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Morphological Changes In The Spleen During The Polypragmation Of 2 Different Types Of Anti-Inflammatory Medicines In Album Rats

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Abstract: The following morphological changes occurred in the spleen of 5-month-old purebred rats under the influence of 2 different types of anti-inflammatory drugs: thickening of the trabecular vein wall, deformation of the inner surface, thickening of the trabecular artery wall, deformation of the inner surface, periarteriolar lymph layer (PALS) area and the "Reactive center" in the white pulp area, the mantle and marginal areas are expanded and thickened, splenic sinusoids (sinus lienalis), erythrocytes are swollen, fragmented, focal and scattered, hemosiderins of various sizes are reduced, the sinusoid wall and its o It was observed that the surrounding reticular fibers were swollen and swollen, and the structure was hyaline.

Key words: spleen, polypharmacy, anti-inflammatory drugs, rats, white pulp.

Relevance of the study. For practical medicine, it is of great importance to study the changes in spleen lymphoid tissue under experimental conditions, to simulate the effect of various anti-inflammatory substances used in production. The most dynamic and labile immune system actively reacts to antigenic effects and the effects of anti-inflammatory drugs with structural and functional changes. The effect of anti-inflammatory drugs of various nature causes specific changes in the microstructure and microtopography of the organs of the immune system, depending on the type of active substance, its concentration and duration of exposure. It was found that various anti-inflammatory drugs can inhibit DNA synthesis in cells of lymphoid organs, as well as decrease the number of small lymphocytes, mitotically dividing cells, and macrophages in organ tissues.

The spleen occupies a special place as an organ of the immune system and plays an important role in the formation of the body's protective reactions in response to the administration of anti-inflammatory drugs. It is in the spleen that antigens present in the blood "can activate properly identified lymphocytes to become immunocompetent cells." To date, sufficient detailed information has been obtained on the macro and microscopic structure of lymphoid formations in the spleen of people and some animals, age-related characteristics (Ambartsumyan E.F., 2021; Sapin M.R., Etingen JI. E., 2016).

Taking into account that the spleen plays an important role in maintaining the immune state in the body, studying the dynamics of lymphoid tissue development under the influence of high-concentration anti-inflammatory drugs is of great theoretical and practical importance.

Polypharmacy is known to cause drug interactions and contribute to the development of severe adverse drug reactions (ADRs). At the same time, in medical practice, ¬regardless of the

patient's characteristics, ADR can occur when one drug is unreasonably prescribed, and ¬drug interactions can occur when 2 or more drugs are prescribed at the same time . ¬Furthermore, polypharmacy and drug interactions may ¬be clinically beneficial in some clinical situations.

The morphological study of the structure of the spleen and the state of the whole organism under the influence of anti-inflammatory drugs is of particular interest, because these interactions, which reflect the state of the barrier protection function of the spleen, are sufficiently objective quantitative and qualitative. can be evaluated in terms of

The purpose of the study is to determine the morphological changes in the spleen of white rats in polypharmacy of 2 different types of anti-inflammatory drugs.

Material and methods. White rats treated with 2 types of anti-inflammatory drugs: paracetamol 15 mg/kg, aspirin 5 mg/kg (n = 40). In order to study the effect of polypharmacy in experimental groups of animals, biopreparations of 150 male white male rats studied during the research period were stained by this method until the required test materials were formed.

Freshly prepared Harris and Karatzi hematoxylin (BioVitrum, Russia) was performed according to the protocol:

- Dewaxing in xylol, 3 x 5 minutes
- Washed in 95% ethanol 3 times for 5 minutes each
- Wash off quickly with bidistilled water
- Harris or Karatsi hematoxylin stain (5 or 10 minutes)
- Wash off quickly with bidistilled water
- Differentiation of 1% HCl in 70% ethanol (in Harris hematoxylin, 2 or 10 seconds)
- Washed in distilled water to remove excess eosin
- Staining with 1% hydroalcoholic eosin ¬(1 or 2 minutes)
- Rinse quickly with bidistilled water
- Dehydration in ethanol for 10 seconds (70%, 95%, 95%)
- Clarify in xylene, 3 minutes
- Placing in mounting medium (Vitrogel, BioVitrum) under cover.

Prepared micropreparations were analyzed at x200 magnification using a light microscope (Axio Imager A1, Carl Zeiss, Germany) and an EC Plan-Neofluar 20x/0.50 M27 objective (Carl Zeiss, Germany). The results were evaluated by three histologists independently and at different times.

