

UDK:616.359:615.276:577.95.-092

MORPHOLOGICAL AND MORPHOMETRIC PARAMETERS OF THE LIVER OF WHITE NONBORED RATS IN NORMAL

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ABSTRACT

One of the most important organs for humans is the hepatic gland, and among the factors that can negatively affect it, there are metabolic, toxic, microbiological, circulatory disorders and neoplastic factors. The study of the pathology of this important organ and its therapy requires extensive research in laboratory and farm animals, as it provides a convenient, safe and economical environment for assessing the effects of drugs on human and animal diseases, rather than experimentally in the laboratory.

For this, the normal parameters of the liver tissue of white outbred rats were studied. The aim of the study is to supplement data on morphological and morphometric parameters of liver tissue.

Keywords: morphology, morphometry, histology, hepatocyte.

ОҚ ЗОТСИЗ КАЛАМУШЛАР ЖИГАРИНИНГ МЕЪЁРДАГИ МОРФОЛОГИК ВА МОРФОМЕТРИК ПАРАМЕТРЛАРИ

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АННОТАЦИЯ

Инсон учун муҳим бўлган аъзолардан бири бу – жигар беzi бўлиб, унга зарарли таъсир кўрсатадиган омиллардан метаболик, токсик, микробиологик, қон айланиши бузилиши ва неопластик факторларни санаб ўтиши мумкин. Ушбу муҳим органнинг патологияси ва унинг терапияси масалаларини ўрганишда лаборатория ва қишлоқ хўжалик ҳайвонларида кенг қамровли тадқиқотлар ўтказишни тақозо этади, чунки бу лаборатория шароитида экспериментдан кўра кўпроқ инсон ва ҳайвон касалликларида препарат воситаларининг таъсирини баҳолашда қулай, хавфсиз ва камиқтисод бўладиган шароитни яратиб беради.

Шу мақсадда оқ зотсиз каламушларнинг жигар тўқимасининг нормал параметрлари ўрганиб чиқилди. Ишдан мақсад жигар тўқимасидаги

морфологик ва морфометрик параметрлар бўйича маълумотларни тўлдириши ҳисобланди.

***Калим сўзлар:** морфология, морфометрия, гистология, гепатоцит.*

МОРФОЛОГИЧЕСКИЕ И МОРФОМЕТРИЧЕСКИЕ ПАРАМЕТРЫ ПЕЧЕНИ БЕЛЫХ БЕСПОРОДНЫХ КРЫС В НОРМЕ

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АННОТАЦИЯ

Одним из наиболее важных органов для человека является печеночная железа, и среди факторов, которые могут отрицательно повлиять на нее, есть метаболические, токсические, микробиологические, нарушения кровообращения и неопластические факторы. Изучение патологии этого важного органа и его терапии требует обширных исследований на лабораторных и сельскохозяйственных животных, поскольку это обеспечивает удобную, безопасную и экономичную среду для оценки воздействия лекарств на болезни человека и животных, а не экспериментально в лаборатории.

Для этого изучали нормальные параметры ткани печени белых беспородных крыс. Цель исследования - дополнить данные о морфологических и морфометрических показателях ткани печени.

***Ключевые слова:** морфология, морфометрия, гистология, гепатоцит.*

INTRODUCTION

Currently, a descriptive approach to the study of pathological processes in the liver is insufficient. For an accurate and objective assessment of changes in organs and tissues, microscopic, in particular morphometric, research methods and statistical analysis of the data obtained should be widely used, which not only increases the accuracy of assessing the nature and description of the phenomena under study, but also objectifies the morphological diagnosis.

Histological methods for analyzing the morphofunctional status of the liver are widely used in the diagnosis and differential diagnosis of liver diseases of various etiologies. However, their results do not always reflect the violation of the entire structure, which together increases the interest of researchers in the search for new ways to assess liver pathology, which may be associated with a microscopic assessment of changes in the pathomorphological structures of the liver, in the case of

polypharmacy. Therefore, macroscopic and microscopic studies of the liver of white outbred rats were carried out from the point of view of the possibility of studying and comparing normal data of liver tissue with pathological processes.

