Methyl aminolaevulinate photodynamic therapy for the treatment of hidradenitis suppurativa and pilonidal cysts
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Summary
Hidradenitis suppurativa (HS) and pilonidal cysts are chronic, inflammatory skin conditions involving apocrine gland-bearing skin. Treatment is limited and unsatisfactory. Photodynamic therapy (PDT) has been reported to be safe and effective in the treatment of several off-label skin conditions. We report the case of a 29-year-old man affected by HS and pilonidal cysts since the age of 21. In the past, the patient was treated with antibiotics, corticosteroids and retinoids, without significant clinical improvement. Treatment with methyl aminolaevulinate (MAL)-PDT was started. A topical MAL cream (Metvix®) was applied to the affected areas with an occlusive dressing for 3 h and irradiated with a red light source. Therapy was repeated every 15 days for a total of nine applications. The patient completed a 6-month follow-up and achieved an almost complete clinical remission (80%) of the skin lesions and complete resolution of the itching and discomfort. This is the first case of HS associated with pilonidal cysts treated with MAL-PDT. MAL-PDT was effective and well tolerated in our patient. The costs of this therapy represent an important limitation, taking into account the high number of sessions that were performed compared with non-melanoma skin cancers.

Key words:
hidradenitis suppurativa; pilonidal cyst; photodynamic therapy (PDT); methyl aminolaevulinate (MAL)

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Hidradenitis suppurativa (HS) is a chronic, inflammatory skin condition involving apocrine gland-bearing skin. HS may be associated with pilonidal cysts, and foreign body reactions accompanied by chronic inflammation typically of the sacrococcygeal region. The clinical course of both conditions is variable, the onset is insidious and associated with discomfort, pruritus and significant impairment of quality of life. Treatment is limited and unsatisfactory (1). Photodynamic therapy (PDT) is a therapeutic option in which the topical delivery of photosensitizing drugs is followed by irradiation with visible light. The most common photosensitizing drugs used for PDT in dermatology are 5-aminolevulinic acid (ALA) and its methyl ester (methyl aminolaevulinate, MAL) (2). PDT is currently approved for the treatment of actinic keratosis, Bowen’s disease and basal cell carcinoma. Moreover, PDT has been reported to be safe and effective in the treatment of several off-label skin conditions (2), although the range of potential applications has not been fully explored.

We report the case of a 29-year-old Caucasian male, phototypes III–IV, affected by HS since the age of 21. Physical examination showed multiple nodules and sterile abscesses associated with pilonidal cysts involving the axillae and the perineal areas (Fig. 1a). The lesions were extremely pruritic and the patient had severe discomfort in the affected areas. In the past, the patient had been treated with antibiotics, corticosteroids and retinoids, without significant clinical improvement. Because of the patient’s unresponsiveness to traditional therapies, treatment with PDT was discussed and proposed to the patient. Before treatment and after receiving full disclosure, written informed consent was signed by the patient.

A topical MAL cream (Metvix®; Galderma, Agrate Brianza, Italy) was applied to the affected areas with an occlusive dressing for 3 h. After removing of the remaining cream and washing with a saline solution, lesional skin was irradiated with a red light source (570–670 nm) at a dose of 37 J/cm² for 8 min at a skin distance of 50 mm. Treatment was repeated every 15 days for a total of nine applications (Fig. 1b). At present, the patient has completed a 6-month follow-up and achieved an almost complete clinical remission (80%) of the skin lesions, with a marked improvement of the inflammation and complete resolution of the itching and discomfort. Common side effects were a burning sensation and pain during application. Mild erythema was experienced the day after treatment.

We report a successful clinical response induced by PDT in a man affected by resistant and disabling HS associated with pilonidal cysts. Only two case series have described the use
of PDT as unresponsive; HS PDT has never been reported in the treatment of pilonidal cysts (3, 4). Even if the results were controversial because blue light cannot penetrate to the gland level, Gold et al. (3) reported the effectiveness of ALA-PDT and blue light in four patients unresponsive to standard HS therapy. In contrast to these results, Strauss et al. (4) observed complete failure in the treatment of four patients with ALA-PDT, reporting significant side effects. Both authors used ALA as a photosensitizer. Unlike ALA, MAL is taken up by passive transmembrane diffusion. Thus, MAL is characterized by an enhanced penetration compared with ALA. Light might also have a disease-modulating effect because in wound healing it has been reported that a low-energy laser has a stimulating effect on cells whereas high-energy radiation has an inhibitory effect; moreover, macrophages exposed to 660 nm low-level wavelengths release cytokines that stimulate fibroblast proliferation and the production of growth factors, thus influencing the inflammatory process, healing and wound repair (5). In our experience, MAL-PDT led to partial remission of the HS and pilonidal lesions and complete remission of the symptoms after a total of nine sessions of PDT, representing the first case of MAL-PDT in these conditions.

Considering the high costs and the number of sessions performed to achieve a clinical response, PDT should be investigated as a treatment for resistant regional involvement with HS and pilonidal cysts. Taking into consideration the limited experience, further investigations and blinded controlled studies are needed in order to evaluate whether the stage of the disease, the skin phototype and the photosensitizer play a role in the clinical response.

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**References**