

Letter to the Editor

Pain and stinging associated with pretreatment in photodynamic therapy of actinic keratosis



Photodynamic therapy (PDT) with methyl aminolaevulinate (MAL) is a widespread treatment modality for actinic keratosis (AK). In Europe PDT is approved for treatment of AKs and basal cell carcinomas. The initial step in the treatment of AKs is removal of crusts and scales, most commonly by superficial curettage, followed by application of MAL cream, a prodrug [1,2]. The impact of the superficial curettage on the treatment efficacy has not been thoroughly studied [3]. After formation of protoporphyrin IX the treatment is completed by illumination [1,2]. Focus has been on the pain patients experience during illumination but after the introduction of daylight PDT the phototoxic reaction during illumination has become almost painless [4]. Therefore pain due to curettage and stinging after application of MAL cream to just curettaged skin has come into focus.

During routine standardized PDT treatment of AKs at the Department of Dermatology, Bispebjerg Hospital, we asked a number of our patients a few questions about the tolerability without interfering with the planned standardized treatment. We asked 27 patients about pain during superficial curettage of sun damaged skin with AKs and stinging when MAL cream was applied to curettaged skin. In addition, 10 of the patients had stinging scored when MAL cream was applied to not curettaged photodamaged skin. Pain was scored using a numerical scale ranging from 0 to 10, in which 0 = no pain and 10 = worst imaginable pain. Stinging was scored using an identical numerical scale, in which 0 = no stinging and 10 = worst imaginable stinging. Both pain and stinging were experienced in peaks during pretreatment. The maximal felt pain and stinging was noted. Time spent on curettage and the area of the skin curettaged was measured.

The patients consisted of 15 women and 12 men with a median age of 73 years (range: 49–90). The self-reported symptoms are summarized in Fig. 1. The median maximal pain score was 7 (range: 0–10). The median maximal stinging score after MAL cream application on curettaged skin was 5 (range: 0–10), and on untreated skin it was zero (range: 0–2). The stinging during MAL cream application can thus be avoided by omitting curettage. There were no differences in reported pain or stinging between sexes ($P > 0.4$, assessed using the Mann-Whitney test). The median time spent on curettage was 3 min (range: 2–6). During that time the median patient had a skin area of approximately 300 cm² (range: 10–1300) curettaged. There was no correlation between reported pain or stinging and time spent on curettage or skin area curettaged ($P > 0.07$, assessed using Spearman's rank-order correlation).

For comparison patients in another study by Wiegell et al. [4] using an identical numerical scale reported a mean maximal pain of 7 during illumination in conventional PDT whereas patient scored 2 during illumination in daylight PDT.

Although curettage lasts much shorter time than illumination in classical PDT patients experience substantial pain during curettage. It would be of value to investigate the possibility of performing PDT without curettage.

Funding sources

None.

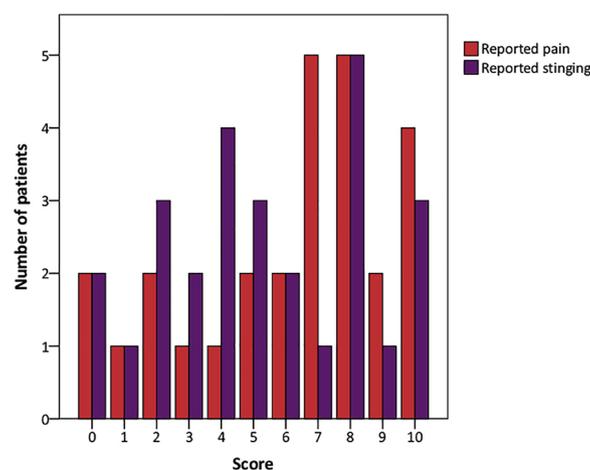


Fig. 1. Bar chart showing the maximal scored pain during curettage and stinging during cream application to curettaged skin ($n = 27$). The symptoms were scored on a numerical scale ranging from 0 to 10, in which 0 = no pain/stinging and 10 = worst imaginable pain/stinging.

Conflicts of interest

Wulf and Heerfordt has received speaking fees and travel grants from Galderma.

References

- [1] Available at: www.medicines.org.uk/EMC/medicine/11913/SPC/Metvix+160%20+%20mg+g+cream/. Accessed 26.10.2018.
- [2] R.N. Werner, E. Stockfleth, S.M. Connolly, et al., Evidence- and consensus-based (S3) Guidelines for the Treatment of Actinic Keratosis – International League of Dermatological Societies in cooperation with the European Dermatology Forum – Short version, *J. Eur. Acad. Dermatol. Venereol.* 29 (2015) 2069–2079.

- [3] I.M. Heerfordt, G. Bieliauskiene, H.C. Wulf, Protoporphyrin IX formation after application of methyl aminolevulinate on the face and scalp with and without prior curettage, *Photodiagn. Photodyn. Ther.* 22 (2018) 155–157.
- [4] S.R. Wiegell, M. Haedersdal, P.A. Philipsen, et al., Continuous activation of PpIX by daylight is as effective as and less painful than conventional photodynamic therapy for actinic keratoses; a randomized, controlled, single-blinded study, *Br. J. Dermatol.* 158 (2008) 740–746.

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