MATERIALS AND METHODS

For macroscopic and microscopic examinations of liver tissue, 42 histopathological examinations were performed. For general morphology, 2 pieces were cut from each liver, that is, a large piece and a piece 1.5 x 1.5 cm from the middle, and solidified in 10% neutralized formalin. After washing for 2-4 hours in running water, it was dehydrated in increased concentrations of alcohols and xylene, then it was embedded in paraffin and blocks were prepared. Cuts 5–8 μm in size were made from paraffin blocks and stained with hematoxylin and eosin.

RESULTS AND CONCLUSIONS

The weight of rats in the control group ranged from 130 g to 140 g, on average - 135 g, the average mass coefficient from 6.68 g to 0.20 g.

The liver is covered from the outside with a capsule of connective tissue, which enters the liver parenchyma and forms a lobate and fragmented structure. Only in the area of the portal tracts is a fragmentary view clearly distinguished. In rats, as in humans, fibrosis is not separated by fibrous layers. Segment boundaries are conventional lines between portal paths. Liver cells and hepatocytes are arranged in relatively regular rows within the fragments and form two rows of radial liver plates.

The transverse size of hepatocytes (the distance from the center of the nucleus of one hepatocyte to the center of the proximal nucleus of another hepatocyte) ranges from 21.0 to 28.0 microns, on average - from 25.1 to 0.45 microns. They are polygonal with clear boundaries. The cytoplasm is amphophilic, donor. In the perinuclear zone and on the side of the sinusoidal polyp, against the background of a relatively pale cytoplasm, there is a fine-grained basophilic substance corresponding to the granular endoplasmic reticulum.

The average cross-sectional area of the cytoplasm of hepatocytes ranges from 403.0 mm^2 to 731.0 mm^2 , the average - from 594.5 to 21.6 mm^2 . Hepatocyte nuclei are centrally located, contain one or two well-separated nucleoli, vary in size and shape, and are often rounded. Nuclei are usually located in the center of liver cells, but can be grafted around them. Most hepatocytes are mononuclear, like binuclear hepatocytes. The periportal hepatocytes are somewhat smaller, the nuclei are hyperchromic, and the cytoplasm is more basophilic.

The number of binuclear hepatocytes per 100 hepatocytes ranged from 10 to 18, an average of 0.72 compared with 14.2 hepatocytes. The cross-sectional area of hepatocyte nuclei in the control group of rats ranged from 102.0 mm² to 143.0 mm², on average - up to 119.4%, up to 2.58 mm².

In the center of the liver segments are the central vessels, which are the primary connections of the hepatic vessels. The diameter of the central veins ranges from 48.0 to 76.0 microns, on average from 60.55 to 1.74 microns. The portraits are located around arteries, veins and pathways.

The diameter of the interstitial veins ranges from 22.0 to 36.0 microns, on average from 30.1 to 30.870 microns.

These vessels produce very small branches in diameter, resulting in venules passing through, which divide into a network of sinusoidal capillaries that form a labyrinthine small vascular bundle of the liver segment. Interstitial arteries supply most of their branches with blood supply to the bile ducts, participate in the formation of peribiliary bundles, the density of which increases with an increase in the diameter of the bile ducts.

The diameter of the interstitial arteries ranges from 9.9 to 16.3 microns, on average from 14.2 to 0.40 microns. The diameter of the interstitial arteries (more than 2 times) is less than the diameter of the interstitial arteries. They are located between the lobes.

Sinusoidal capillaries are directed mainly in the radial direction towards the centers of the segments, where they flow into the central vessels. These hemocapillaries range in size from 9.0 to 13.0 microns in cross-section, with an average of 11 microns to 0.26 microns. One side of the hepatocyte faces the sinusoid (towards the sinusoid), and the other side faces the adjacent hepatocyte formed by the bile

