
Abstract: Ultraviolet (UV) A1 phototherapy is an effective anti-inflammatory treatment modality that influences fibroblast functions. To document the effects of UVA1 treatment in patients with localized scleroderma (LS) in a retrospective study (at least 6 months after UVA1 treatment) and in a prospective study before and immediately after medium-dose UVA1 irradiation. In total, 30 patients (retrospective study n = 17, prospective study n = 13) with LS receiving UVA1 phototherapy five times weekly (for 3-6 weeks) were investigated. Improvement was documented using standardized questionnaires and clinical evaluation (using modified Rodnan skin score, Cutometer and 7.5-MHz ultrasound measurements). Levels of collagen I and collagen III metabolites were measured in serum and urine. In the retrospective study, medium-dose UVA1 phototherapy had been performed 6 months-3 years earlier (cumulative dose 750-1400 J cm(-2); mean + or - SD number of irradiations 19.3 + or - 3.8). Fourteen of 17 patients (82%) reported an improvement in symptoms following UVA1 therapy. In the prospective study, skin elasticity increased in 77% of the patients following medium-dose UVA1 phototherapy (cumulative dose 750-1250 J cm(-2); mean + or - SD number of irradiations 20.8 + or - 4.0). 7.5-MHz ultrasound measurements showed a mean reduction of lesional skin thickness of 13% compared with
skin thickness before UVA1 phototherapy. The ratio of deoxypyridinoline to creatinine was significantly elevated in about two-thirds of the patients. This open study showed a positive short- and long-term efficacy of UVA1 phototherapy in patients with LS, with a reduction in sclerotic plaques, an increase in skin elasticity and a reduction of lesional skin thickness. UVA1 phototherapy had a significant effect on collagen metabolism. UVA1 phototherapy can be regarded as a safe treatment modality for patients with LS.