AJPMHS
GLOBAL RESEARCH NETWORK

AMERICAN Journal of Pediatric Medicine and Health Sciences
Volume 02, Issue 04, 2024 ISSN (E): 2993-2149

COMPARISON OF MORPHOLOGY AND MORPHOMETRIC INDICATORS OF LIVER TISSUE IN NON-WHITE RATS UNDER THE INFLUENCE OF 3 DIFFERENT TYPES OF OF ANTI-INFLAMMATORY DRUGS IN NORMAL AND POLYPHARMACY

Ortik Ismoilovich Ismailov

Department of Anatomy, Samarkand State Medical University. associate professor

Usanov Sanzhar Sadinovich

Samarkand State Medical University, Department of Anatomy, PhD, senior associate professor

Abduraimov Zafarjon Abduraimovich

Assistant, Department of Anatomy, Samarkand State Medical University

Abstract. In order to improve the effectiveness of treatment, the desire to help the patient get rid of all the diseases that have developed in him inevitably leads to the appointment of many drugs - drugs (medicines) - which, in turn, leads to polypharmacy in the patient. Polypharmacy is a serious problem of the healthcare system, which is clinically manifested by a decrease in the effectiveness of pharmacotherapy and the development of unwanted adverse reactions, as well as a significant increase in healthcare costs. The term "polypragmasia" is often used in the medical literature, but there is no generally accepted definition. For this purpose, the parameters of comparing the morphometric indicators of the liver of white rats in normal condition and under the influence of anti-inflammatory drugs in polypharmacy were studied. The goal of the work was to fill in the data on morphological and morphometric parameters of liver tissue.
Key words: morphometry, morphology, polypharmacy and inflammation

Currently, according to the World Health Organization, polypharmacy is one of the problems of the 21st century. Anti-inflammatory drugs are among the most commonly used drugs. Recently, polypharmacy has become a serious public health problem as a result of iatrogenicity. Reducing the pharmacotherapeutic properties of drugs causes an increase in the cost of treating patients. As a result, it shows that the problem of polypharmacy is not only a medical, but also a social problem, and finding a solution to it is an urgent task.

According to the world, at present, treatment of anti-inflammatory drugs in polypharmacy is carried out in the provision of medical care to patients of any age. Along with other organs in the body, scientific studies are being conducted to study the effect of polypharmacy on the liver,

various pathological conditions that occur in the liver under the influence of drugs, as well as the morphological changes of the liver.

Diseases that occur in the liver under the influence of drugs, their complications are studied, and preventive methods of treatment are recommended. However, there are very few studies devoted to the study of the morphological changes that can occur in the liver under the influence of several anti-inflammatory drugs at the same time.

Aims and objectives: to determine and evaluate the characteristics of morphological changes in the liver parenchyma of five-month-old white rats under the influence of anti-inflammatory drugs in polypharmacy. to determine the morphological changes of the liver of laboratory animals with simultaneous use of two anti-inflammatory drugs; to determine the morphometric changes of the liver of non-white rats with the use of two anti-inflammatory drugs at the same time;

Materials and methods: During the examination, a total of 40 liver tissues, divided into two groups, were pathogistologically examined based on macroscopic and microscopic studies of liver tissue. For general morphology, 2 pieces of each liver, i.e., a large piece and a 1.5x1.5 cm piece from the middle part, were cut and frozen in 10% neutral formalin. After washing in running water for 2-4 hours, they were dehydrated in increasing concentrations of alcohols and xylene, then paraffin embedded and blocks were prepared.

5-8 μm sections were prepared from paraffin blocks and stained with hematoxylin and eosin. The following anti-inflammatory agents were used to study the effects of polypharmacy in experimental groups of white rats in the experimental group:

Results and conclusions. White rats taken for the experiment were divided into 3 groups (n=50): I-group – (intact) control (n=20); Group 3 – white rats that received 3 different nonsteroidal anti-inflammatory drugs, paracetamol 15 mg/kg, aspirin 5 mg/kg, ibuprofen 6 mg/kg (n=50); Doses of this drug were calculated empirically and administered intragastrically every day for 10 days in the form of a solution.

