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251

LOW DOSE PHOTOFRIN II PHOTODYNAMIC THERAPY OF PSORIASIS. Gerald D. Weinstein, Jerry L. McCullough, J. Stuart Nelson, Michael W. Berns, Allison McCormick, Dept. of Dermatology, Beckman Laser Institute and Departments of Surgery (JSN, MWB), University of California, Irvine, Irvine, California.

Photodynamic therapy (PDT) with hematoporphyrin derivative (PHOTOFRIN™ II, DHE) is used experimentally in the treatment of a variety of human malignancies. The objective of this dose-ranging pilot study is to obtain information on the selective photosensitivity and clinical efficacy of low dose DHE and light (visible and UVA) for the PDT of psoriasis (PS).

Patients received a single I.V. dose (0.5 mg/kg) DHE. 4-48 hrs later, different sites of lesional and normal skin (NS) were treated with various dose/schedules of visible light: a single treatment with argon tuneable dye (ARD) laser 630 nm; or krypton (KRP) laser 405 nm; UVA: 9-20 treatments over 3-4 weeks. Treatment sites were evaluated weekly for 7 wks for lesion severity and NS photosensitivity.

Eight patients have completed the study. Clinical responses were dose related. The low starting doses for KRP (0.5 J/cm^2 (J)); ARD (5 J); cumulative UVA (75 J) were clinically ineffective. Light doses were sequentially escalated in succeeding patients to maximize clinical response. 85-100% clearing was obtained in 2 patients 3 wks after a single treatment with 15 J ARD. The average maximum response obtained with KRP (1-30 J) was 25%; with UVA (cumulative 97-394 J) 20%. Maximum therapeutic effects with laser were obtained with light treatment 48 hr post DHE, with no response obtained with light treatment at 4 hr or 24 hr post DHE. At 24-48 hr post DHE, selective fluorescence could be detected in PS vs NS. There was only transient mild-moderate erythema in PS and NS 24 hr post treatment. With the low dose of 0.5 mg/kg DHE there were no episodes of prolonged cutaneous photosensitivity with patients using reasonable protection.

These preliminary results suggest that while PDT with DHE and KRP or UVA is not clinically useful, treatment with red light may provide a safe and useful alternative form of photodynamic therapy for psoriasis.