



## Study of Morphological Liver Conditions of the Offspring Born Under the Conditions of Chronic Toxic Hepatitis In the Mother

**Tajieva Zebo Bakhodirovna**

*Phd . Senior Lecturer at the Department of Pediatrics and Higher Nursing, Urgench branch of the Tashkent Medical Academy. Urgench, Uzbekistan.*

**Yuldosheva Laylo Odilbek kizi**

*is a student of the 521-A group of the pediatric faculty, Urgench branch of the Tashkent Medical Academy. Urgench, Uzbekistan.*

**ABSTRACT:** Experiments have shown that toxic hepatitis in the mother will negatively affect postnatal growth, development and formation and the morphofunctional state of the vascular tissue structures of the liver of the offspring, causing pathomorphological changes in the vascular tissue structures, contributing to the lag, delay in the development and formation processes. All this necessitates the development of evidence-based therapeutic and preventive measures in order to prevent pathology in offspring born and fed by mothers with liver pathology.

**Key words:** chronic toxic hepatitis, mother-offspring, liver, blood vessels, tissues and relevance .

The problem of preserving maternal health and offspring to this day remains the leading one in the policy of our state. The problem of the impact of various adverse factors on offspring carries not only medical, but also great social significance. This is due to the fact that in recent decades a demographic crisis has been observed all over the world - the birth rate is declining and, despite the development of technologies in medicine, there is a high mortality of newborns. This problem can also be attributed to the fact that the number of women of childbearing age with various extragenital diseases has increased, among which a special place is occupied by diseases of the hepatobiliary system, including chronic hepatitis, which is one of the important causes of maternal and perinatal pathology. Scientists are also sounding the alarm about the effect of many drugs, adverse environmental factors, stress, viral and infectious diseases that have embryotoxic ,fetotoxic and teratogenic effects, depending on the periods of embryo formation and how long they affect [1, 4, 5,7, 10, 12].

**The aim of the study** was to study the effect of chronic toxic hepatitis in the mother on postnatal liver morphogenesis in the offspring of experimental animals.



**Materials and methods of research:** Experiments were carried out on outbred Wistar rats. Animals were divided into 2 groups of 30 animals each: group 1 (control) - intact animals, group 2 - rats, which were injected weekly for 6 weeks with helioirin at the rate of 0, 5 mg / 100 g of mass. 10 days after the last injection, males were added to them and to the females of the control group. Rats born and fed by mothers with chronic toxic hepatitis on the 3rd, 7th, 21st and 30th days of postnatal development were decapitated and pieces from the liver tissue were taken for histological examination. The material was subjected to general morphological, morphometric and electron microscopic studies. In order to study the intraorganic vessels of the liver, a solution of black ink was administered intracardiac according to the original method of M.A. Kolesov through the left ventricle of the heart. Vessels were clarified according to the method of A.G. Malygin.

**Results.** On the 3-7th day of life of postnatal development of rat pups born and fed by mothers with chronic toxic hepatitis in the vascular tissue structures of the liver, the following picture was observed: in the microstructure of the liver in newborn rat pups (3-7 days), hepatocytes were located loosely and randomly, divided by wide and full-blooded sinusoids hemocapillaries. In some hepatocytes, the phenomena of hydropic dystrophy were noted, in some cells pycnosis and lysis of the nuclei were observed. Morphometric studies showed that the size of hepatocytes increased ( $18.5 \pm 0.8$ ), compared with the indicators of the control group of animals (in control  $12.0 \pm 0.4$ ). The number of binuclear liver cells is relatively higher,  $2.7 \pm 0.3$  (in control  $1.2 \pm 0.04$ ). Hepatic lobules and beams are poorly controlled. In an electron microscopic examination, the cytoplasm of the liver cells was soft-granular, the nuclei of many hepatocytes had an oval shape. Mitochondria in large numbers, with an electron-dense matrix. In some places in the interlobular connective tissue, infiltration and expansion of the sinusoidal hemocapillaries.