Research results. The following changes occurred after 5-month-old purebred rats were given 2 types of anti-inflammatory drugs: paracetamol 15 mg/kg, aspirin 5 mg/kg (Figure 1). Macroscopically, the surface is smooth dark-red, three-sided, and its orgonometric dimensions are as follows: length 40.98±0.54, width 9.02±0.26 mm, and thickness 3.6±0.13 mm. the weight is 0.842±0.03 g and the size of the member is 1330.70±20.13.

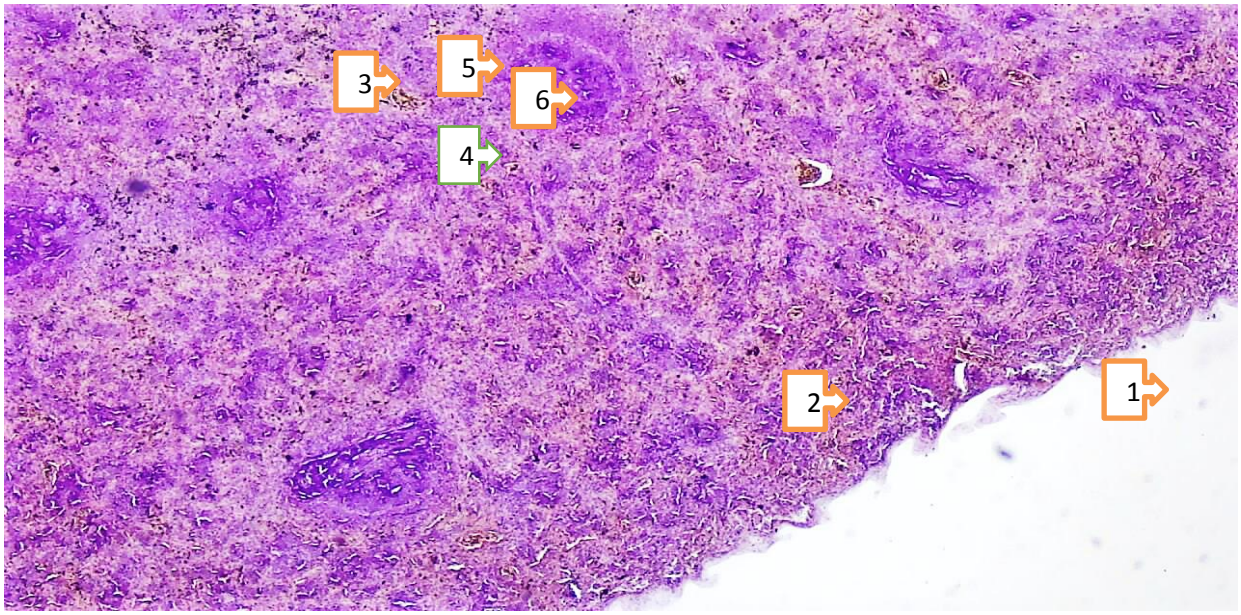

Figure 1. Morphological structure of the spleen of a 5-month-old white rat. Polyprogamy. Dye Hem-eosin. ob 10x20 ok. 1. Splenic capsule (by size) - elastic connective tissue is unevenly thickened. Fullness of sinusoids under the capsule and swelling in the stroma. 2. Red pulp area: enlarged spleen (Chordae lienalis), interstitial edema, foci of hemosiderosis and increased macrophages. 3. Splenic sinusoids (sinus lienalis) erythrocytes are digested and erythrocytes decomposed by splenocytes, i.e. macrophages - the product is hemosiderins of different sizes with foci and scattered locations. 4. White pulp area: The central part of the lymph follicle or the reproduction center - swelling in the reactive center, hyperplasia of B lymphocytes.