From the 141th day of development to the 150th day, rats in the Control group of white non-breed rats were given 0.5 ml of distilled water intragastrically through a metal probe for 10 days. Sections taken from the liver of purebred rats were morphometrically examined, and the size of liver parenchyma and hepatocytes was measured using an ocular micrometer, in which we used a trinocular microscope manufactured in China.

The third group was the introduction of two types of anti-inflammatory drugs and the study of the morphological and morphometric changes in the liver parenchyma system called "morphology and morphometric characteristics of liver tissue in non-white rats".

Sections taken from the liver of rats were examined morphometrically, and the size of liver parenchyma and hepatocytes was measured using an ocular micrometer. The introduction of three types of anti-inflammatory drugs and the study of morphological and morphometric changes in the liver parenchyma system, the use of a complex of anti-inflammatory drugs (IAD) drugs as described above led to the appearance of various changes in the liver parenchyma of rats.

The weight of rats of the third group was from 200 to 250 g, the average was 225±6.98 g. The third group of rats had liver mass from 7.6 to 9.8 g, average - 8.09±0.26 g, liver length 2.9-3.7cm, average 3.3±0.1cm, liver high and the distance between the lower edges was 2.2-2.6cm, the

average was 2.4±0.07cm, the thickness was 2.8-3.2cm, the average was 3.0±0.9cm. The cross-sectional size of liver hepatocytes varies from 19.0 to 26.0 μm, the average is 24.6±0.76 μm, the average cross-section of hepatocyte cytoplasm is from 403.0 μm 2 to 675 μm 2 , the average is 568.7±17.26 μm 2. The number of binuclear hepatocytes per 100 hepatocytes ranges from 9 to 16, with an average of 13.2±0.40.

The diameter of the central veins ranges from 46.0 to 66.0 μm, with an average of 57±1.76 μm. The diameter of interlobular veins is from 20.0 to 34.0 μm, the average is 28.54±0.88 μm. The diameter of interlobular arteries ranges from 10 to 15 μm, with an average of 13.04±0.41 μm. The size of bile ducts ranges from 15.0 to 28.0 μm, the average is 21.8±0.68.

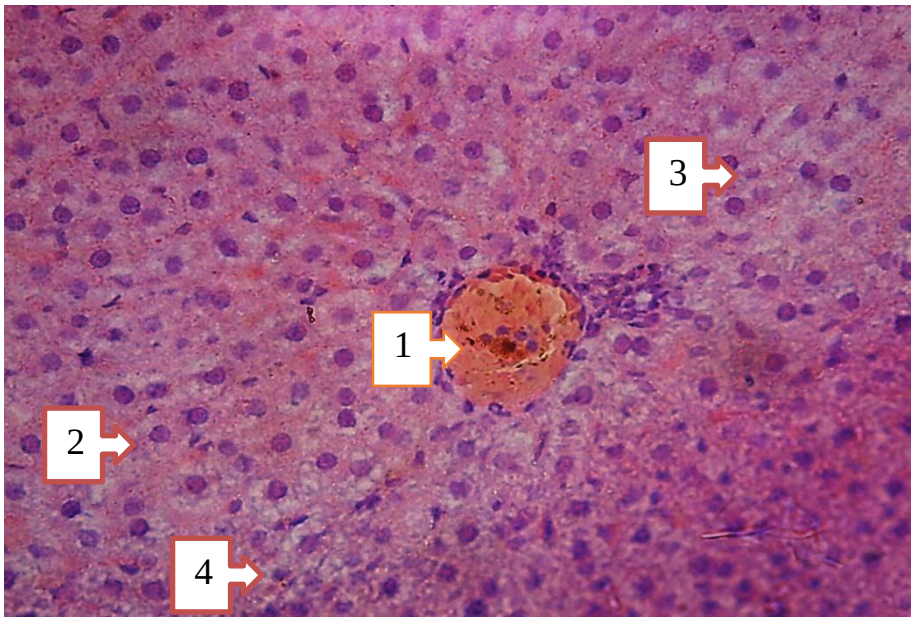

Figure 25 The central vein is full, surrounded by lympho-leukocyte infiltrations (1), the interlobular vein is full (2), fatty dystrophy (3), degeneratively changed hepatocytes (4)

