

## Editorial

# Photodynamic therapy in the treatment of plane warts

Plane warts are common and often difficult to eradicate. In addition, these are often multiple, often affecting the face, hands and shins which can be distressing to the patient. Although these eventually resolve, it may take a long time if no treatment is given. Up to 65% of warts may resolve without treatment within two years but during this period, there is a risk of spread to other sites. Therefore, treatment is often required.

Several treatment modalities have been used to treat warts including cryotherapy, topical retinoids, imiquimod cream, and CO<sub>2</sub> laser. Isotretinoin for the treatment of plane warts has also been studied.<sup>1</sup> These modalities have had variable efficacy for treating plane warts but are often associated with side effects such as irritation, burning sensation for the topical treatments or scarring and pigmentation with destructive methods such as cryotherapy or electrocautery. Isotretinoin is generally safe but skin dryness is a common problem and there is always a concern of liver dysfunction and raised blood lipids. It is also contraindicated in pregnancy. In view of this, there is continuing research for other treatments for plane warts.

Topical photodynamic therapy (PDT) is a non-invasive procedure that consists of the application of a photosensitiser such as topical aminolaevulinic acid (ALA) or Methylaminolevulinate (MAL) followed by exposure to light of a peak excitation wavelength of the porphyrin precursor. After application, ALA is preferentially taken up by the target cells,

and upon light exposure, cytotoxic radicals are released which destroys the affected keratinocytes. As the topical porphyrin precursor is preferentially taken up by the target cells, normal cells are unharmed. It was initially shown to be effective in treating actinic keratosis, Bowen's disease, and basal cell carcinoma. Since its introduction, its uses has expanded to include acne vulgaris and granuloma annulare, localised scleroderma, sebaceous gland hyperplasia, photo-aged skin and psoriasis.<sup>2,3</sup> Recently, its use in viral warts has also been studied of which there have been several reports confirming its efficacy for viral warts including in immunosuppressed patients.<sup>4,5</sup> Apart from a direct cytotoxic effect, photodynamic therapy has anti-proliferative and anti-inflammatory effects as it also induces cytokine expression and specific immune responses such as the release of interleukin 1 and tumour necrosis factor  $\alpha$ , thus enhancing its efficacy on plane warts.

The main side effects are pain, swelling and erythema which are well-tolerated in general. Photodynamic therapy has the advantage that several lesions can be treated at the same time and is non-invasive with a low risk of infection and scarring. Its ease of application and the fact that the light source can non-laser or laser as long as it is of the suitable spectrum and is maximally absorbed by the photosensitiser is also another advantage. It is therefore another suitable therapeutic option for plane warts.

In this issue, Ding et al provide their data from a meta-analysis of clinical trials on the use of

PDT in the treatment of plane warts. The analysis of the nine trials gives us a clearer impression of the therapeutic effect of PDT on plane warts as compared to other treatment modalities enabling us to make the optimum therapeutic decision. From these findings, we can see that this treatment modality has the potential for wider use.

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## References

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