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Commentary

Scleroderma Treatment by Using Laser

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DESCRIPTION

Localized Scleroderma (LoS) occurs due to excessive deposition of the collagen on the skin. It is also known as Morphea includes a variety of autoimmune diseases of sclerosing skin. It is characterized by inflammation and localized skin thickening. However, in some cases, deeper organizations may also be involved. Although morphea is not considered a life-threatening illness, obvious cosmetic variants, functional or psychosocial disorders affect multiple areas of the patient's quality of life. Treatments for LoS are often inadequate for many treatments that are of limited efficacy or have serious side effects. Due to advances in laser use and their beneficial effects the purpose of this study is to reported use of lasers in morphea.

The active phase of morphia represents limited inflammation manifested as red or purple spots, followed by characteristic porcelain white or waxy yellow curable plaques often subjective symptoms such as pruritus and pain. After months or years the sclerosing plaque disappears but atrophy and poor pigmentation of the skin and/or deeper tissue persists as an atrophic phase. Some severe types, especially the generalized linear type may be associated with a variety of extracutaneous symptoms. Diagnostic skin biopsy should be performed only when the clinical picture is unclear, but it should be emphasized that histopathological features reflect the stage. Early active lesions with thickened and homogenized collagen bundles and perivascular infiltration are usually composed of lymphocytes and plasma cells or eosinophils and monocytes. The epidermis is usually atrophic.

A clinical assessment of skin involvement in morphia should be performed using standard tools the Local Scleroderma Skin Assessment Instrument (LoSCAT) and a general medical assessment (Physician's Global Assessment (PGA)). LoSCAT is a combination of the Modified Localized Scleroderma Severity Index (mLoSSI) and the Localized Scleroderma Skin Damage Index (LoSDI). mLoSSI assesses signs of disease severity/activity including erythema, skin induration and the development of new or expanding existing lesions over the past month. LoSDI, on the other hand, includes skin and subcutaneous atrophy and depigmentation.

Excimer laser

Excimer lasers use a mixture of reactive and inert gases. When electrically excited the gas mixture emits a monochromatic laser beam of coherent wavelength (308 nm) resulting in very accurate and changes in the irradiated material. Keratinocytes and T-cells absorb the light, promoting DNA damage and reducing local inflammation and keratinocyte activity. The advantages with the excimer laser is limited course of treatment with lower UV light exposure and direct way of acting this leads to their widespread use in many local skin diseases characterized by inflammation or hypopigmentation (psoriasis, vitiligo, atopic dermatitis, alopecia areata, or cutaneous Tcell lymphoma). For treatment of morphea lesions excimer are used sucessfully Carbon Dioxide (CO2) or Erbium Doped Yttrium Aluminum Garnet (Er:YAG).

Fractional lasers

The fractional lasers mode of action is depend on fractional photo thermolysis which means generating in the skin a mesh of micro thermal treatment zones surrounded by healthy, undamaged tissue. In case of morphea patients fractional lasers promotes proper wound healing who are at risk of impaired regeneration of traumatic skin lesions. Histologically, the process of reepithelialization begins within 1-2 days after laser treatment. Fractional lasers have been reported to be effective in reducing the symptoms of acne lesions, stretch marks, chloasma, lichen planus, lichen sclerosus, or lichen sclerosus chronic graft-versus-host disease.

Alexandrite laser

Alexandrite lasers are short pulsed (Qswitched) or long pulsed laser systems. It is believed to be particularly effective in treating superficial pigmented lesions, but it is also beneficial in removing vascular lesions and unwanted hair and tattoos.

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