After 21 days of postnatal development in animals of the experimental group, there was some increase in the severity of the pathomorphological changes described above. In places, against the background of a distinct beam-lobular structure of the liver, places with discompletion of the liver parenchyma were detected, liver cells were located randomly. Infiltration was observed in the interlobular connective tissue mononuclear cells. Electron microscopically, the nuclei of hepatocytes are round, often oval, with two or three nucleoli located closer to the nuclear membrane. Kupffer cells are rare. The endoplasmic reticulum is often represented by vacuoles, vesicles of various sizes. The space of disses is slightly expanded in places. In some centers of the lobules, there is a decrease in the number of hepatocytes, there is a slight increase in granulomas and small cell nodules adjacent to the portal tracts. The venous vessels of the liver are dilated in places, full-blooded. In animals of the control group, a distinct beam-lobular structure of the liver is noted during this period. In the study of animals in more distant periods of postnatal development (on the 30th day), the experimental group of animals showed significant individual fluctuations in the severity of pathomorphological changes in the liver and the nature of age dynamics. While in some rat pups these pathomorphological changes gradually subsided somewhat with age, in other animals they still persisted, as well as some swelling of the portal tracts. In some places there were hepatocytes with destructive dystrophic changes in the nucleus and cytoplasm of the liver; the parenchyma was divided by thin layers. The interlobular connective tissue forms the stroma, in which the vessels and bile ducts are located, the balm and lobular structure is preserved. Vessels with moderate blood supply. Parenchymal cells are 70% mononuclear, and 30% have 2 nuclei.

The liver of rat pups at 30 days of postnatal life. Electron microscopically stellate reticulum-endotheliocytes were enlarged and in large numbers. In animals of the control group, during this period, the microstructure of the liver acquired a typical lobed structure. Portal tracts represented by loose fibrous connective tissue were clearly identified. The vascular pattern of the liver also corresponded to the pattern in intact adult rats.



**Discussion of the obtained results** . The results obtained show that extragenital pathology of the mother has a negative impact on the postnatal development of the offspring organism. Among the numerous varieties of extragenital diseases of the mother, a special place, due to its prevalence, is occupied by liver pathology (3,6, 13). It is known that children born to mothers with chronic liver pathology are predisposed to various diseases, including infectious ones, which implies a decrease in nonspecific resistance (2,8,9, 11, 14) of the offspring organism. The results of our studies once again prove that the pathology of the mother's liver leads to pathomorphological changes in a similar organ of the offspring both in the antenatal and postnatal periods of development and growth. These processes subsequently cause a delay and lag in the processes of postnatal development and formation, as evidenced by the morphological and morphometric parameters of the vascular tissue structures of the liver of the offspring. Analyzing the above processes, we came to the conclusion that these processes are based on a violation of normal relationships in the mother -fetus-offspring system in the intrauterine and postnatal periods of development. Firstly, compensatory-adaptive processes in the body of the developing fetus begin early, aimed at its existence and development in response to the pathology of the mother's liver, and secondly, the organ of the fetus must replace the function of the affected mother's liver. Thirdly, the violation of the antitoxic function of the mother's liver is of great importance here. Along with these, in the antenatal period of development, other unfavorable factors affect the fetal body, such as a violation of the placental barrier, the accumulation and negative impact of perverted metabolic products arising from a violation of the detoxification function of the mother's liver, a deficiency in energy and plastic materials, etc. All the above factors that occur in chronic toxic lesions of the mother's liver lead to the development of pathomorphological changes in the vascular tissue structures of the offspring liver during periods of postnatal growth and development. Subsequently, these processes contribute to the delay in the processes of postnatal development and the formation of an organ and organ system, offspring as a whole, compared with the offspring of those born and fed by healthy mothers.

