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RESEARCH ARTICLE

A STUDY ON THE EFFICACY OF IMMUNOTHERAPY WITH PURIFIED PROTEIN DERIVATIVE FOR THE TREATMENT OF RECALCITRANT WARTS

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ABSTRACT

Background: There are many treatment modalities of warts, but most of them are destructive therapies which have propensity to cause scarring. Many antigens especially PPD of tuberculin bacilli are being used for the regression of warts. **Objectives:** To study the efficacy of twenty five cases of purified protein derivative of tuberculin bacilli for the treatment of warts. **Methods**: A randomized controlled trial was done in which 25 patients of recalcitrant warts were taken up for the study. In all the patients, 2.5 units of PPD was injected in each wart and upto maximum of 25 units PPD was given and the injections were given every 3 weeks for a total of 3 sessions. **Results**: Commonest type of wart seen in our study was verruca vulgaris seen in 15(60%) patients, verruca plana seen in 5(20%) patients, palmoplantar warts seen in 3 (12%) patients and genital warts seen in 2 (8%) patients. Regarding the number of warts 15 (60%) patients had more than 20 warts, 5 (20%) patients had number of lesions between 11 – 20 and another 5(20%) patients had lesions between 1 – 10. Complete clearance of lesions after 3 sessions was seen in 18 (72%) patients, partial clearance of lesions was seen in 4 (16%) patients and no response was seen in 3 (12%) patients. **Conclusion:** Immunotherapy with PPD causes boosting up of the cell mediated immunity of the patients which causes spontaneous regression of the warts.

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INTRODUCTION

Purified protein derivative of tuberculin bacilli has been used to boost cell mediated immunity in a patient with warts (Johnson, 2004). The course of warts is quite variable in various individuals. In some persons, the warts regress spontaneously by themselves within a period of few months to few years. This is due to the cell mediated immunity of the person, which helps in spontaneous regression of the warts (Sterling, 2001; Gibbs, 2006). There are various modalities for the treatment of warts including various physical and chemical modalities. But the main problem with most of the destructive modalities is the high incidence of scarring with their use. The main advantage of immunotherapy is the lower rates of recurrence of warts and also less chances of scarring. There are various antigens used for immunotherapy including candida antigen, mumps antigen and trichophytin antigen (Horn, 2005; Johnson, 2001).

Aims: To study the efficacy of twenty five cases of purified protein derivative of tuberculin bacilli for the treatment of warts.

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MATERIALS AND METHODS

A randomized controlled trial was done in which 25 patients of recalcitrant warts were taken up for the study. In all the patients, 2.5 units of PPD was injected in each wart and up to maximum of 25 units PPD was given and the injections were given every 3 weeks for a total of 3 sessions. Adrenaline was kept ready in the emergency tray for any untoward anaphylactic or hypersensitivity reactions. Clinical response was assessed by physician global assessment score and also by photographic record which was done at every visit.

Inclusion Criteria

The following patients were included in our study:

- Patients with recalcitrant warts
- Patients having extensive warts
- Patients who have taken no treatment for the past 3 months

Exclusion Criteria

The following patients were excluded from our study:

- Pregnant and lactating females
- Patients on immunosuppressive drugs
- Patients having active tuberculosis and on anti tubercular drugs
- Patients having any severe allergic reaction to tuberculin PPD

The response to treatment was graded as follows:

Complete clearance – 75 – 100% response
Partial Clearance - 50 – 74% response
No Clearance – < 25% response

Follow up of the patients was done for a period of 6 months. Written informed consent was taken from all the patients before the study. Prior permission of hospital ethical committee was taken for the study.

RESULTS

The data was collected, tabulated and the results were analyzed statistically.

Table 1. Table Showing Age Distribution Of Patients

Sr no	Age distribution	Number	Percentage
1	0 - 20	8	32%
2	21 - 40	14	56%
3	41 - 60	3	12%
4	>60	-	-

Table 2. Table Showing Type Of Warts

Sr No	Types of warts	Number	Percentage
1	Verruca vulgaris	15	60%
2	Verruca plana	5	20%
3	Palmoplantar warts	3	12%
4	Genital warts	2	8%

Table 3. Table showing number of lesions

Sr no	Number of lesions	Number	Percentage
1	1 - 10	5	20%
2	11 - 20	5	20%
3	>20	15	60%

Table 4. Table showing response to treatment

Sr no	Response to treatment	Number	Percentage
1	Complete clearance	18	72%
2	Partial clearance	4	16%
3	No response	3	12%

Table 5. Table showing side effects of treatment

Sr No	side effects	number	percentage
1	Erythema	5	20%
2	Oedema	2	8%
3	Pain	1	4%
4	Recurrence	2	8%
5	Fever	1	4%

DISCUSSION

There were 15 males and 10 females and male: female was 1.5:1. Maximum number (56%) of patients were between 21 – 40 years of age followed by 8 (32%) patients between 0 – 20 years of age and 3 (12%) patients were between 41 – 60 years of age.

