

SUMY STATE UNIVERSITY
MEDICAL INSTITUTE



**BIOMEDICAL
PERSPECTIVES**

II

ABSTRACT BOOK

*International Scientific Conference
of Students, Postgraduates and Young Scientists*

(Sumy, October 20-22, 2020)

Sumy
Sumy State University
2020

THE EFFECT OF ANTITUMOR CHEMOTHERAPY ON THE HEALING OF THE FEMORAL DEFECT ACCORDING TO THE RESULTS OF COMPUTED TOMOGRAPHY

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Introduction. Patients with oncopathology have a high incidence of bone fractures. Because the treatment of cancer requires long-term administration of antitumor chemotherapy, the processes of reparative bone regeneration can occur against the background of antitumor chemotherapy.

Aim. To study of the effect of antitumor chemotherapeutics on the processes of reparative bone regeneration.

Materials and methods. White laboratory rats (52 animals) had a perforated defect in the middle third of the femoral shaft. Animals were divided into control and three experimental groups, which after injury and every 21 days of the experiment were administered antitumor chemotherapeutics: doxorubicin, 5-fluorouracil, methotrexate. On days 15, 30, 45 and 60, all animals underwent computed tomography, determined the optical density of the regenerate in units of Hounsfield (HU).

Results and discussion. In animals of the control group, the timing of reparative bone regeneration is not violated. The stage of formation of callus is preserved, the development of complications is not detected. The optical density in the area of the regenerate on the 15th day of the experiment was 646.33 ± 77.08 NU, on the 30th day- 922.33 ± 30.01 NU, on 45- 1462.00 ± 29.21 NU, on the 60th day- 2150.00 ± 126.00 NU.

In animals of all experimental groups there was a slowdown in the processes of reparative bone regeneration and increase their duration. This is confirmed by the low optical density of the regenerate and maternal bone in comparison with the control group and their slow growth during the healing of the defect.

The optical density of the regenerate when using doxorubicin on the 15th day after injury was 444.33 ± 54.00 NU, on the 30th- 841.50 ± 32.53 NU, on 45th - 1367.00 ± 25.46 NU, on the 60th - 1655.00 ± 25.46 NU.

The optical density of the regenerate when using 5-fluorouracil for 15 days was 503.50 ± 167.58 NU, on the 30th day- 756.00 ± 21.22 NU, 45th - 1327.00 ± 18.39 NU, 60th - 1550.50 ± 94.00 NU.

The optical density of the regenerate when using methotrexate on the 15th day was 398.00 ± 158.39 NU, on the 30th- 711.00 ± 142.00 NU, on the 45th- 1098.00 ± 42.43 NU, on the 60 th - 1352.00 ± 65.00 NU.

The slowing of reparative osteogenesis was most pronounced against the background of methotrexate administration.

Conclusions. Reparative bone regeneration on the background of antitumor chemotherapy is characterized by a slow process of bone callus formation and increased fracture healing time.

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