

Nanochemistry and biotechnology

Nanocomposite Preparation Orniseratosil for Treatment of Suppurative Septic Diseases of Soft Tissues

O.O.Bilyayeva¹, I.V.Karol¹, E.E.Kryzhevskiy¹, A.A.Golub²

¹ Shupik National Medical Academy of Postgraduate Education, 9 Dorohozhytska str., 04112, Kyiv, Ukraine, E-mail: vanuk10@meta.ua

² National University of Kyiv-Mohyla Academy, 2 Skovorody str., 04070, Kyiv, Ukraine

Suppurative-septic diseases of soft tissues are an actual problem in the field of surgery due to its wide dissemination, complicated course and often non-effective results of treatment. The frequency of this pathology among patients reaches 40%, which makes this problem of high social and economic significance.

The purpose of this study is improvement of treatment of suppurative-septic diseases of soft tissues. For this reason, we offer to implement complex treatment with application of new nanosorbent Orniseratosil - a nanocomposite drug, based on pyrogenic silica with immobilized on its surface ornidazole and proteolytic enzyme serratiopeptidase.

The study included 33 patients (main group) with suppurative inflammatory diseases of soft tissues. The group comprised 2 patients (6.1%) with infected wound, 1 patient (3.0%) with hematic abscess, 1 (3.0%) with lymphatic abscess, 3 (9.1%) with carbuncle, 2 (6.1%) with axillary abscess, 3 (9.1%) with festered atheroma, 4 (12.1%) with phlegmon, 4 (12.1%) with whitlow, 7 (21.2%) with abscess, 6 (18.2%) with abscessing boil. Distribution of patients by gender was as next: 8 (24.2%) of patients were females, 25 (75.8%) were males. Average age of patients were about 36.8±3.1 years, average weight was about 75.8±2.6 kg. The control group consisted of 30 patients which had a complex treatment by conventional medication Gentaxane. Groups by gender, age, duration of disease, critical conditions of patients and areas of injury were correlated. The differences were supposed to be statistically important if $p < 0,05$.

Results. For the entire patient group, the number of days (mean±SD) to reaching a clean wound was 2.4±0.1 for Orniseratosil compared to 5.0±0.4 for Gentaxane. Days to onset of granulation were for Orniseratosil and Gentaxane: 3.5±0.1; and 7.4±0.7 days, respectively, and days to onset of epithelialization were: 4.2±0.2 and 10.1±0.8 days, respectively. The number of bed-days for main group was 6.0±0.2 and 13.1±1.0 for control group, respectively.

Conclusion. Usage of nanosorbent Orniseratosil in complex treatment of main group patients allowed decreasing the duration of hospitalization for 2.2 times, comparing with patients of control group for wound types studied.