile surgical gauze and subsequently ground in a sterilized pestle and mortar with 1 ml of distilled water to create a fine suspension. This suspension was then injected into the upper outer quadrant of the gluteal region, specifically at the midpoint between the posterior iliac spine and the greater trochanter, ensuring that the needle tip was not within a blood vessel by retracting the piston prior to injection. Patients were evaluated every four weeks over a three-month period. During each follow-up appointment, the number of lesions and the percentage reduction in wart count were recorded. Complete clearance was defined as the resolution of all warts within the three-month timeframe (see Fig. 2 & 3). Additionally, patients were monitored for one month following clearance to check for any signs of recurrence.

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Figure 1: Paring of wart tissue using 11 no. surgicalblade

Figure 2: Recurrent warts over the left palm

Figure 3: Complete resolution of warts at the end of 3months

RESULTS

All 40 patients participated in the follow-up assessment. In this study, there was a predominance of males over females, with a ratio of 29:11, and the most frequent age range for presentation was between 24 and 28 years. Among the 40 patients, 23 were diagnosed with verruca vulgaris, while the remaining 17 had palmo-plantar warts. A significant majority,

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comprising 75% (30 patients), had warts that had persisted for over six months. At the four-week post-treatment evaluation, 60% (24 patients) exhibited a clearance of warts between 50% and 75%, and 10% (4 patients) achieved more than 75% clearance. By the twelfth week, a total of 28 patients (75%) demonstrated complete clearance of warts, while 9 patients (22.5%) experienced partial clearance, and one patient showed no improvement. No significant side effects were reported.

DISCUSSION

All 40 patients participated in the follow-up assessment. In this study, there was a predominance of males over females, with a ratio of 29:11, and the most frequent age range for presentation was between 24 and 28 years. Among the 40 patients, 23 were diagnosed with verruca vulgaris, while the remaining 17 had palmo-plantar warts. A significant majority, comprising 75% (30 patients), had warts that had persisted for over six months. At the four-week mark of post-treatment evaluation, 60% (24 patients) exhibited a clearance of warts between 50% and 75%, and 10% (4 patients) achieved more than 75% clearance. By the twelfth week, a total of 28 patients (75%) demonstrated complete clearance of warts, as illustrated in while 9 patients (22.5%) experienced partial clearance, and one patient showed no improvement. No significant side effects were reported.

Table 1: Comparison of the present study with previous studies

Author	Shivakumar et al.[6]	Nischal et al.[7]	Lal et al.[8]	Srivastava et al[4]	Present Study
Technique Adopted	Auto implantation using a subcutis deep wart tissue	Auto implantation of the pared wart tissue (modified technique)	Autoinoculationof the full thickness wart tissue	Autowart injection of crushed wart tissue in distilled water suspension	Autowart injection of the pared wart tissue (modified technique)
Complete Clearance (%)	73.3	74.1	62.5	66.03	75
Partial Clearance (%)	NA	3.7	NA	22.64	22.5
Non responders(%)	26.7	18.5	NA	11.32	2.5
Reaction at the site of implantation or injection	Some cases (exact number not known)	3 cases	11 cases	Nil	Nil

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CONCLUSION

In summary, the modified autowart injection technique has proven to be an effective treatment option, demonstrating a swift resolution of multiple, recurrent, and recalcitrant warts. However, our study is limited by a small sample size, the absence of HPV serotyping to evaluate type-specific variations in therapeutic results, and the lack of assessments to measure the levels of pertinent Th1 cytokines to determine their influence on wart resolution.

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