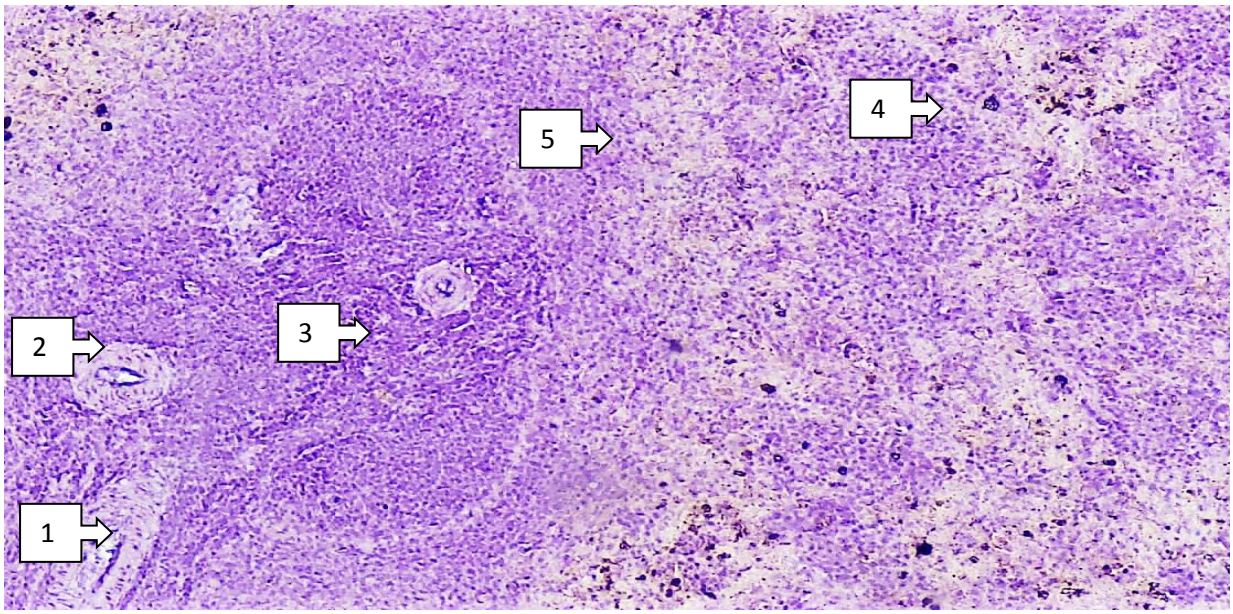

Figure 2. Morphological structure of the spleen. Dye Hem-eosin. ob 10x20 ok. 1. Thickened, deformed inner surface of the trabecular vein wall. 2. The wall of the trabecular artery is thickened, the inner surface is deformed. 3. Periarteriolar lymphatic layer (PALS) area and White pulp area: "Reactive center" expanded, mantle and marginal areas expanded and thickened. 4. Splenic sinusoids (sinus lienalis) erythrocytes are swollen, fragmented, foci and

scattered, hemosiderins of various sizes are reduced. 5. Sinusoidal wall and reticular fibers surrounding it are swollen, swollen and have a hyaline appearance. Hyalinosis of the spleen.

Microscopically, the capsule consisting of connective tissue surrounding the spleen is unevenly located and relatively thinned. Interstitial edema is seen in the organ stroma and red pulp of the subcapsular area, signs of fullness of the sinusoidal veins of the spleen, and signs of hemosiderosis are detected in the vessel and stroma. In the red blood cell, the amount of broken erythrocytes increased, the amount of lymphocytes and macrophages increased, the walls of the vessels of the central artery of the spleen were thickened, and small signs of thrombosis and intravascular hemasiderosis appeared in the vessel. When the white pulp is seen, primary and secondary lymph nodes with developed areas are visible. In the periarterial lymph node, the number and surface of lymphocytes are slightly reduced, developing lymphocytes are seen in the marginal and mantle areas. It can be seen that the development of lymphocytes in the field of reproduction has slowed down.

When looking at the morphometric parameters, the average surface of the lymph node is 131620.10±21321.15 μm2, the diameter of the lymph node is 437.66±40, the surface of the PALM area is 16360.37±1262.70 μm2, the menial area is 46014.387± 13121 μm2, the marginal area is 59031.61±11342 μm2 and the reproductive area is 10213.71±1462.15 μm2 and the diameter is 107.42±13.80 μm. When calculating the lymph node surfaces in percentages, it looks like this. PALM is 12.43%, mantle area is 34.96%, marginal area is 44.85% and reproductive area is 7.76% (Figure 2).

Summary. In 5-month-old purebred rats, under the influence of 2 different types of anti-inflammatory drugs, the following morphological changes occurred in the spleen: thickening of the trabecular vein wall, deformation of the inner surface, thickening of the wall of trabecular artery, deformation of the inner surface, periarteriolar lymph layer (PALS). "Reactive Center" in the area and white pulp area is expanded, mantle and marginal areas are expanded and thickened, splenic sinusoids (sinus lienalis) erythrocytes are swollen, fragmented, focal and scattered, hemosiderins of various sizes are reduced, the sinusoid wall and its It was observed that the affected reticular fibers were swollen, the swelling structure disappeared and the hyaline appearance of the spleen was observed.

