Authors' reply

Sir,

We thank the authors for their valuable comments. Immunotherapy is the treatment of disease by inducing, enhancing or suppressing immune response. In the context of the present study, it indicates the therapeutic stimulation of cell-mediated immunity for the treatment of warts. All the published studies which are based on stimulating cell-mediated immunity for the treatment of warts use the term immunotherapy even with different antigens and different doses schedule and even when given at multiple sites.[1-6] Purified protein derivative irrespective of the dosage protocol in the treatment of warts acts by stimulation of cell-mediated immunity; hence, immunotherapy is the right term to describe the present study.

We were unable to find any previous reports that indicate any specific principle or procedure of dose and sites to qualify as immunotherapy. Antigens injected or topically applied, even at multiple sites without fixed doses are well accepted as immunotherapy.[1,6,7]

Immunotherapy for warts is a relatively new concept where the standardization has not yet been achieved. Hence, different studies have used different dose schedules.[4-6] It will require large-scale studies to develop standardization. However, before that the efficacy of immunotherapy for warts should be established. When we started using immunotherapy,

our preliminary observation (unpublished data) showed that using immunotherapy injections at multiple sites gave better results than injection at a single site; hence, we used injections at multiple sites. From the above letter, the success rate achieved by the authors using the fixed dose is not clear. Other workers, like us, reported good success with immunotherapy injections given at multiple sites.[1,6] Not all the drugs used in dermatology have a fixed dose or dose schedule as this is decided by multiple factors such as disease severity and various other co-morbid conditions. The procedure we described is simple to practice where the number of sessions and the duration is fixed and the dose varies depending on the extent of involvement and hence, we think there is no reason for confusion.

Warts are known to clear spontaneously and the clearance rate without treatment (no manipulation) or with saline injection (placebo/manipulation) is around 20%.[2,3,8] Horn *et al*. and Nofal and Nofal, as quoted in our article, have shown that it is the specific effect of immunotherapy injection and not the effect of injection (tissue manipulation); hence, to consider that the injections in multiple lesions increase the cure rate by increasing the tissue manipulation goes against the present evidence.[2,3]

All major illness including active tuberculosis which affect immunogenicity are excluded from our study. Treated tuberculosis was not considered as an exclusion criterion. Active or treated tuberculosis is not a contraindication for Mantoux testing for which purified protein derivative is used; in fact, Mantoux test is used for the clinical evaluation of tuberculosis. Hence, injecting purified protein derivative in patients with treated tuberculosis does not violate any safety precautions. In fact, the basis of choosing purified protein derivative for immunotherapy is the high prevalence of tuberculosis in the country which is likely to induce a good hypersensitivity response in most people. Furthermore, in some studies, immunotherapy was carried out only in those patients who were first confirmed to have a positive hypersensitivity response to the test antigen. Hypersensitivity response is important to get a response to immunotherapy. Side effects were noticed in some of our patients as shown in the photograph but the reaction was manageable confirming a good safety of purified protein derivative even if injected at multiple sites.

To conclude, our study showed that immunotherapy with injections of purified protein derivative at multiple sites is useful in treating warts.

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Conflicts of interest
There are no conflicts of interest.

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