**Conclusions:** 1. Chronic toxic damage to the mother's liver negatively affects the processes of postnatal growth, development and formation of tissue structures of the offspring liver.

2. Pathological changes in the vascular tissue structures of the liver of the offspring, subsequently lead to a delay in the processes of postnatal development and the formation of the liver and the organ system of the offspring as a whole.

3. From mothers with chronic pathology, offspring are born with a disturbed "health start", all this indicates the need to develop evidence-based therapeutic and preventive measures in order to prevent pathology in children born to mothers with chronic liver pathology.

#### **Literature :**

1. Averyanov, S.V. Chuikin , L.A. Musina SV Morphological changes in the liver of rats under the influence of ecotoxicants in the antenatal period of development. (Ufa)// Morphological statements .-2008.-№1.-S.203-205
2. Bryukhin G.V., Sizonenko M.L. The role of experimental damage to the mother's liver in the development of physiological immaturity of the offspring // Bull . experiment . biol. and honey. - 2012. - T. 154, No. 11. - S. 544-547.
3. Bezrodnova S. M., Bondarenko G. M., Khorev O. Yu. Series: Medicine. Pharmacy.-2014.-
4. Vakhnin V.A., Laskov D.S. Evaluation of morphological and biological indicators of development in the offspring of female rats with damage to the hepatobiliary system of various etiologies // Priority scientific directions: from theory to practice.-2016.-P.8-13



5. Duduk , N.I. Structural and histochemical changes in the liver of 45-day-old offspring of rats with experimental cholestasis / N.I. Duduk , S.M. Zimatkin // *News of Medical and Biological Sciences* . 53.
6. Duduk , N.I. Correction of morphofunctional changes in the liver of the offspring of rats with experimental cholestasis / N.I.Duduk , R.I.Kravchuk , S.I.Zimatkin *Belarus . Seriya medical navuk .* –2014. - No. 3.– S. 78-83
7. Ilinykh M.A., Bryukhin G.V. Structural and functional formation of the pancreas in the offspring of animals with chronic experimental lesions of the hepatobiliary system of various origins. *Bulletin of the Chelyabinsk state. Pedagogical University.* 2006; 4(6):113-123.
8. Matsyuk , Ya.R. Cholestasis of pregnant women and offspring organogenesis (experimental study) / Ya.R. Matsyuki et al. // *Actual problems of medicine. In 2 parts: materials of the annual final scientific and practical conference (January 22, 2013).* - Grodno, GrGMU -2013.-Ch. I. - S. 61-64.
9. Medved V.I. , Hrytsay I.N. Liver dysfunction in pregnant women: impact on the course of pregnancy, the condition of the fetus and the outcome of childbirth // *Health of Ukraine.*-2015 - Spec. Issue . –p.24-27
10. Sadovnikova V.V., Sadovnikova I.V., Ivanova N.L. Morphological changes in the liver of rats with toxic drug-induced hepatitis and stimulation of reparative processes // *Morphology.*– 2001.–T. 120, No. 6. - S. 63-65.
11. Sizonenko M.L., Bryukhin G.V. Formation of the generative function of the testes of the offspring of female rats with chronic liver damage // *Problems of reproduction.* - 2009. - No. 1. - P. 16-19.
1. 12 Ceccanti M., Attili A., Balducci G., et al. Acute alcoholic hepatitis // *J. Clin . Gastroenterol .* - 2006. - Vol. 40, No. 9. - P. 833-841.
12. Watson AJ Duckworth CA, Guan Y. and Montrose MH Mechanisms of epithelial cell shedding in the Mammalian intestine and maintenance of barrier function. *Ann. NY Acad. Sc.*, 2009, v. 1165, p. 135-142.
13. Yue Wf, Zhou F., Malik FA et al Demonstration of protein absorption in the intestinal epithelium of fish and mice by laser scanning confocal microscopy. *Biol. Chem.*, 2010, v. 391,