Literature

1. Abdulloyevich S. A., Abdulloyevna S. L. To establish the morphofunctional features of changes in the cellular composition of the lymphoid tissue of the spleen //ResearchJet Journal of Analysis and Inventions. – 2022. – T. 3. – №. 1. – C. 104-111.
2. Abdulloyevich S. A. STUDY OF THE EFFECT OF WHITE RATS WITH ANTI-INFLAMMATORY DRUGS ON THE MORPHOMETRIC STATE OF THE LYMPHOID NODES OF THE SMALL INTESTINE //EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE. – 2022. – T. 2. – №. 10. – C. 126-131.
3. Abdulloyevich S. A. et al. Data From Foreign Literature on The Morphofunctional Properties of Lymphoid Cells Of The Spleen //Journal of Advanced Zoology. – 2023. – T. 44. – №. S7. – C. 36-40.
4. Saidov A. A. HISTOPATOLOGY OF THE SPLEEN IN POLYPRAGMASIA //ZAMONAVIY TA'LIM: MUAMMO VA YECHIMLARI. – 2022. – T. 1. – C. 211-214.

5. Saidov A. A. Morphological Changes of the Spleen with Polypragmasia //Procedia of Social Sciences and Humanities. – 2022. – Т. 4. – С. 23-24.
6. Saidov A. A. TALOQDA POLIPRAGMAZIYADA YUZAGA KELADIGAN MORFOMETRIK O‘ZGARISHLAR //ZAMONAVIY TA’LIM: MUAMMO VA YECHIMLARI. – 2022. – Т. 1. – С. 247-249.
7. Abdulloyevich S. A. To Study Morphometric Parameters of Lymphoid Tissue of the Spleen of White Healthy Rats in Postnatal Ontogenesis from three Months to Six Months of Age //INTERNATIONAL JOURNAL OF HEALTH SYSTEMS AND MEDICAL SCIENCES. – 2022. – Т. 1. – №. 4. – С. 104-108.
8. Abdullaevich S. A. Bronchopneumonia as a Complication of Coronavirus Infection //Eurasian Medical Research Periodical. – 2022. – Т. 15. – С. 43-46.
9. Саидов А. А. МОРФОЛОГИЧЕСКИЕ ИЗМЕНЕНИЯ СЕЛЕЗЕНКИ ПРИ ПОЛИПРАГМАЗИИ //International Conference on Research Identity, Value and Ethics. – 2022. – С. 88-91.
10. Хайдарова Н. А. Морфологическая И Морфометрическая Характеристика Щитовидной Железы При Полипрагмазии Противовоспалительными Препаратами //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2022. – Т. 1. – №. 7. – С. 151-155.
11. Akhtamovna K. N., Muyitdinovna K. S. Ischemic Heart Disease in Path Anatomic Practice: Cardio Sclerosis //European Multidisciplinary Journal of Modern Science. – 2022. – Т. 5. – С. 402-406.
12. Muyitdinovna X. S. The role of hyperhomocyteinemia in the development of cognitive disorders in chronic brain ischemia //Web of scientist: international scientific research journal. – 2022. – Т. 3. – №. 8. – С. 442-453.
13. Muyitdinovna X. S. The role of hyperhomocysteinemia in the development of cognitive impairment in chronic cerebral ischemia //Web Sci. Int. Sci. Res. J. – 2022. – Т. 3. – С. 421-428.
14. Muyitdinovna X. S. Analysis of maternal mortality in the practice of pathological anatomy //Web of scientist: international scientific research journal. – 2022. – Т. 3. – №. 8.
15. Kadirovna K. D., Muyitdinovna X. S. ELEVATED HOMOCYSTEIN LEVELS AS A RISK FACTOR FOR THE DISEASE IN CEREBRAL ISCHEMIA //World Bulletin of Public Health. – 2023. – Т. 21. – С. 117-120.
16. Муйитдиновна Х. С. СУД ТИББИЙ АМАЛИЁТИДА ЖИГАР ЦИРРОЗИ УЧРАШИ ВА СТАТИСТИК ТАҲЛИЛИ //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2023. – Т. 2. – №. 5. – С. 355-361.
17. Muyitdinovna K. S. Ovarian Cysts in Women of Reproductive Age //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2022. – Т. 1. – №. 7. – С. 225-228.
18. Muyitdinovna K. S. Pathogenetic Types and Principles of Treatment of Dyscirculatory Encephalopathy //Research Journal of Trauma and Disability Studies. – 2023. – Т. 2. – №. 9. – С. 72-79.
19. Muyitdinovna, X. S. (2023). Modern Aspects of the Etiology of Acute Intestinal Infections. *American Journal of Pediatric Medicine and Health Sciences (2993-2149)*, *1*(3), 102–105. Retrieved from https://grnjournal.us/index.php/AJPMHS/article/view/197

