

## **Bone marrow cells apoptosis in experimental anemia**

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Environmental pollution consisting of toxic metals and ionizing radiation is a serious problem throughout the world. Our objective was to compare the level of markers (BCL- 2 and p53) of the bone marrow cells apoptosis in experimental gamma- irradiation and chronic lead intoxication. Methods: guinea pigs (n = 24) were divided into two groups. The first group of animals received a single dose of 4.5 Gr of gamma irradiation extracorporeal (aplastic anemia model). The second group received a 4% lead acetate solution for 60 mg/kg body weight per day for 27 days (anemia associated with violation of the synthesis of porphyrins). The level of Bcl- 2 and p53 was determined immunohistochemically. We observed:1) In the irradiated animals the number of cells with a marker protein Bcl- 2 was reduced to 45.23 % and the number of cells with p53 marker was increased to 112.8 % compared to control animals. 2) In animals with chronic lead intoxication the number of cells with a marker protein Bcl- 2 was decreased to 16.42 % and the number of cells with p53 marker was increased to 61.37 % compared to control animals. We conclude that apoptosis of bone marrow cells increases with aplastic anemia and anemia associated with violation of the synthesis of porfirins, which is a major pathogenetic mechanism of anemia. It may be one of the factors capable of causing deficiency of stem cells in this pathology.