Introduction:
Patients in UWS are characterized by a persistent systemic inflammatory response syndrome that can lead to selenium deficiency

Methods:
Analysis of selenium level was investigated in 54 UWS patients with signs of SIRS: 31 patients with TBI and 23 patients with hypoxia. Duration of UWS was 2-4 months. Selenium blood level was performed once every 10 days for 30 days (three times on the whole). After first blood level measurement, 46 patients (27 TBI and 19 hypoxia) received sodium selenite pentahydrate (Selenase) at a dose of 6 mkg/kg/day for 7 days; in 8 patients (4 TBI and 4 hypoxia), selenase was not administrated (control group).

Results:
In patients who were treated with selenase, maximum concentration of selenium was observed on the 20th day and was 34.74% higher on average than in the initial study. In the initial study, the average value in patients with hypoxia was 24.24 ± 10.90 mkg/l, the maximum value was 61.30 mkg/l, between 2-9 days 28.83 ± 15.46 mkg/l (max 70.00 mkg/l), from 10-19 day - 30.22 ± 8.54 mkg/l (max 50.70 mkg/l), from 20-30 days 34.76 ± 16.75 mkg/l (57.10 mkg/l). At the first measurement the average value in patients with a consequence of TBI was 24.81 ± 8.83 mkg/l, maximum value was 53.00 mkg/l, between 2-9 days 39.26 ± 12.39 mkg/l (max 64.50 mkg/l), from 10-19 day - 37.41 ± 12.88 mkg/l (max 59.50 mcg/l), from 20-30 days 37.35 ± 12.75 mcg/l (max 64.30 mcg/l). Original selenium blood level are 23-190 mkg/l. The average value of the initial values in the control group was 21.4 ± 1.6, mkg/l on day 30 in the control group 17.8 ± 3.8 mkg/l

Conclusion:
Therapy with selenase showed a statistically significant increase of selenium blood concentration (p = 0.00) compared with the control group. Selenase administration did not show a statistically significant value on severity of SIRS process. Average values of selenium levels did not depend on the etiology of brain damage in UWS patients. The study was funded by RFBR project number 19-29-01066/2019