**Introduction**

The literature data suggests that under the influence of the Radial Extracorporeal Shock-Wave Therapy (RESWT) in animals with experimental bone injuries there has been observed the formation of a callus with a large number of angiogenic and osteogenic growth factors (using immunohistochemistry) and more active reparative osteogenesis (O. A. Ostrovskyi, 2013; Xie Fei, 2015).

**The aim** of this study was to investigate the effect of radial ESWT on the activity of immune blood serum in rabbits in the dynamics before and after the tibia injury.

**Materials and methods**

Immunological studies were performed on 40 adult rabbits, which were divided into control and experimental groups. There was used tibia perforating defect model on animals. For the animals of the experimental group after the injury 4 treatment sessions of ESWT were performed by using the Masterpuls MP200 device from Storz Medical with the pulse frequency of 1-21 Hz and application pressure of 1-5 bar. In each observation period (2, 15, 30, 45 days before and after the injury) 5 rabbits were taken from both groups of animals. The immune serum functional activity was studied by using the method of T.P.Stannojkovich et all., (2005).

**Results**

In the study there was detected the level of cytotoxic activity of lymphocytes and macrophages, autologous serum potentiation, the cytotoxic activity of lymphocytes and macrophages (modulation index), the cytotoxic activity of the blood serum, the level of middle molecular circulating immune complexes.

Assessing the immune blood serum activity it should be noted that after the experimental tibia injury in animals there was observed partial paralysis of functional activity of immune blood serum (depletion phase) with a subsequent gradual normalization during the study (restoration phase). However, by the end of the experiment (the 45th day) the complete restoration of cell activity was not observed in animals of the control group. In rabbits of the experimental group after 4 treatment
sessions of ESWT the immune cells activity was characterized as normal, moreover, it was significantly higher than norm level.

Conclusions

1. Experimental studies have shown that after the tibia injury (traumatic defect) in rabbits it is observed a significant reduction of functional activity of lymphocytes and macrophages, blood serum, cytotoxic activity of blood serum, increased index of lymphocytes and macrophages modulation, the level of circulating immune complexes (depletion phase).

2. The depletion phase is followed by the phase of gradual restoration of functional activity of immune blood serum. However, by the 45th day after the injury the complete restoration of functional activity was not observed in animals of the control group whereas in rabbits of the experimental group after 4 treatment sessions of ESWT the immune markers not only reached the initial values, but also significantly exceeded them.