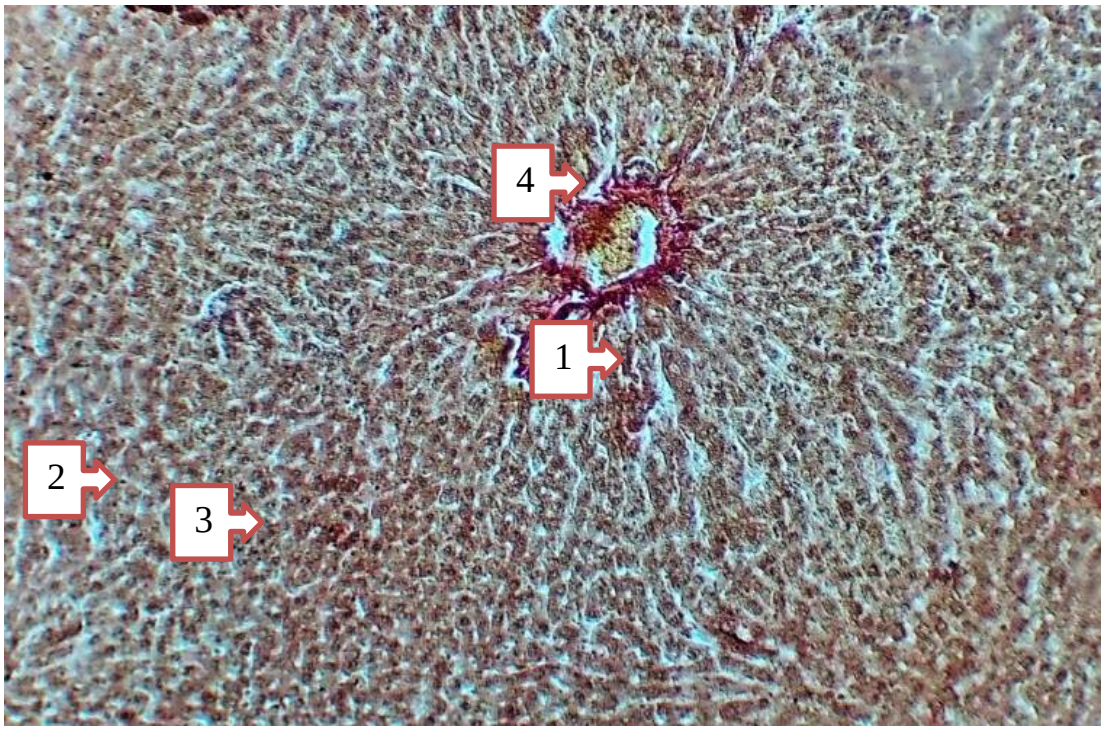

Figure 2 The central vein is full, surrounded by lympho-leukocyte infiltrations (1), the interlobular vein is full (2), fatty dystrophy (3), degeneratively changed hepatocytes (4). Paint Van-Gieson. 10x20 ob.

Thus, administration of a complex of steroidal anti-inflammatory drugs (SAID) drugs as described above led to the appearance of various pathomorphological changes in the liver parenchyma in rats. it is recommended to include hepatoprotective agents in treatment regimens.

Quit.
- These data allow to distinguish pathologies using a microscope and to compare cells with each other, knowing the normal indicators in the liver.
- Histological methods of analyzing the morphofunctional state of the liver are widely used in the diagnosis and differential diagnosis of liver diseases of various etiologies.

- These data can be used to fill out microscopic and macroscopic data during the educational process for students in the histology and pathology departments of medical institutions.

- Knowing the parameters of comparison of the morphometric indicators of the liver of non-white rats in normal condition and under the influence of anti-inflammatory drugs in polypharmacy makes it easier to make a pathogistological diagnosis.

