



BNCT for veterinary medicine.

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We provided clinical veterinary BNCT studies in cats and dogs with spontaneous malignant tumors on accelerator based epithermal neutron source at Budker Institute of Nuclear Physics in Novosibirsk, Russia and IRT-T research reactor at National Research Tomsk Polytechnic University in Tomsk, Russia.

These animals were selected for this method of therapy due to the impossibility of performing surgical treatment and other methods of therapy. BSH (Katchem, Czech Republic) was used as boron compound at a dose of 100 mg / kg, intravenous infusion lasting 1 hour. Before and after irradiation, blood samples were taken from the animal to study the boron concentration with an ICPE-9820 atomic emission spectrometer (Shimadzu, Japan). A preliminary calculation of the dose in the tumor and skin was carried out using the tomography data by the Monte Carlo method. In all cases, we observed partial tumor response, clinical benefit, and an increase in estimated survival time when recruited with excellent quality of life. Treatment-related toxicity was mild and reversible. These studies contribute to the preparation for clinical trials of BNCT for the treatment malignant tumors in Russia and suggest a potential role for BNCT in veterinary medicine.

Irradiation at the neutron source was supported by the Russian Science Foundation (grant № 19-72-30005).

Keywords:

veterinary medicine, bnct, malignant tumors, cats, dogs, accelerator based epithermal neutron source, research reactor, IRT-T