

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 dysplasia 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 with 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 and updated guidelines emphasise the importance of availability of PDT to offer as treatment for non-hyperkeratotic AK, BD, SBCC and in some instances thin nodular BCC if surgery is not feasible or appropriate¹⁻⁶.

PDT is an important and advantageous therapeutic option for patients with multiple or large lesions and for field change carcinogenesis and for use at 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 contraindicated⁷. 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 and is not typically treatment limiting⁸. Pain relief can usually be achieved by simple measures, such as cooling and reduction of irradiance of light delivery and nerve blockade is only occasionally required. Low irradiance PDT is feasible through daylight PDT regimes and other portable home-based options are under investigation. There is a growing evidence-base to support the use of daylight PDT for field change non-hyperkeratotic actinic keratoses affecting larger areas on the face and scalp, with encouraging data showing treatment to be as effective but much less painful than hospital-based PDT for this indication⁹⁻¹¹. Topical PDT was assessed by NICE (Interventional procedures guidance 155 (February 2006); Medical Technologies Guidance MTG6 (July 2011)). Topical PDT was also included in a systematic review of PDT in Oncology¹² and was reviewed by the Department of Health. The recent development and application of the British Association of Dermatologists Standards for the delivery of PDT offers a comprehensive framework to facilitate the introduction of new PDT services and the governance and audit of all processes involved in the delivery of effective and safe PDT¹³. This includes the necessary equipment, facilities and education and training of staff involved in PDT delivery and patient care. These standards include the aims, objectives and outcomes of PDT services, which are important for audit and benchmarking of clinical practices.

In summary, topical PDT should be widely available in dermatology, and accessible to those 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. Updated guidelines for the use of PDT and the introduction of standards for the clinical governance of the processes and outcomes of PDT are invaluable in order to ensure the optimal effective and safe use of PDT in dermatology.

Recommendations

- Topical PDT should be accessible to all dermatology departments and particularly for those involved in skin cancer management.
- Topical PDT should be considered and available to offer to patients with a diagnosis of superficial basal cell carcinoma, Bowen's disease or non-hyperkeratotic actinic keratosis.
- Topical PDT should be considered and available to offer for Bowen's disease at sites of poor healing, such as the lower leg, or at cosmetically sensitive sites.
- Topical PDT may be particularly advantageous for large, multiple, low risk lesions of BD and/or SBCC and for field change carcinogenesis and AK, including in immunosuppressed patients.
- Daylight PDT can be considered as an effective, well-tolerated and relatively painless treatment for patients with field change AK on the face and scalp.
- Clinical governance of PDT services, processes and outcomes is important and should be in keeping with BAD Standards.

Addendum

Please note, given the impact of the COVID-19 pandemic, PDT services will be considerably impacted and adjustments will be required to minimise the risk of transmission and to take into account the increased requirements for patient and staff safety through social distancing measures, screening and individual risk/benefit assessment. Please see the accompanying BPG and BAD guidance on this with respect to PDT services (<https://www.bad.org.uk/healthcare-professionals/covid-19/recommencing-services-during-covid-19>)¹⁴

References

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PRODUCED JANUARY 2013

UPDATED JUNE 2020

REVIEW DATE JUNE 2023