British Photodermatology Group Position Statement:

Photodynamic Therapy

Background

Topical photodynamic therapy (PDT) is widely used in Dermatology and involves photoactivation of a tissue-localised photosensitiser, with resulting photodynamic effect. To date, mainly porphyrin pro-drugs have been used. Topical PDT is highly effective for superficial non-melanoma skin cancer (NMSC) and is at least as effective as cryotherapy and imiquimod for actinic keratosis (AK), 5-fluorouracil and cryotherapy for Bowen's disease (BD), and cryotherapy and surgery for superficial basal cell carcinoma (SBCC). Cosmetic outcome and patient preference is superior for PDT in comparative studies. Long-term recurrence rates are approximately 20-25% by three to five years which is consistent with other non-surgical therapies. British and European guidelines summarise the evidence base for topical PDT[1-5]

PDT is an important and advantageous therapeutic option for patients with multiple or large lesions and for field change and specific body sites where healing is compromised, such as the lower leg. It can be effectively used in immunosuppressed patients. For nodular BCC, topical PDT is inferior to surgery with follow-up to five years and topical PDT would not be the treatment of choice for nodular BCC unless surgery was contraindicated. Topical PDT is not recommended for invasive squamous cell carcinoma, malignant melanoma, other heavily pigmented tumours or subcutaneous metastases.

Topical PDT is generally well tolerated, although pain during irradiation can occur. Pain relief can usually be achieved by simple measures, such as cooling and reduction of irradiance of light delivery. The latter is being explored by use of very low irradiance portable or daylight PDT regimes. Nerve blockade is only occasionally required.

Topical PDT was assessed by NICE (Interventional procedures guidance 155 (Feb 2006); Medical Technologies Guidance MTG6 (July 2011)). Topical PDT was also included in a systematic review of PDT in Oncology[4] and was reviewed by the Department of Health.

In summary, topical PDT should be widely available in dermatology, and accessible to all involved in the management of patients via skin cancer pathways. Its main use should be for superficial AK, BD and SBCC and it is advantageous for patients with large and multiple lesions, field carcinogenesis, and difficult treatment sites such as the lower leg. Treatment outcomes should be recorded by local governance mechanisms.

Recommendations

- Topical PDT should be accessible to all dermatology departments and particularly for those involved in skin cancer management.

- Topical PDT should be considered for patients with a diagnosis of superficial basal cell carcinoma, Bowen's disease or actinic keratosis.

- Topical PDT should be considered as treatment of choice for Bowen's disease on the lower leg because of the proven reduction in risk of complications at this site.

- Topical PDT is particularly advantageous and should be considered as first-line treatment for patients with large, multiple, low risk lesions and field change carcinogenesis, including in immunosuppressed patients.

- Mechanisms of governance are desirable and should be encouraged in order to monitor treatment delivery and outcomes (the principles of phototherapy guidelines are allied and may be a useful resource to adapt in this context).

References

1 Morton CA, Brown SB, Collins S *et al.* Guidelines for topical photodynamic therapy: report of a workshop of the British Photodermatology Group. *Br J Dermatol* 2002; **146**: 552-67.

2 Morton CA, McKenna KE, Rhodes LE *et al.* Guidelines for topical photodynamic therapy: update. *Br J Dermatol* 2008; **159**: 1245-66.

3 Braathen LR, Szeimies RM, Basset-sequin N *et al.* Guidelines on the use of photodynamic therapy for nonmelanoma skin cancer: an international consensus. *J Am Acad Dermatol* 2007; **56**: 125-43.

4 Morton CA, Szemies C, Sidoroff A *et a*l. European guidelines for topical photodynamic therapy part 1: treatment delivery and current indications – actinic keratoses, Bowen's disease, basal cell carcinoma. *J Euro Acad Derm Venereol* 2013; **27**: 536-44

5 Morton CA, Szemies C, Sidoroff A *et al*. European guidelines for topical photodynamic therapy part 2: emerging indications – field cancerization, photorejuvenation and inflammatory/infective dermatoses. *J Euro Acad Derm Venereol* 2013; **27**: 672-79

6 Fayter D, Corbett M, Heirs M *et al.* A systematic review of photodynamic therapy in the treatment of pre-cancerous skin conditions, Barrett's oesophagus and cancers of the bilary tract, brain, head and neck, lung, oesophagus and skin. *Health Technol Assess* 2010; **14**: No.37.