Reference

1.Usanov, S. S., & Teshaev, S. J. (2022). COMPARATIVE CHARACTERISTICS OF THE LIVER MORPHOMETRIC PARAMETERS OF WHITE UNBORED RATS IN NORMALITY AND WITH THE ACTION OF 2 DIFFERENT ANTI-INFLAMMATORY PREPARATIONS IN POLYPRAGMASIA. Oriental renaissance: Innovative, educational, natural and social sciences, 2(1), 68-74.

2. Усанов, С. С. (2021). ХАРАКТЕРИСТИКА МОРФОМЕТРИЧЕСКИХ ПАРАМЕТРОВ ПЕЧЕНИ ПРИ ПОЛИПРАГМАЗИИ. Oriental renaissance: Innovative, educational, natural and social sciences, 1(8), 613-621.

3. Sadinovich, U. S., & Ismoilovich, I. O. (2022). OQ ZOTSIZ KALAMUSHLAR JIGARINING MORFOMETRIK KO'RSATGICHLARINI POLIPROGMAZIYADA YALLIG'LANISHGA QARSHI 4 HIL VOSITALAR TA'SIRI HOLATIDA O'RGANISH. JOURNAL OF BIOMEDICINE AND PRACTICE, 7(5).

4. Usanov, S. S. (2022). Anatomical and Histological Parameters of the Liver of White Nonbored Rats in Normal. BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI, 2(1), 123-128.

5. Usanov, S. S., & Zh, T. S. (2022). Study of Morphological Changes in the Liver of White Unbored Rats under the Influence of 3 Different Anti-Inflammatory Preparations. BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI, 2(1), 129-132.

6. Usanov, S. S., Teshaev, S. J., & Sanoev, B. A. (2022). MORPHOLOGICAL AND MORPHOMETRIC PARAMETERS OF THE LIVER OF WHITE NONBORED RATS IN NORMAL. Oriental renaissance: Innovative, educational, natural and social sciences, 2(1), 75-81.

7. Sadinovich, U. S. (2021). Characteristic Of The Morphometric Parameters Of The Liver In Polypragmasia. The American Journal of Medical Sciences and Pharmaceutical Research, 3(10), 28-32.

8. Sadinovich, U. S., Oblakulovich, K. S., & Murodullaevna, K. L. (2023). Morphology and morphometric characteristics of liver tissue of group four white rats. Journal of biomedicine and practice, 8(3).

9. Sadinovich, U. S. (2021). Characteristic Of The Morphometric Parameters Of The Liver In Polypragmasia. The American Journal of Medical Sciences and Pharmaceutical Research, 3(10), 28-32.

10. Усанов, С., Хидиров, З., & Олимова, Ж. (2023). ОҚ ЗОТСИЗ КАЛАМУШЛАР ЖИГАРИНИНГ МЕЪЁРДАГИ МОРФОЛОГИК ВА МОРФОМЕТРИК ПАРАМЕТРЛАРИ. Евразийский журнал академических исследований, 3(11), 101-107.

11. Усанов, С. С., & Хидиров, З. Э. (2024). ОҚ ЗОТСИЗ КАЛАМУШЛАР ЖИГАРИНИНГ МЕЪЁРДАГИ МОРФОЛОГИК ВА МОРФОМЕТРИК ПАРАМЕТРЛАРИ ЎРГАНИШ. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 2(2), 179-187.

12. Усанов, С. С., & Хидиров, З. Э. (2024). KALAMUSHLAR JIGARINING MORFOMETRIK KO'RSATGICHLARINI POLIPROGMAZIYA SHAROITIDA YALLIG'LANISHGA QARSHI 4 HIL VOSITALAR TA'SIRI HOLATIDA O'RGANISH. Journal of new century innovations, 48(1), 113-119.

13. Усанов, С. С., Хидиров, З. Э., & Абдурайимова, Ш. Ш. (2024). ОҚ ЗОТСИЗ КАЛАМУШЛАР ЖИГАРИНИНГ НОРМАДА МОРФОЛОГИК ПАРАМЕТРЛАРИНИ ЎРГАНИШ. TADQIQOTLAR. UZ, 33(2), 98-105.