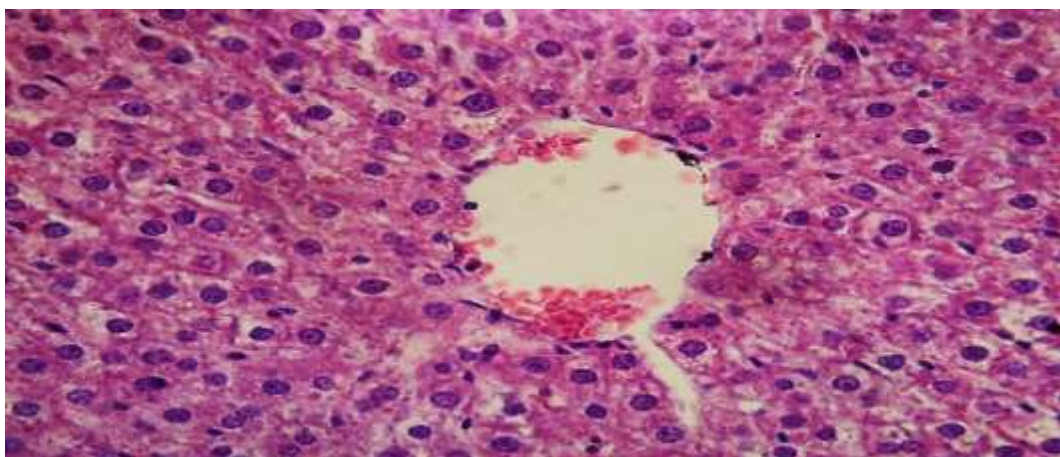


Figure 1. Central vein of a piece of liver of a white carefree rat. Micropreparation. The dye is hematoxillin-eosin.

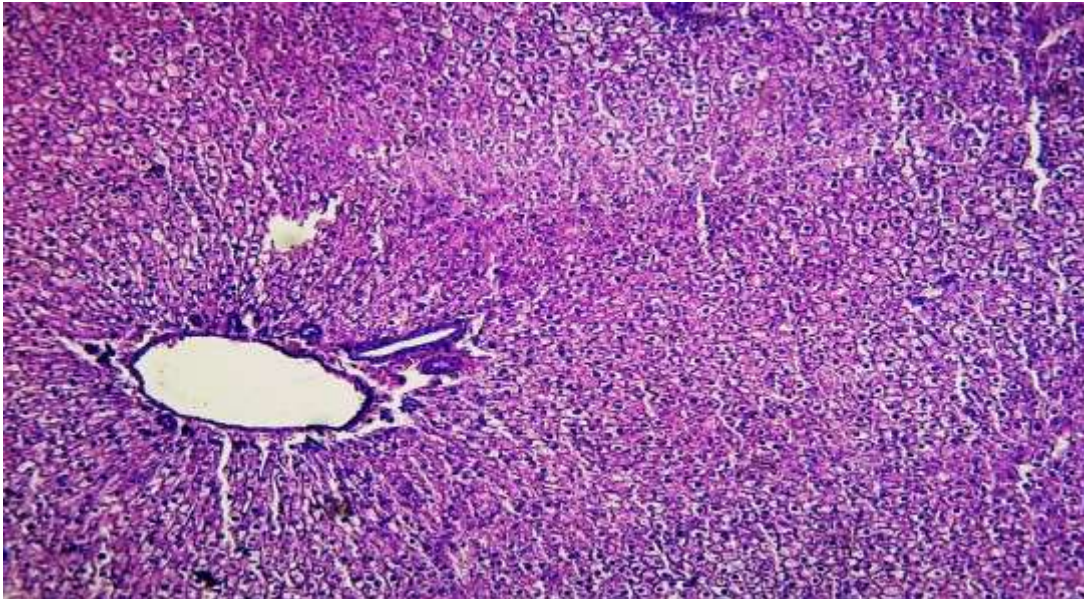


Figure 2. View of the central vein and liver triad. Dye -hematoxillin-eosin.

