

Regeneration and Carcinogenesis

Alexander V. Pechersky

Department of Urology, North-West State Medical University named after I.I. Mechnikov,

Once people reach 40 years of age, they have a decrease in their pool of pluripotent stem cells, and an increased risk for development of oncological diseases. Materials and methods. The first part of the study was conducted in 11 patients aging 54 to 76 years old with cancer of the kidney, bladder, or prostate in stages III-IV of the disease. The second part of the study was conducted in four patients aged 60-82 years old, who were given from 4 to 7 transfusions of mononuclear fraction of peripheral blood from young donors 19-23 years old, with the same sex and blood types as the recipients, in order to restore cell regeneration. Results. In the first part of the study, 1 month after chemotherapy or targeted therapy, all 11 cancer patients had leukopenia accompanied by an increase in the contents of FGFb in the blood by 1.74 times on average. Four of these patients had an increase in the level of human VEGF-A of 1.25 times on average, while three patients had an increase in the level of human EGF of 1.13 times on average. In the second part of the study, 3-6 months after the completion of a cycle of 4-7 blood transfusions of mononuclear fraction of periphery blood, four patients had an in increase in the contents of

hematopoietic progenitor cells CD34+ of periphery blood by 3.25 times on average, to the level normal in young people, while the level of FGFb decreased by 1.78 times on average. Among two patients, the level of human VEGF-A decreased by 1.48 times on average, while for three patients the level of human EGF decreased by 4.12 times on average. In the buccal epithelium, all four patients had a decrease in the expression of p53 by 6.02 times on average, while three of them had a decrease in the expression of Bcl-2 by 60.0 times on average.

Conclusion

Violation of tissue renewal is a major cause of carcinogenesis in people older than 40 years old. Excessive stimulation of mitotic activity among people over 40 can be reduced to normal levels by restoring the pool of pluripotent stem cells through transfusion of mononuclear fraction of peripheral blood from young donors 18-23 years old with the same blood groups and sex as the recipient (RF patent number 2350340).

Keywords: regeneration, carcinogenesis, pluripotent stem cells, testosterone, AR, FGFb, Bcl-2, p53256