



Contribution ID: 260

Type: not specified

Effect of the combined use of proton radiation and AraC on morphological changes and apoptosis in the liver of rats

Monday, 6 June 2022 13:50 (10 minutes)

The idea of using cytostatic drugs to increase the effectiveness of radiation therapy is of great interest to radiobiologists. In our experiments, 12 out of a total of 16, male, Sprague Dawley rats received a 3Gy dose of protons with 170 MeV energy in the cranio-caudal direction. The AraC dose of 0.4 g/m² was administered into the tail vein. The organs belonging to 4, 6 and respectively 4 animals were harvested at 4, 24 and 48 hours after irradiation and fixed in paraffin. The paraffin embedded tissue samples were sectioned to 8µm with a Thermo Fisher Scientific HM 340E microtome. The slides were stained using the H&E method and the morphological changes were studied by a LUMO Mikmed2 microscope. A qualitative analysis of the liver parenchyma of irradiated rats showed a significant dilatation of the liver sinusoids in periportal regions in the 4 hours-3Gy group. We are currently performing a statistical analysis on the morphological changes that occurred in the hepatic cells and our preliminary findings for the 4 hours groups illustrate a statistical signification between the number of binuclear hepatocytes, 4,79±0,35 for 3Gy group and 3,41 ±0,42 for 3Gy+AraC group, as a result of Mann-Whitney test. A quantitative, comparative analysis and a TUNEL assay are ongoing. We expect to find differences (pyknosis, karyolysis, karyorrhexis) due to the long-term effect of irradiation.

Summary

Presenter: СЕВЕРЮХИН, Юрий (JINR LRB)

Session Classification: Sectional talks