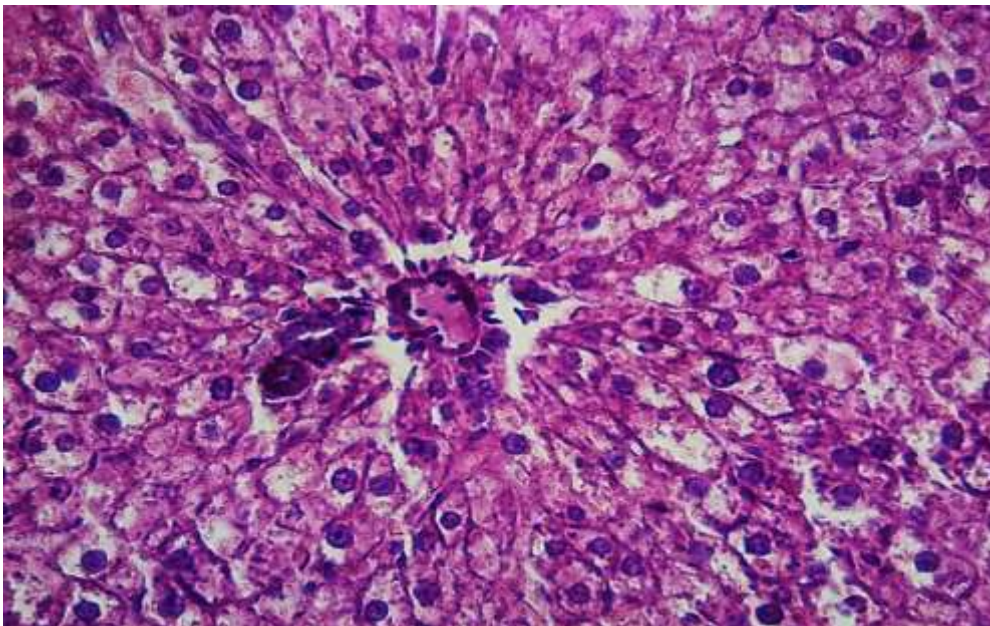


Figure 3. Structure of sinusoidal hemocapillaries. Interdepartmental placement. The dye is hematoxillin-eosin.

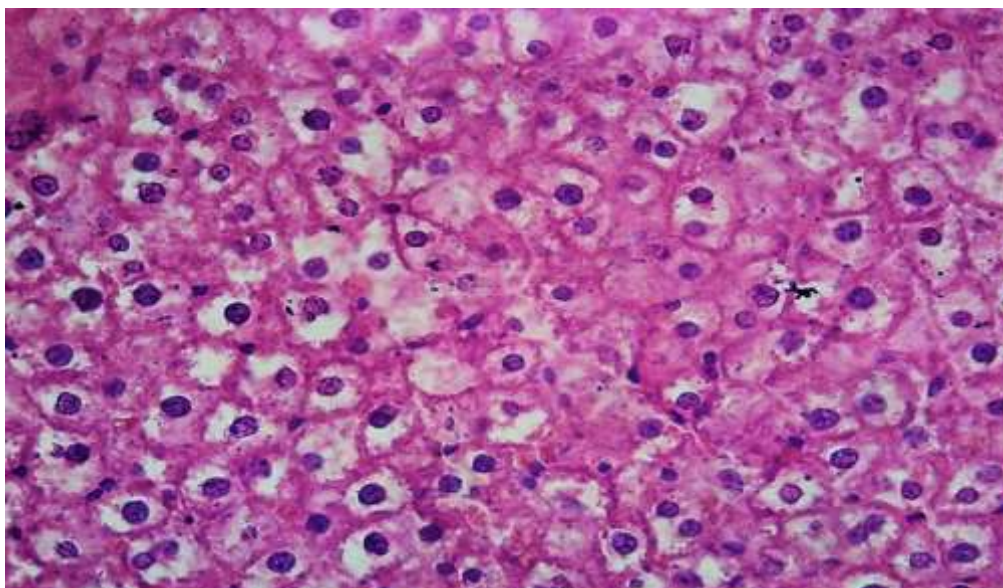


Figure 4. The set of hepatocytes that make up the liver parenchyma. The dye is hematoxylin-eosin.

