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## Combination of microneedle radiofrequency (RF) and low-level light therapy (LLLT) in new treatment protocol in patients with acne

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**Statement of the problem:** The RF radiation has pathogenetic orientation that generates thermal action. The effect of the RF microneedling combines the benefits of non-ablative fractional photothermolysis and deliver energy to the tissue mechanically. The depth of needle insertion affects most of the sebaceous glands. An additional treating method is low level light therapy (LLLT), which penetrates the skin and influences biological processes in tissues, stimulates regeneration and metabolism, improves hemodynamics and microcirculation, provides anti-inflammatory, immunocorrecting effects. We have proposed a combined method of treating acne, which includes the use of RF-microneedles followed by LLLT.

**Purpose of the study:** To assess the effectiveness of the combined use of RF-microneedles and LLLT in treatment of acne patients.

**Material and methods:** There were 19 patients under our supervision aged 18 to 31 with varying degrees of severity of acne, 13 of them (68.4%) were women and 6 (31.6%) men. All patients underwent RF microneedling with the INFINI device (Lutronic, South Korea) with the following parameters: depth of needle insertion - 1.5 mm, power - 500W, level-3. Immediately after RF microneedling LLLT Healite (Lutronic, South Korea) was performed with frequency of 48 hours in 5 sessions. A total of 4 combined procedures were administered to each patient once a month.

**Findings:** A total clinical recovery was noted in 16 (84.2%) patients as a result of 4 RF-microneedling procedures, which was expressed in the resolution of inflammatory lesions and post-inflammatory hyperpigmentation, reduction in sebum hyper-production, and partial smoothing of atrophic scars. In 3 (15.8%) patients significant improvement was noted.

**Conclusion:** The use of complex therapy by RF-microneedles and LLLT in the treatment of acne patients can significantly reduce the medicine dose, shorten the course of treatment, and correct post-inflammatory effects.

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