20. Muyitdinovna K. S. Prevalence and Epidemiology of Brain Cancer in Bukhara Region //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2022. – Т. 1. – №. 7. – С. 220-224.
21. Kadirovna K. D., Muyitdinovna X. S. The role of hypergomocysteinemia in chronic ischemic stroke : дис. – Antalya, Turkey, 2022.
22. Akhtamovna K. N. Modern View on the Influence of Antitumor Therapy on the Activity of the Thyroid Gland //Scholastic: Journal of Natural and Medical Education. – 2023. – Т. 2. – №. 5. – С. 50-54.
23. Muyitdinovna K. S. Prevalence and Epidemiology of Brain Cancer in Bukhara Region //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2022. – Т. 1. – №. 7. – С. 220-224.
24. Axtamovna H. N. Study of the Influence of Stress Factors on Animals //American Journal of Pediatric Medicine and Health Sciences. – 2023. – Т. 1. – №. 3. – С. 106-111.
25. Хайдарова Н. А. Морфологические Изменения Сердца У 6-Месячных Белых Беспородных Крыс Под Влиянием Энергетического Напитка //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2022. – Т. 1. – №. 7. – С. 142-146.
26. Khaidarova N. MODULAR TECHNOLOGY FOR TEACHING STUDENTS IN THE SCIENCE OF FORENSIC MEDICINE //Естественные науки в современном мире: теоретические и практические исследования. – 2022. – Т. 1. – №. 24. – С. 103-106.
27. Khaidarova N. ATHEROSCLEROSIS OF CORONARY VESSELS WITH NORMAL MACRO AND MICROSTRUCTURE OF THE THYROID GLAND IN PRACTICALLY HEALTHY PERSONS //Инновационные исследования в современном мире: теория и практика. – 2022. – Т. 1. – №. 24. – С. 606-608.
28. Mustafoevich S. O., Akhtamovana K. N. MEETING OF KIDNEY CYSTERS IN COURT MEDICAL AUTOPSY PRACTICE //Web of Scientist: International Scientific research Journal. – 2022. – №. 3. – С. 6.
29. Mustafoevich S. O., Akhtamovana K. N. Epitelial safe tumors of bladder rate, types and causes //Web of Scientist: International Scientific research Journal. – 2022. – №. 3. – С. 6.
30. Muitdinovna, K. S., & Rakhimovich, O. K. (2023). Forensic Medical Assessment and Statistical Analysis of Mechanical Asphixia. International Journal of Integrative and Modern Medicine, 1(3), 21–24.
31. Khaidarova Nargiza Akhtamovna. (2023). Modern Aspects of Morphological Features of the Thyroid Gland in Autoimmune Thyroiditis. *International Journal of Integrative and Modern Medicine*, *1*(3), 47–51. Retrieved from https://medicaljournals.eu/index.php/IJIMM/article/view/95
32. Xaydarova Nargiza Axtamovna. (2023). HASHIMOTO TIREOIDITIDA QALQONSIMON BEZNING MORFOLOGIK XUSUSIYATLARI. *AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI*, *2*(11), 247–252. Retrieved from https://sciencebox.uz/index.php/amaltibbiyot/article/view/8514
33. Kadirovna K. D., Muyitdinovna X. S. ELEVATED HOMOCYSTEIN LEVELS AS A RISK FACTOR FOR THE DISEASE IN CEREBRAL ISCHEMIA //World Bulletin of Public Health. – 2023. – Т. 21. – С. 117-120.

