CONDUCTIVITY CHARACTERISTICS OF FROZEN DONOR BLOOD ERYTHROCYTES

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Transfusion of Donor erythrocytes is the main method of replacement therapy for anemia syndrome in hemablastoses. In such clinical cases, depending on the preservative used, a short shelf life, often containing erythrocyte, is poured into environments up to 42 days. However, in patients with a rare blood group, a rare blood group, in extreme or planned cases, in cases where there is no necessary erythrocyte environment, pre-prepared and frozen erythrocytes can be poured, the shelf life of which is calculated by months and years.

Developed highly effective methods of preserving cells and certain tissues at low temperatures, ensuring their long-term storage in a vital state is one of the main scientific and practical achievements of modern medicine. It is known that blood cells, primarily erythrocytes, are one of the most studied mutable objects. Structural and metabolic changes that develop during freezing are studied and studied in erythrocytes, methods for their storage at low temperatures and their application in clinical transfusiology have been developed and improved. It is possible to describe the state of cells exposed to the combined effects of low temperatures in human erythrocytes, to observe what studies have been carried out for thawing and subsequent additional treatment. The final stage of these studies is the creation of guidelines for the injection of molten erythrocytes.

Purpose of the study It consists in studying the property of erythrocytes in frozen donor blood in relation to blood plasma components.

Research material and methods

The tests were carried out in the laboratory of the Department of biochemistry of the Republican Blood Transfusion Center and Tashkent Pediatric Medical Institute. Blood from donors served as the object of our scientific research. Blood from donors was separated into erythrocyte mass and plasma by centrifugation. The Donor blood erythrosar mass was frozen for 24 hours in a special chamber with liquid nitrogen -196 os harorat. To determine the conductivity property of erythrocytes, the resulting blood is separated from the serum in the centrifuge at a speed of 2500 rpm for 5 minutes. Serum albumin, mochevina, creatinine, triglyceride, cholesterol, total protein, high density lipoprotein, low density lipoprotein levels were determined using HumaStar 100 automatic biochemical analyzer (Human, Germany). At

the next stage, 1 ml of erythrocytes are separated, the serum of the same blood in 1 ml is re-poured and mixed well, after 10 minutes it is placed for 5 minutes in a centrifuge at a speed of 2500 revolutions/minute, in the blood serum obtained, the above biochemical indicators are determined repeatedly.

Analysis of the results

When erythrocyte permeability was detected in the experiment, the albumin content fell from 44.0±1.10 g/l to 28.0±1.07 g/l after the experiment, absorbing 36.36% of the plasma albumin into erythrocytes. Cholesterol dropped from 1.74±0.06 mmol/l to 1.13±0.04 mmol/l, with a plasma difference of 0.69 mmol/l, with 35.38% of its content in erythrocytes. Glucose decreased from 22.1±0.93 mmol/l to 15.8±0.27 mmol/l, that is, 28.81% passed to the erythrocyte component. The amount of lipoproteins with high density (0.59±0.03 mmol/l) and low (0.91±0.05 mmol/l) was not detected in the serum after the experiment. And it was found that the triglyceride content is 3.3 times more (3.2±0.89 mmol/l) than the pre-experimental (0.97±0.02 mmol/l) indicator, which is due to the fact that at a low temperature, the fatty components contained in plasma are in solid form and it is difficult for them to pass through erythrocytes. The total plasma protein dropped from 60.0±1.46 mmol/l to 39.4±1.46 mmol/l and was absorbed into 20.6 g/l (34.33%) erythrocytes after the experiment. Mochevina reduced the amount of creatinine (3.70±0.11 mmol/l) to 37.84% (1.4 mmol/l) compared to the amount after the experiment (2.3±0.10 mmol/l), while the amount of creatinine was from 151.0±2.73 mmol/l before the experiment, after the experiment it was 112.2±2.74 mmol/l, which indicates that 25.70% of it was absorbed into erythrocytes. It should be noted that it was observed that the differences in all cases are significant when the indicators before and after the translator are compared with each other.

Conclusion:

Given the permeability capacity of erythrocytes in frozen donor blood, they can be used in medical practice.

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