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Intralesional Photodynamic Therapy: A Comment on 'Pretreatment to Enhance Protoporphyrin IX Accumulation in Photodynamic Therapy' by Gerritsen et al.

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Key Words

Photodynamic therapy, intralesional • 5-Aminolevulinic acid

We read with interest a paper published in a recent issue of *Dermatology* [1], in which Gerritsen et al. review the procedures aimed at enhancing protoporphyrin IX accumulation before light

application in photodynamic therapy (PDT). The authors did not mention intralesional PDT, a seldom used technique which potential, though, is in our opinion underrecognized and underestimated.

As shown in table 1, intralesional PDT has been reported to be an effective and safe treatment for skin metastases of breast cancer [2], superficial and nodular basal-cell carcinoma [3, 4, 6, 7], squamous-cell carcinoma [4–7], Paget's disease [5] and acne vulgaris [8]. We have also successfully treated anogenital condylomata [unpubl. data].

Performing intralesional PDT is less time-consuming than several other pretreatment procedures [1]. Moreover, a study showed that the fluorescence induced by the intralesional injection of the prodrug was present as early as 4 h [9]; nonetheless, the time necessary to allow the conversion of the prodrug into the final photosensitizer is likely to be much shorter, as incubations <1 h were shown to be effective as well [2, 8]. It has also been proposed that intralesional PDT may be particularly effective in inflammatory disorders in which the epidermal surface is intact or nearly intact and the dermis thickened for physiological (scalp) or pathological reasons (morphea) [10]. In black patients, intralesional PDT may overcome, if not the diminished penetration of

Table 1. Reported studies on the use of intralesional PDT for skin diseases

Ref. No.	Condition	Number of patients	Formulation	Incubation h	Light source (fluence)	Number of sessions	Results
2	Skin metastases of breast cancer	9	1.5% TPPS ₄ in saline	0.75	Argon dye laser 630 nm (150 cm ⁻²)	5–31	Complete clearance in 3 patients, good results in 2
3	sBCC	1	10% ALA in saline	4	Visible light (500 J cm ⁻²)	1	Complete clearance
4	SCC BCC	8 11	0.02% hypericin in ethanol, glycerol and PEG 400	NR	Visible light (86 J cm ⁻²)	10–25 9–18	Complete clearance in 3 patients, good results in 7
5	Paget's disease	1	10% ALA in saline	4	Visible light (500 J cm ⁻²)	10	Complete clearance
6	nBCC	10	10% ALA in saline	3	Red light 630 nm (100 J cm ⁻²)	1–3	Complete clearance
7	BCC, SCC	20	20% ALA in saline	1	Blue light (10 J cm ⁻²) or pulsed dye laser (7.5 J cm ⁻²)	2	Complete clearance
8	Acne vulgaris	10	11.8% ALA in saline	0.5	Pulsed dye laser (7.5 J cm ⁻²)	2–3	Better results than conventional PDT

Ref. = Reference; sBCC = superficial basal-cell carcinoma; SCC = squamous-cell carcinoma; nBCC = nodular basal-cell carcinoma; TPPS₄ = meso-tetra-(*p*-sulphophenyl)porphyrin; ALA = 5-aminolevulinic acid; PEG = polyethylene glycol; NR = not reported.

light due to the increased melanin filter, at least the increased thickness of the stratum corneum [11]. Also according to our experience, this technique does not affect the compliance of patients [6] and causes fewer side effects (erythema, crusting) in the post-irradiation period than conventional topical PDT [8].

The only disadvantage of intralesional PDT may be the difficulty to treat simultaneously relatively large areas of field cancerization.

Evidence-based studies addressing the effectiveness, safety profile and effectiveness/cost ratio of intralesional PDT versus conventional topical PDT are therefore warranted.

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