In prophylactic chemotherapy, one of the most important conditions is antibiotic concentrations distributed into the tissues. Accordingly, following experiments were done.

**Introduction**

In orthopaedic surgery, one of the most important problems is that of bone and joint injuries, above all regarding post-operative infections, especially primary closure of compound fractures. In such cases, antibiotics are one of the most important ways to prevent post-operative infections, not only in treating open injuries but in also in bone and joint surgeries such as total replacement of joints, osteotomies, arthrodesis, etc. In prophylactic chemotherapy, good penetration of antibiotic concentrations into the lesions are one of the prime conditions for optimum results, although determination of the strains, sensitivities, and resistances of the infecting bacilli are also important. In this paper, the author publishes various antibiotic concentrations distributed into the human bone marrow and the bone marrow hematoma.

**Materials and Methods:**

In this experiment, ampicillin, cephaloridine, cephalothin, cefalolin, oxytetracycline, chloramphenicol, streptomycin, kanamycin, aminodeoxy-kanamycin, and and ribostamycin were examined. For each of the ten antibiotics, twenty patients were tested; they were designated as the ampicillin group, cephaloridine group, cephalothin group, etc. The general conditions of these patients were good, their cardio-pulmonary, hepatic, and renal functions were all normal and their blood and urine examinations proved negative.
Fig. 1. Antibiotic concentrations in the blood (solid line) and in the bone marrow (broken line).