Clinical and videocapillaroscopic features and serum concentration of nitric oxide in patients with Raynaud's phenomenon after Multiwave Locked System laser therapy

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ABSTRACT

Purpose: The aim of the study was the assessment of the influence of MLS laser therapy on morphological changes in nailfold videocapillaroscopy (NVC), clinical features, and the serum NO level in patients with primary and secondary Raynaud's phenomenon (RP).

Materials and methods: The analysis was performed on a group of 78 patients with RP and 30 healthy volunteers, who underwent NVC examination. NO concentration was assayed using the Griess method in blood serum before and after 3-weeks of laser biostimulation. MLS was performed with a Laser-M6 ASA Company device, for 3 weeks with weekend breaks, using the following parameters: a frequency of 1500 Hz, a dose of 25 J/cm2, and a time of 2.5 minutes on one hand.

Results: After 3 weeks of MLS laser therapy, the beneficial clinical effects manifested by a decrease of duration and number of RP attacks and degree of pain score on the visual analogue scale (VAS) in patients with primary and secondary RP. Clinical improvement after MLS laser therapy was reflected in the assessment of microcirculation disorders in NVC examination. Moreover, the tendency of normalization of NO concentration in the serum of patients with primary and secondary RP may suggest a favorable effect of laser biostimulation on the regulation of processes taking part in microcirculation disorders.

Conclusions: The results showed that NVC is a useful diagnostic tool in the evaluation of dynamic microvascular involvement in RP patients. MLS laser therapy has a beneficial effect in patients with primary and secondary Raynaud's phenomenon

Keywords: Raynaud's phenomenon, Multiwave Locked System laser therapy, videocapillaroscopy, nitric oxide

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