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Deformation of red blood cells in accordance with age-related changes

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The lifespan of red blood cells depends on the age-related changes of the body, and the degree of red blood cell deformity changes accordingly. This is the morphological characteristic of the greatest value: if it wasn't for the deformability, the erythrocyte would not be able to move into a capillary three times lowering diameter.

The purpose of our research was:

- To determine resistant of erythrocytes from practically healthy volunteers of different age;
- Establishing a correlation between the quality and age of red blood cell deformation.
- The study was conducted in 5 different age groups of both genders. We observed the age of red blood cells in the re-analysis, taking into account the reduction of their number as a result of apoptosis of red blood cells.
- The deformability of erythrocytes was determined with computer filter-photometer method.

The survey showed that in blood of younger volunteers to compare with deformability indicator, in peripheral blood erythrocytes of older people, has demonstrated decreased deformability. Particularly, in 17-25 age group, deformability is $4,5 \pm 0,3$, in 25-35 age group $4,8 \pm 0,4$, in older age group, this indicator is decreased $3,0 \pm 0,3$. This can be caused by changes in membrane lipid-protein composition in erythrocytes of older people.

It has also been shown that the lifespan of red blood cells increases with increasing age of the body. Therefore, a decrease in its deformation indicates that this function is difficult to perform and it is undergoing apoptosis.

Biography

Ramaz Khetsuriani, from Tbilisi State Medical University, is a Full time Professor – Head of Department of Normal Anatomy. He has 34 years of experience in the field of anatomy. He worked as an Assistant Professor, Department Head, Vice Rector of Internal Medicine and Clinical Practice fields in the Department of Normal Anatomy in Tbilisi State Medical University.

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