The efficacy of intense pulsed light for correction and treatment of some dermatological and aesthetic problems

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Laser therapy is a complex of hardware procedures that involve exposure of the skin to light energy and allows getting rid of a number of skin imperfections.

Objective — to study the feasibility of using laser technologies to solve some dermatological and aesthetic problems of patients.

Materials and methods. The results of the therapy using the Nordlys device, the principle of operation of which is based on the theory of selective photothermolysis, were analyzed and presented. We observed 118 patients (42 men and 76 women aged 18 to 65 years) with different dermatological problems. The Dermatology Life Quality Index (DLQI) was used to determine the effectiveness of the treatment.

Results and discussion. The Nordlys narrow-spectrum IPL technologies were used to treat couperose and rosacea. The procedures were performed for 5—30 minutes with intervals of 1—2 weeks, 2—5 procedures per course. 17 patients with couperose and 29 patients with rosacea of different stages were treated.

The IPL therapy was used for the laser treatment of acne. The procedures were carried out for 15—45 minutes with intervals of 2 weeks, 4—7 procedures per course. In patients with grade 1—2 acne, the manifestations of acne disappeared after 4—5 procedures without residual effects (scars), and in patients with grade 3 acne — after 5—7 procedures.

The Nordlys multifunctional platform (with narrow-spectrum IPL (PR 530 and VL 555) was used to treat hyperpigmentation. The results of treatment of 15 patients with superficial pigmentation (freckles, chloasma, secondary hyperpigmentation) and 10 patients with deep pigmentation (post-traumatic and significant chloasma) were analyzed. 2—3 procedures for 5—30 minutes were used to achieve a sustainable therapeutic effect for superficial

pigmentation. The biorevitalization, PRP therapy and depigmentation mesococktails were simultaneously used for patients with deep pigmentation.

To assess the effectiveness of treatment, the Dermatology Life Quality Index (DLQI) was determined in all patients before and after the treatment. In patients with couperose, the DLQI before treatment was 12.54 ± 0.54 and after treatment 8.43 ± 0.65; in patients with rosacea, respectively 16.96 ± 0.75; 9.82 ± 0.97, in patients with acne and post-acne, respectively 19.53 ± 0.65; 10.98 ± 1.58 and 14.42 ± 0.49, 8.38 ± 0.52, in patients with superficial and deep pigmentation, respectively: 11.83 ± 0.58; 8.42 ± 0.39 and 13.92 ± 0.64; 9.22 ± 0.42 ($p < 0.001$).

As a result of the comprehensive treatment using laser therapy, the DLQI indicators statistically significant improved in patients of all groups: in patients with couperose and rosacea — by 48.75 % and 72.71 %, acne and post-acne — by 7.87 and 72.07 %, superficial and deep igmentation — by 40.49 and 50.98 % ($p < 0.001$). It is important to note that even a moderate (by 1—2 points) reduction in the impact of the skin disease on certain aspects of the DLQI led to a reliable improvement of this indicator after treatment.

Before treatment, only 36 (30.51 %) patients experienced a moderate impact of skin disease on the life quality, while 82 (69.49 %) patients noted a significant impact. However, after the combination treatment using laser therapy, only 14 (11.86 %) patients felt a significant impact of their skin disease on their life quality, while all the remaining 104 (88.14 %) patients noted a significant improvement in the life quality.

Conclusions. Laser therapy in the comprehensive treatment of patients with dermatological and aesthetic problems allows reducing the clinical manifestations of dermatoses, eliminate some factors of development and lead to a statistically significant ($p < 0.05$) improvement in the quality of life indices.