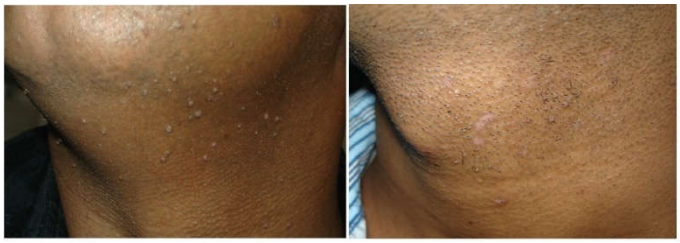

Fig. 1. Figure showing pre and post treatment photograph of a 25 years old male patient with plane warts

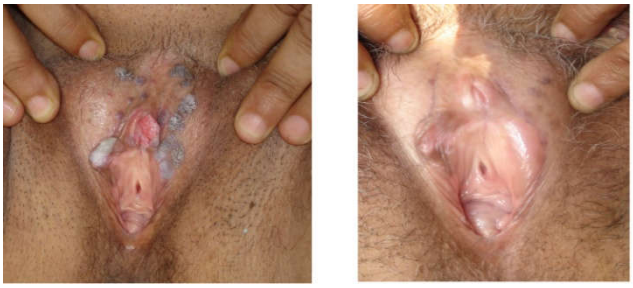

Fig 2. Figure showing pre and post treatment photograph of a 45 years old female patient with genital warts

Commonest type of wart seen in our study was verruca vulgaris seen in 15(60%) patients, verruca plana seen in 5(20%) patients, palmoplantar warts seen in 3 (12%) patients and genital warts seen in 2 (8%) patients. Regarding the number of warts 15 (60%) patients had more than 20 warts, 5 (20%) patients had number of lesions between11 – 20 and another 5(20%) patients had lesions between 1– 10. Complete clearance of lesions after 3 sessions was seen in 18 (72%) patients, partial clearance of lesions was seen in 4 (16%) patients and no response was seen in 3 (12%) patients. Regarding the side effects of injection PPD, erythema was seen in 5(20%) patients, oedema and recurrence after treatment was seen in 2 (8%) patients each, pain and fever was seen in 1(4%) patients each. Oedema and redness responded to cold compresses. Recurrence was seen in 2 patients during the follow up period. In most of the patients in whom immunotherapy was given, no scarring was observed in any of the patients and also recurrence was very less as compared to the other modalities. Tuberculin purified protein derivative is presently used for detection of infection by mycobacterium tubercules (Dimoliatis, 2008). The first preparation of tuberculin was prepared by Robert Koch in 1890, by heat killing the culture of tubercle bacilli at 100^0C. In 1941, PPD was a purified product. In India,tuberculin PPD is available as diluted and ready to use solutions in 1 ml, 2 ml, 5ml and 10 ml vials. Intradermal injection of PPD results in stimulation of sensitized T cells and results in delayed hypersensitivity reaction, which begins at 5 – 6 hours and becomes maximum at 48 – 72 hours after the administration of tuberculin PPD. Since PPD is a biological product, adrenaline should be available to treat anaphylactic or acute hypersensitivity reaction, though such reactions are extremely rare after administering tuberculin PPD (Froeschle, 2002). All the routine modalities have a tendency to cause depigmentation and scarring and frequent recurrences can occur. Regression of warts can occur spontaneously due to the development of cell mediated immunity. It is important that the PPD injection should be used with caution in patients on beta blockers as they may become unresponsive to adrenaline if anaphylactic reaction occurs. In a study by Easaa et al, a total of 40 pregnant women, aged 20-35 years with anogenital warts were enrolled.

The patients were treated with weekly injections of PPD given intradermally in the forearms, and evaluated for the response regularly (Eassa, 2011). Nineteen (47.5%) patients demonstrated complete clearance, 15 (37.5%) had partial response, and three (7.5%) had minimal response. Three (7.5%) cases did not respond to treatment. Side effects were minimal and insignificant. Treatment of anogenital warts in pregnant women with intradermal injection of PPD was found to be a unique, safe, and effective modality of immunotherapy. Ibraheem evaluated the effect of intradermal and intralesional Purified Protein Derivatives (PPD) in treatment of warts (Ibraheem, 2011). One hundred and ten patients with warts were included and classified into 3 groups: first group included 40 patients treated with intralesional PPD, second group included 50 patients treated with intradermal PPD & the third group included 20 patients as a control group treated with intralesional saline with a dose of 0.1 ml.