14. Усанов, С. С., & Хидиров, Н. Ч. (2024). OQ ZOTSIZ KALAMUSHLAR JIGARINING MORFOMETRIK KO'RSATGICHLARINI POLIPROGMAZIYADA YALLIG'LANISHGA QARSHI 3 HIL VOSITALAR TA'SIRI HOLATIDA ЎРГАНИШ. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 2(2), 173-178.

15. Usanov, S., & Abduraimov, Z. (2024). YALLIG 'LANISHGA QARSHI DORI VOSITALARI POLIPRAGMAZIYASIDA JIGAR PARENXIMASINING MORFOMETRIK O 'ZGARISHLARINI O 'RGANISH. Medical science of Uzbekistan, (1), 13-17.

16. Тешаев, Ш., & Усанов, С. (2023). Yallig 'lanishga qarshi preparatlar bilan polipragmaziyada jigar parenximasining morfologik xususiyatlari. Каталог монографий, 1(1), 1-88.

17. Усанов, С. (2023). Морфологические особенности паренхимы печени при полипрагмазии противовоспалительными препаратами. Каталог диссертаций и авторефератов, 1(1), 2-119.

18. Zafarjon, A., & Khidirov, Z. E. (2023). MAIN CAUSES, DIAGNOSIS, AND EFFECTIVE TREATMENT OF POSTCHOLECYSTECTOMY SYNDROME. World Bulletin of Public Health, 21, 223-228.

19. Khidirov, Z. E., & Zafarjon, A. (2023). Views on" Postcholecystectomy Syndrome". Central Asian Journal of Medical and Natural Science, 4(3), 200-206.

20. Abduraimov, Z., & Khidirov, Z. (2023). RESTORATION OF MORPHOLOGICAL STRUCTURES IN THE WALL OF THE SMALL INTESTINE. Евразийский журнал медицинских и естественных наук, 3(10), 103-107.

21. Abduraimovich, A. Z., & Erkinovich, H. Z. (2023). MORPHOFUNCTIONAL CHARACTERISTICS OF THE SMALL INTESTINE DURING EXPERIMENTAL CHOLECYSTECTOMY AND ANTIHYPOXANT THERAPY IN ACUTE SMALL INTESTINAL OBSTRUCTION. Journal of Universal Science Research, 1(10), 222-229.

22. Мустафоев, З. М., Абдураимов, З. А., & Мавлонкулова, Д. М. (2023). МОРФОМЕТРИЧЕСКАЯ КЛАССИФИКАЦИЯ ОТДЕЛОВ НЕФРОНА КРЫС И ОПРЕДЕЛЕНИЕ ИЗМЕНЕНИЙ ЭФФЕКТА ПОЛИПРАГМАЗИИ ПРОТИВОВОСПАЛИТЕЛЬНЫХ ПРЕПАРАТОВ. Research Focus, 2(11), 119-123.

23. Мустафоев, З. М., Абдураимович, А. З., & Хидиров, З. Э. (2024). МОРФОМЕТРИЧЕСКАЯ, СРАВНИТЕЛЬНАЯ ХАРАКТЕРИСТИКА ПАРАМЕТРОВ ПОЧЕК ПРИ ПОЛИПРАГМАЗИИ аспирином, парацетамолом, ибупрофеном. Miasto Przyszłości, 46, 1177-1183.

24. Bagirova, S., & Abduraimov, Z. (2024). DEPENDENCE OF CERVICAL CANCER ON GENETIC POLYMORPHISM AND INTERNATIONAL ONCOLOGICAL STATISTICAL ANALYSIS. Евразийский журнал медицинских и естественных наук, 4(1 Part 2), 167-172.

25. Ismoilov, O. I., Murodkosimov, S. M., Kamalova, M. I., Turaev, A. Y., & Mahmudova, S. K. (2021). The Spread Of SARS-Cov-2 Coronavirus In Uzbekistan And Current Response Measures. The American Journal of Medical Sciences and Pharmaceutical Research, 3(03), 45-50.

26.Исмоилов, О., Камалова, М., Тураев, А., & Махмудова, С. (2021). Кратко об анатомо–физиологических особенностяхстопы и применение некоторых комплексных упражнений для устранения плоскостопия. Збірник наукових праць SCIENTIA.

