

STUDY OF GENETIC FEATURES OF BLOOD GROUPS HEREDITY ACCORDING TO THE AB0 SYSTEM AND RHESUS FACTOR

Valeriya Chornogorets

National Aviation University, Kyiv

Scientific adviser – Glushko Ju.M., Cand. Sc.(Agriculture)

The work is devoted to the problem of blood transfusion (namely, the study of the most common blood group and rhesus factor in countries), because this issue has become acute around the world.

Today, blood transfusions are an acute social problem. Two classifications of human blood groups are of the greatest importance for clinical practice: the AB0 system and the rhesus system, due to the fact that these systems have the greatest antigenic power. Each human-to-human blood transfusion must take into account the compatibility of these two systems, because in the case of a human transfusion of another (incompatible) blood group, agglutination (gluing) and hemolysis (destruction) of erythrocytes occur, which can lead to death. It is also desirable to separate plasma and blood cells.

The aim of my work was to study the genetic features of blood group heredity according to the AB0 system, to study the rhesus factor and to identify the most common blood group in different countries. To do this, I set myself the following task: investigate the theoretical aspects of the concept of blood groups and rhesus factor and investigate the imitation of blood group characteristics, rhesus factor and identify the most common blood group and rhesus factor.

An important aspect of genetic medicine is blood transfusion. It is desirable to follow the rules of transfusion of blood groups of the same name, and not the rules of "universal donor and universal recipient". Also, an important part is the rhesus factor, which must be taken into account when transfusing blood. Today, donation has become a social problem that reflects the relationship between people and, consequently, affects the interests of our society.

The revolution in this field of knowledge was carried out by the Austrian physician Karl Landsteiner, who in 1900 staged an unusual experiment, discovered and studied antigens [1]. The blood system is the totality of all alleles of one locus that determine the diversity of blood groups within a given system. [2]. In 1940, K. Landsteiner and A. Wiener discovered the antigen contained in human blood and rhesus macaques - rhesus factor (Rh). In the simplest case, rhesus positivity (Rh +) dominates over rhesus negativity (Rh-) [3]. Rhesus factor is an important factor in the development of hemolytic jaundice in infants and rhesus conflict between mother and fetus due to the fact that the mother's immune system begins to produce antibodies against its own child

(when rhesus-positive fetal red blood cells enter the blood of rhesus negative mother). When transfusing rhesus-positive erythrocytes to rhesus-negative individuals or vice versa, hemolytic-type immune reactions occur due to agglutination (gluing) and hemolysis (destruction) of erythrocytes. More than 90% of blood transfusion complications are associated with Rh0 (D) antigen incompatibility between donor and recipient [5].

According to statistics, the most common is the first blood group (0): it includes 33.5% of the world's population. The least common is the fourth blood group (AB) - 5% of the population.

The most common blood group among Ukrainians is the second group (A) - 40%. Next are the first group (0) - 37%, the third (B) - 17%, the fourth (AB) - 6%.

In the Central European population according to the ABO system, about 43% of people have the first GC, 42% - the second, 11% - the third and about 4% - the fourth. G.K. according to the ABO system are distinguished by the presence of antigens (agglutinogens) on erythrocytes and antibodies (agglutinins) in the serum [4].

Among Europeans, the frequency of rhesus-positive people reaches 85%, rhesus-negative - 15%. The Mongoloid race has about 1% of Rhesus-negative individuals [3].

Thus, in my work I investigated that the most common blood group is the first, and the most common rhesus is positive. It is necessary to transfuse blood groups of the same name and the same rhesus factors in order to avoid health problems.

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