The response to PPD was complete cure in 32 cases (94.1%) in the first group ,48 cases 96% in the second group. In another study by S.Wananukul et al,tuberculin PPD injected intralesionally to the largest wart resulted in 67% cure rate with three treatments (Wananukul, 2009). Intralesional immunotherapy with PPD is used to induce a delayed hypersensitivity response to various antigens and the wart tissue (Chandrashekar, 2011; Bacelieri, 2005). It is associated with production of Th 1 cytokines which activate cytotoxic and natural killer cells to eradicate HPV infection. This helps to clear both local and distant warts. PPD injection stimulates the local immunity and also causes circulation of activated T cells in the body and ultimately causing clearance of both injected as well as other uninjected and warts. The main advantage of PPD is that it is very cheap and freely available in India and is easy to administer (Elela, 2011). Common side effects after administration of PPD include pain, pruritis and discomfort at injection site. Development of ulcer or necrosis may rarely occur at the site of injection. There are various therapeutic modalities for the treatment of warts including electrocautery, cryocautery and chemical cautery. Since all these are destructive therapies, there are increased chances of scarring and pigmentary changes with these methods. Also, since the warts are known to clear spontaneously after the development of cell mediated immunity, so immunotherapy is beneficial and it is modality of choice as there are less chances of recurrence of warts and it is less destructive (Kus, 2005).

Conclusion

The main limitation in our study was the absence of control group. Also, the sample size was small. More trials with larger number of patients need to be undertaken to prove the efficacy of PPD for the treatment of warts.

REFERENCES

Bacelieri R, Johnson SM. 2005. Cutaneous warts: An evidence-based approach to therapy. *Am Fam Physician*., 72:647-52.

Chandrashekar L. 2011. Intralesional immunotherapy for the management of warts. *Indian J Dermatol Venereol Leprol.,* 77:261-3.

Dimoliatis ID., Liaskos CA. 2008. Six Mantoux tuberculin skin tests with 1, 2, 5, 10, 20, and 50 units in a healthy male without side-effects-Is skin reaction a linear function of tuberculin dose? *Cases J.,* 1:115.

Eassa BI., Abou-Bakr AA., El-Khalawany MA. 2011. Intradermal injection of PPD as a novel approach of immunotherapy in anogenital warts in pregnant women. *Dermatol Ther.,* 24:137-43.

Elela IM., Elshahid AR., Mosbeh AS. 2011. Intradermal vs intralesional purified protein derivatives in treatment of warts. *Golf J Deramatol Venereol*., 18:21-6.

Froeschle JE., Ruben FL., Bloh AM. 2002. Immediate hypersensitivity reactions after use of tuberculin skin testing. *Clin Infect Dis.,* 34:12-3.

Gibbs S., Harvey I., Sterling JC., Stark R. 2006. Local treatments for cutaneous warts. *Cochrane Database Syst Rev.,* 3:CD001781.

Horn TD., Johnson SM., Helm RM., Roberson PK. 2005. Intralesional immunotherapy of warts with mumps, Candida, and Trichophyton skin test antigens: A single-blinded, randomized, and controlled trial. *Arch Dermatol.,* 141:589-94.

Ibraheem MA., Ahmed RE., Al Sadar M. 2011. Intradermal vs intralesional purified protein derivatives in treatment of warts. *Gulf J dermatol.,* 1;18.

Johnson SM., Horn TD. 2004. Intralesional immunotherapy for warts using a combination of skin test antigens: A safe and effective therapy. *J Drugs Dermatol*., 3:263-5.

Johnson SM., Roberson PK., Horn TD. 2001. Intralesional injection of mumps or Candida skin test antigens: A novel immunotherapy for warts. *Arch Dermatol*., 137:451-5.

Kus S., Ergun T., Gun D., Akin O. 2005. Intralesional tuberculin for treatment of refractory warts. *J Eur Acad Dermatol Venereol.*, 19:515–6.

Sterling JC., Handfield-Jones S., Hudson PM. 2001. British Association of Dermatologists. Guidelines for the management of cutaneous warts. *Br J Dermatol*., 144:4-11.

Wananukul, S., Chatproedprai, S., Kittiratsacha, P. 2009. Intralesional immunotherapy using tuberculin PPD in the treatment of palmoplantar and periungual warts. *Asian Biomedicin.,* 6:739-743.

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