27.Oblakluovich, K. S., Uktamovich, K. E., Muradovich, Y. M., & Ibragimovich, S. R. (2022). Pathomorphological features of thymus in intrauterine-infected newborns with body hypotrophy. ACADEMICIA: An International Multidisciplinary Research Journal, 12(4), 22-31.

28.Oslanov, A. A., Kadirov, J. F., Murodkosimov, S., & Kobilov, N. N. (2022). HEPATITIS B ORTHOHEPADNAVIRUS AND CORONOVIRUS INTERFERENCE. World Bulletin of Public Health, 9, 171-173.

29.Oslanov, A. A., Kadirov, J. F., Murodkosimov, S., & Kobilov, N. N. (2022). HEPATITIS B ORTHOHEPADNAVIRUS AND CORONOVIRUS INTERFERENCE. World Bulletin of Public Health, 9, 171-17

30.Хусанов, Э. У., Коржавов, Ш. О., Исмоилов, О. И., & Хидиров, З. Э. (2013). Исследование экскреции лактата кожи в зависимости от различных факторов. Science and world, 58.

31.Ўлмасов, А. А. Ў., & Исмоилов, О. Х. Ў. (2021). ШТАМПЛАР БАРҚАРОРЛИГИНИ ОШИРИШ ИТИҚБОЛЛАРИ. Scientific progress, 2(1), 924-928.

32.Murodkosimov, S. M., Mamatkulov, T. T., & Ismoilov, O. I. (2022). PREVENTING HIV INFECTION AMONG HEALTH-CARE WORKERS. Frontline Medical Sciences and Pharmaceutical Journal, 2(03), 35-40.

33.Камалова, М., Исмоилов, О., Азимова, А., Бекмуродова, Д., & Исматова, С. (2021). Варианты конституции тела человека. Збірник наукових праць scientia.

34.Хусанов, Э. У., Исмоилов, О. И., Коржавов, Ш. О., Рахмонов, З. М., & Мухаммадов, Н. А. (2019). Влияние клеточных препаратов пуповинной крови на морфологию кожи. In International scientific review of the problems of natural sciences and medicine (pp. 383-395).

35.Коржавов, Ш. О., Исмоилов, О. И., & Султанбаев, Ш. А. (2023). Морфологическое Строение Вилочковой Железы У Новорожденных С Врожденной Различной Вирусной Инфекцией. Central Asian Journal of Medical and Natural Science, 4(5), 527-534.

36.Ismoilov, O. I., Murodkosimov, S. M., & Kamalova, M. I. (2021). ANATOMO PHYSIOLOGICAL CHARACTERISTICS OF THE DIGESTIVE SYSTEM IN CHILDREN (LITERATURE REVIEW). Oriental renaissance: Innovative, educational, natural and social sciences, 1(7), 143-149.

37.Kamalova, M., Ismoilov, O., Murodkosimov, S., Ergashovich, K., Ismatova, S., & Shuhratovna, K. (2021). ORAL MUCOSAL STRUCTURE AT DIFFERENT AGES IN CHILDREN. Збірник наукових праць SCIENTIA.

38.Коржавов, Ш. О., Исмоилов, О. И., & Султанбаев, Ш. А. (2023). Морфологическое Строение Вилочковой Железы У Новорожденных С Врожденной Различной Вирусной Инфекцией. Central Asian Journal of Medical and Natural Science, 4(5), 527-534.

39.Сулейманов, Р. И. (2024). ЯЛЛИҒЛАНИШГА ҚАРШИ 2 ТУРДАГИ ДОРИ ВОСИТАЛАРИ ПОЛИПРАГМАЗИЯСИДА БУЙРАКЛАРНИНГ МОРФОМЕТРИК ПАРАМЕТРЛАРИНИНГ ЎРГАНИШ. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 2(2), 166-172.

40. ўғли Мустафоев, З. М., & Киямов, Б. Э. (2024). 2 ТУРДАГИ ЯЛЛИҒЛАНИШГА ҚАРШИ ДОРИ ВОСИТАЛАРИНИНГ БУЙРАКЛАР МОРФОМЕТРИК КЎРСАТКИЧЛАРИГА ТАЪСИРИНИ ЎРГАНИШ. SCHOLAR, 2(6), 4-11.