REFERENCES

1. Sanoev B. A., Israilov R. I. and Djuraeva G. B. QUANTITATIVE INDICATORS AND METHODS FOR MODELING [STRUCTURAL UNITS IN PLACENTAL INSUFFICIENCY](#). World Journal of Pharmaceutical Research. 9 (12), 37-47
2. Sanoev B.A. MORPHOLOGICAL AND MORPHOMETRIC CHARACTERISTICS OF THE PLACENTA IN NORMAL PREGNANCY. SCIENTIFIC COMMUNITY: INTERDISCIPLINARY RESEARCH, 492-498
3. Саноев Бахтиёр Абдурасулович. МОРФОЛОГИЧЕСКИЕ И МОРФОМЕТРИЧЕСКИЕ ХАРАКТЕРИСТИКИ ПЛАЦЕНТЫ ПРИ НОРМАЛЬНОЙ БЕРЕМЕННОСТИ. « *DEVELOPMENT OF A MODERN EDUCATION SYSTEM AND CREATIVE IDEAS FOR IT, REPUBLICAN SCIENTIFIC-PRACTICAL ONLINE CONFERENCE ON "SUGGESTIONS AND SOLUTIONS*»6, 94-96
4. Б.А. Саноев, Г.Ш. Ниёзова, Н.И. Хикматова. Макро – и микроскопические проявления лейомиом матки. Новый день в медицине, 526-528
5. Гусейнов Т. С., Гусейнова С. Т. Анатомия лимфатического русла тонкой кишки при дегидратации // Медицинские науки. Теоретическая медицина. № 1 (33), 2011.

6. Гусейнов Т.С., Гусейнова С.Т. Дискуссионные вопросы анатомии пейеровых бляшек тонкой кишки//Саратовский научно-медицинский журнал. - 2012. -Т. 8. № 3. - С. 687-691.
7. Гусейнов Т.С., Гусейнова С.Т., Безверхняя Л.Д. Депривация воды и морфометрическое проявление иммунных факторов // БМИК. 2016. №12.
8. SanoyevBakhtiyorAbdurasulovich, Olimova Aziza Zokirovna. Pathology of Precancerous Conditions of the Ovaries in Women of Reproductive Age. Volume: 01 Issue: 06 | 2021.
9. Тураев, У. Р., Тураева, Г. Р., & Олимова, А. З. (2015). Особенности микрогемоциркуляции крови в почках при экспериментальной острой кишечной непроходимости. *Наука молодых–Eruditio Juvenium*, (3).
10. Тураев, У. Р., Хожиев, Д. Я., Тураева, Г. Р., Олимова, А. З., & Суюнова, М. Х. ЭКСПЕРИМЕНТАЛЬНАЯ ОСТРАЯ КИШЕЧНАЯ НЕПРОХОДИМОСТЬ: ИЗМЕНЕНИЯ В МИКРОЦИРКУЛЯЦИИ ПОЧЕК. *Памяти петра петровича хоменка доцента кафедры анатомии человека с курсом оперативной хирургии и топографической анатомии ГомГМУ*, 99.
11. О. А. Zokirovna, (2021, July). COMPARATIVE CHARACTERISTICS OF THE MORPHOLOGICAL PARAMETERS OF THE LIVER AT DIFFERENT PERIODS OF TRAUMATIC BRAIN INJURY. In *Euro-Asia Conferences* (pp. 139-142).
12. Абдуллаева, М. А., Содыков, И. Ш., Шодыева, Ш. Ш., & Олимова, А. З. (2013). ФАКТОРЫ РИСКА ОСТРОГО ИНФАРКТА МИОКАРДА У БОЛЬНЫХ МОЛОДОГО И СРЕДНЕГО ВОЗРАСТА. *БИОЛОГИЯ ВА ТИББИЁТ МУАММОЛАРИ*, (4.1), 3.
13. Olimova Aziza Zokirovna. Частота Встречаемости Миомы Матки У Женщин В Репродуктивном Возрасте. *JOURNAL OF ADVANCED RESEARCH AND STABILITY (JARS)*. Volume: 01 Issue: 06 | 2021. 551-556 p
14. Olimova Aziza Zokirovna, SanoyevBakhtiyorAbdurasulovich. OVARIAN DISEASES IN AGE OF REPRODUCTIVE WOMEN: DERMOID CYST. Volume: 01 Issue: 06 | 2021. 154-161 p
15. Olimova Aziza Zokirovna.РЕПРОДУКТИВ ЁШДАГИ ЭРКАКЛАРДА БЕПУШТЛИК САБАБЛАРИ: БУХОРО ТУМАНИ ЭПИДЕМИОЛОГИЯСИ. *SCIENTIFIC PROGRESS*. 2021 й 499-502p
16. Olimova Aziza Zokirovna .MACRO- AND MICROSCOPIC STRUCTURE OF THE LIVER OF THREE MONTHLY WHITE RATS. *ACADEMIC RESEARCH IN EDUCATIONAL SCIENCES /2021 й. 309-312 p*