



UNIVERSAL INSIGHTS CONFERENCE ON SCIENCE AND SOCIETY

international scientific conference

THE IMPORTANCE OF THE CARDIOVASCULAR SYSTEM IN INFANTS

Siyob Public health college

after named Abu Ali ibn Sina, head teacher

Ganiyeva Nigina Abdukarimovna

Abstract: *After the birth of the baby, a major change occurs in the vascular system: the placental circulation suddenly switches to the pulmonary circulation. The lungs, pulmonary artery and veins begin to function. After birth, the umbilical vessels that were tied are released: the umbilical vein trunk changes to the hepatic circular bundle, the umbilical arteries to the right and left lateral umbilical bundles, and the arterial fissure is preserved in its initial parts. These umbilical bundles are located on the posterior surface of the anterior abdominal wall. The venous duct is connected to the venous bundle, and the arterial duct, which connects the fetal pulmonary trunk with the curved part of the aortic arch, becomes the arterial bundle. It connects the pulmonary trunk (or left pulmonary artery) with the aortic arch.*

Keywords: *artery, vein, pulse, aorta, ventricles of the heart, chambers of the heart, heart border.*

The child's circulatory system is very flexible and adapts to a rapidly growing organism; the cardiovascular system changes during development between simple circulation (blood from the heart to the lungs, from the lungs to the heart) and complex circulation (blood from the heart to all body organs, then to the heart); at birth, the pulmonary circulation does not function, but is taken over by the placenta; after birth, the pulmonary circulation opens and later a centralized circulation is formed, which is important for the growth,

UNIVERSAL INSIGHTS CONFERENCE ON SCIENCE AND SOCIETY

international scientific conference

development and energy supply of the child. In infants, the heart is relatively large and accounts for 0.8% of the body weight (about 22 g), in adults - 0.4%. The right and left ventricles are equal, their walls are 5 mm thick. With increasing age, the weight of the heart increases: at 8 months, the heart doubles in weight, at 3 years it triples, and at 6 years it increases 11 times. The left heart contracts intensively under great stress, by the age of 14 the wall thickness of the left ventricle reaches 10 mm (in the brain - 6 mm). Both chambers are large in size, their wall thickness is 2 mm. At the same time, tissue differentiation occurs. The myocardium of the baby consists of very thin muscle tissue, the connective tissue is weakly developed, consists of transverse fibrils and transverse striations. The nuclei are numerous, but small, poorly differentiated, small arteries are well developed and provide good blood supply to the heart muscle. The main vessels are relatively large. Up to 10-12 years of age, the pulmonary artery in boys is wider than the aorta, then its lumen becomes the same. After sexual formation, their relationship is restored. In young children, the ratio of the diameter of the arteries and veins of the large circulatory system is close to each other (1:1), in older children this ratio is 1:3, and in adults it is 1:5. The capillary system in children, compared to adults and in absolute terms, makes it difficult to maintain temperature homeostasis.

In healthy children, there should be no difference between the number of heartbeats and the number of pulses. The localization of the cardiac apex impulse is not constant and depends on the age of the child, the degree of completeness of the abdominal organs.

Rules for percussion determination of the boundaries of the heart in children.

- Percussion is performed in a calm state.
- The plessimeter-finger is placed parallel to the boundary being searched.

UNIVERSAL INSIGHTS CONFERENCE ON SCIENCE AND SOCIETY

international scientific conference

- The step of the plessimeter-finger should not be large, it should not exceed the width of the finger.
- The direction of percussion should be anterior to posterior.
- 5. The boundary being searched for begins with the outer edge of the plessimeter

In children, at the age of 2.5-3 years, like in adults, the II tone is better heard between the II and the costal arches, and by the age of 8-12, the P tone is better heard over the pulmonary artery than over the aorta. In healthy children, sometimes at the beginning of diastole, during the passage of blood, as a result of rapid contraction of the ventricular wall, the Ilf tone is heard. It is heard after the II tone at the apex of the heart or slightly inside it. and at the V-point. In healthy children, sometimes the II-tone is heard twice as a result of the flapping of the aortic and pulmonary artery valves at different times, in addition to additional tones, functional murmurs are heard in healthy children at all stages of childhood. Functional murmurs occupy a limited area, are better heard in the supine position at the V-point, under the apex, in the jugular veins, their intensity decreases in the vertical position or after physical exertion. Functional murmur is not constant, is not transmitted to extracardiac areas.

The pulse in children changes sharply when moving from a vertical to a horizontal position, after physical exertion, after crying, after eating, when the environment and body temperature increase. Therefore, the optimal time for determining the pulse rate in children is considered to be during sleep, when the pulse rate decreases to 20, its rhythm is observed. Blood pressure in children is lower than in adults, the reason for this is the width of blood vessels in children, higher vascular elasticity, lower peripheral resistance in the vessels. Blood pressure in a newborn is 70-64 mm Hg., at 1 year old it is 80-85 mm Hg. The minimum blood pressure in children is $\frac{2}{3}$ or $\frac{1}{2}$ of the maximum blood pressure, in infants it is 35-50 mm Hg., at 1 year old it is 40-55 mm Hg. The

UNIVERSAL INSIGHTS CONFERENCE ON SCIENCE AND SOCIETY

international scientific conference

increase in blood pressure is observed up to 2 years of age, then slows down. It increases again during puberty.

REFERENCES:

1. T.A.DAMINOV, B.T.KHALMATOVA U.R.BOBOEYEVA CHILDREN'S DISEASES Tashkent – 2012
2. Shabalov N.P.Detskie bolezni. Saint Petersburg, Moscow Kharkov. Minsk 2000
3. <https://unilibrary.uz/literature>