41. Хидиров, З. Э., & ўғли Мустафоев, З. М. (2024). ЯЛЛИҒЛАНИШГА ҚАРШИ 3 ТУРДАГИ ДОРИ ВОСИТАЛАРИНИНГ БУЙРАКЛАР МОРФОМЕТРИК КЎРСАТКИЧЛАРИГА ТАЪСИРИ. SCHOLAR, 2(6), 12-22.

42.Mustafoev, Z. M. (2021). Morphological Parameters Of Kidney In Polypragmasia With Anti-Inflammatory Drugs. The American Journal of Medical Sciences and Pharmaceutical Research, 3(10), 33-37.

43.Mustafoyev, Z., & Qo'ldoshev, F. (2023). TIBBIYOTDA IT TEXNOLOGIYALARIDA FOYDALANIB JIGAR SERROZINI DAVOLASH. Бюллетень студентов нового Узбекистана, 1(5 Part 2), 8-10.

44.Mustafoyev, Z. (2023). COMPARATIVE CHARACTERISTICS OF THE MORPHOMETRIC PARAMETERS OF THE KIDNEY IN POLYPHARMACY WITH ANTI-INFLAMMATORY DRUGS. Theoretical aspects in the formation of pedagogical sciences, 2(4), 75-80.

45.Mustafoev, Z. M., Teshaev, S. J., & Bakhronov, J. J. (2022). Features Of Kidneys Exposed to Various Factors. Eurasian Scientific Herald, 5, 144-154.

46.Zafarjon, M. (2022). ANALYSIS OF POLYPRAGMASIA PREVALENCE AND MORPHOLOGICAL CHANGES OF KIDNEYS. YANGI O'ZBEKISTONDA MILLIY TARAQQIYOT VA INNOVASIYALAR, 105-108.

47.Мустафоев, З. М., & БАХРОНОВ, Ж. НОВЫЙ ДЕНЬ В МЕДИЦИНЕ. НОВЫЙ ДЕНЬ В МЕДИЦИНЕ Учредители: Бухарский государственный медицинский институт, ООО" Новый день в медицине", (1), 286-288.

48.Мустафоев, З. М., Абдураимов, З. А., & Мавлонкулова, Д. М. (2023). МОРФОМЕТРИЧЕСКАЯ КЛАССИФИКАЦИЯ ОТДЕЛОВ НЕФРОНА КРЫС И ОПРЕДЕЛЕНИЕ ИЗМЕНЕНИЙ ЭФФЕКТА ПОЛИПРАГМАЗИИ ПРОТИВОВОСПАЛИТЕЛЬНЫХ ПРЕПАРАТОВ. Research Focus, 2(11), 119-123.

49.Mustafo o'g'li, M. Z. (2023). EMFEZMATOZNI KARBOKUL. Ta'lim innovatsiyasi va integratsiyasi, 10(4), 106-110.

50. Mustafoyevich, M. Z., Mahammad o'g'li, N. M., Zokir o'g'li, Z. M., & Mexrojidin o'g'li, B. X. (2023). INSON ORGANIZIMDA VITAMIN C YETISHMASLIGIDA UCHRAYDIGAN SINGA KASALLIGI. Scientific Impulse, 1(12), 271-273.

51. Mustafo o'g'li, M. Z. (2023). TIBBIYOTDA IT TEXNOLOGIYALARIDA FOYDALANIB JIGAR SERROZINI DAVOLASH. Ta'lim innovatsiyasi va integratsiyasi, 10(4), 93-95.

Мустафоев Зафаржон Мустафо ўғли, & Сулейманов Ремзи Ибрагимович. (2024). 52.ЯЛЛИҒЛАНИШГА ҚАРШИ 2 ТУРДАГИ ДОРИ ВОСИТАЛАРИ ПОЛИПРАГМАЗИЯСИДА БУЙРАКЛАРНИНГ МОРФОМЕТРИК ПАРАМЕТРЛАРИНИНГ ЎРГАНИШ. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 2(2), 166–172. https://doi.org/10.5281/zenodo.10701474