34. Axtamovna H. N. Effect of Hemodialysis Therapy on Heart Rhythm //Scholastic: Journal of Natural and Medical Education. – 2023. – Т. 2. – №. 5. – С. 326-331.
35. Axtamovna H. N. Effect of Hemodialysis Therapy on Heart Rhythm //Scholastic: Journal of Natural and Medical Education. – 2023. – Т. 2. – №. 5. – С. 326-331.
36. Kadirovna K. D., Muyitdinovna X. S. The role of hypergomocysteinemia in chronic ischemic stroke : дис. – Antalya, Turkey, 2022.
37. Muyitdinovna X. S. Modern Concepts on the Effect of Alcohol Intoxication on the Activity of the Heart //Scholastic: Journal of Natural and Medical Education. – 2023. – Т. 2. – №. 5. – С. 332-338.
38. Муйитдиновна Х. С. Суд Тиббий Амалиётида Механик Асфиксиялардан Чўкишнинг Учраши Ва Статистик Таҳлили //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2023. – Т. 2. – №. 11. – С. 403-406.
39. Rakhimovich O. K. CHARACTERISTICS OF MORPHOMETRIC AND ULTRASTRUCTURAL STRUCTURE OF LIVER HEPATOCYTES. – 2023.
40. Очилов К.Р., Каюмов Ж.Т. Ультраструктурные изменения печени крыс при пероральном введении солей тяжёлых металлов. “Пути совершенствования судебной экспертизы. Зарубежный опыт” Материалы научно-практической конференции 15-16 ноября 2017 г. Ташкент. С. 175.
41. Очилов К. Р. Влияние ионов кадмия и кобальта на дыхание митохондрий печени крыс //Новый день в медицине. – 2020. – №. 2. – С. 710-712.
42. Очилов К. Р. Изучение Влияние Солей Тяжелых Металлов На Биохимические Процессы Митохондрий Печени Крыс //Central Asian Journal of Medical and Natural Science. – 2021. – С. 383-387.
43. Очилов К. Р. СТРУКТУРНОЕ СТРОЕНИЕ КЛЕТОК ТКАНИ ПЕЧЕНИ ПРИ ВОЗДЕЙСТВИИ КАДМИЯ //Новости образования: исследование в XXI веке. – 2023. – Т. 1. – №. 7. – С. 372-377.
44. Очилов К. Р. ВЛИЯНИЕ СВИНЦА НА ОРГАНИЗМ ЧЕЛОВЕКА И ЖИВОТНЫХ //ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ. – 2023. – Т. 18. – №. 7. – С. 89-93.
45. ОЧИЛОВ К. Р. и др. ДЕЙСТВИЕ БУТИФОСА НА ТРАНСПОРТ Ca2+ В МИТОХОНДРИЯХ ПЕЧЕНИ КРЫС //Доклады Академии наук УзССР. – 1985. – Т. 45.
46. Наврузов Р. Р., Очилов К. Р. МОРФОФУНКЦИОНАЛЬНЫЕ ОСОБЕННОСТИ ЛИМФОИДНЫХ СТРУКТУР ТОЛСТОЙ КИШКИ ПРИ ЛУЧЕВОЙ БОЛЕЗНИ //Scientific progress. – 2022. – Т. 3. – №. 1. – С. 728-733.
47. Тешаев Ш. Ж., Очилов К. Р. МОРФОФУНКЦИОНАЛЬНЫЕ ОСОБЕННОСТИ МИТОХОНДРИЙ ПЕЧЕНИ КРЫС ПРИ ОТРАВЛЕНИИ БУТИЛКАПТАКСОМ //Новый день в медицине. – 2020. – №. 2. – С. 715-717.
48. Ochilov Kamil Rakhimovich Issues of Physical Health of Young People Intersections of Faith and Culture: AMERICAN Journal of Religious and Cultural Studies *Volume 01, Issue 02, 2023 ISSN (E): XXX-XXX*
49. Ochilov Komil Rahimovich Khaidarova Nargiza Akhtamovna Morphological and Morphometric Characteristics of the Thyroid Gland Polypharmacy Anti-inflammatory Sensors SCHOLASTIC: Journal of Natural and Medical Education *Volume 2, Issue 5, Year 2023 ISSN: 2835-303X* https://univerpubl.com/index.php/scholastic

50. *Ochilov Komil Rakhimovich Khatamova Sarvinoz Muitdinovna,* Forensic Medical Assessment and Statistical Analysis of Mechanical Asphixia IJIMM, Volume 1, Issue 3, 2023 ISSN: XXXX-XXXX http://medicaljournals.eu/index.php/IJIMM/issue/view/3 Kamil Rakhimovich Ochilov Studying The Effect Of Heavy Metal Salts On Biochemical Processes Of Rat Liver Mitochondria **DOI:** 10.47750/pnr.2022.13.S07.230
51. Ochilov Kamil Rakhimovich Effects of Heavy Metal Salts in Biochemical Processes, Rat Liver Mitochondria .American Journal of Science and Learning for Development ISSN 2835-2157 Volume 2 | No 1 | January -2023 Published by inter-publishing.com | All rights reserved. © 2023 Journal Homepage: https://inter-publishing.com/index.php/ AJSLD Page 109