

Nanochemistry and biotechnology

Nanocomposite preparation Sertasil (Acapsil) and Nitric Oxide Joint Application Potency in Treatment of Lower Limbs Complicated Trophic Ulcers

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Venous trophic ulcers occur in 2% of cases in Europe and more than 12.9% of patients in Ukraine and so their treatment is of great importance. The NO-therapy based on nitrogen oxide therapeutic effect due to its antibacterial, antiaggregant and anticoagulant properties could be promising for such cases. For maximum effect in the treatment of trophic ulcers could be used a combination of NO-therapy with the application sorbent Sertasil(Acapsil) - the new preparation comprising nanosilica and enzyme serralysin immobilized there on [1].

The study involve 160 patients with various types of chronic venous diseases of the lower limbs, 73 (45,6%) men and 87 (54,4%) women. Disease duration was on average 12.5 years. Among them 44 patients were with CVI in the stage of C6 (23 men and 21 women). 62,3 % of patients had cardiovascular pathology, and 19.8% - diabetes mellitus type II, 8 patients had erysipelas. Patients were divided into two groups: main, in which was applied topically NO-therapy in combination with Sertasil, and control, in which to clean ulcers topically applied 10% sodium chloride, and after purification – ointment Levomikol. Phlebektomiya with overfascian ligation of perforating veins was performed in 25 patients, and after cleaning of the ulcer was conducted Alo(auto)dermoplasty in 10 patients.

Results. In the main group of patients the relief of pain days were 2.3 ± 1.3 compared to 6.3 ± 1.1 for control group ($P \leq 0.05$), cleanse ulcers took 4.7 ± 0.5 day and 11.3 ± 1.1 day, respectively ($P \leq 0.05$). Days to onset of tissue granulations were 3.9 ± 1.5 and 8.6 ± 1.3 , and days to complete ulcers healing were 17.7 ± 1.1 and 23.5 ± 1.5 for main and control groups respectively ($P \leq 0.05$).

Conclusion. In the main group was noted faster cleansing ulcers in 2.4 times, the appearance of granulation – 2.2 times, the ulcer healing by 1.3 times, relief of pain occurred in 2.7 times faster.

1. *Bilyayeva O., Neshta V., Golub A., Sams-Dodd F.* Effects of SertaSil on wound healing in the rat//J. of Wound Care.- 2014.- **23** , N 8.- P. 410-416.