IJIMM, Volume 2, Issue 6, 2024 ISSN: 2995-5319
http://medicaljournals.eu/index.php/IJIMM/issue/view/3

INTERNATIONAL JOURNAL OF INTEGRATIVE AND MODERN MEDICINE

Morphological Changes in Regional Lymph Nodes in Pulmonary Pneumosclerosis

Khaidarova Nargiza Akhtamovna
Bukhara State Medical Institute

Summary: Pulmonary fibrosis is a pathological process in the lungs characterized by refractoriness to therapy and high mortality rates, it represents a heterogeneous group of disorders with progressive and irreversible destruction of lung architectonics due to scarring, which ultimately leads to organ dysfunction, gas exchange disorders and death due to respiratory failure. [D.V. Bestaev, 2014]. But changes in the lymph nodes during the fibrous process of the lung tissue are poorly understood. The article presents a review of the literature on structural changes in regional lymph nodes that occur in experimental pulmonary fibrosis.

Keywords: pulmonary fibrosis, regional lymph nodes, experiment.

Relevance. The novel coronavirus disease 2019 (COVID-19) pandemic, caused by the SARS-CoV-2 coronavirus, has generated serious concern among the global community due to its rapid spread, high mortality rate and lack of specific and effective treatment (in the first 4 months after the report of outbreak of the disease, about 3 million people became infected with SARS-CoV2 and 200,000 died) [WHO Bull, 2020].

Like previous strains (SARS-CoV and MERS-CoV) of the coronavirus family, SARS-CoV2 primarily affects the respiratory system, causing lower respiratory tract infection and serious complications in the lungs, including acute respiratory distress syndrome (ARDS). [Aitbaev K. A., 2021], which is the main cause of death in patients with coronavirus. As for patients who survive ARDS, a significant proportion will have long-term impairment of pulmonary function due to the development of fibrosis. It is important to note that pulmonary fibrosis is a well-recognized consequence of ARDS and, as has been shown in several studies, the so-called “protective ventilation” of the lungs reduced radiological abnormalities after ARDS [Burnham E. L., et.all., 2014].

The pathological correlate of ARDS is diffuse alveolar injury (DAI), which is characterized by an initial (acute inflammatory) exudative phase with edema, hyaline membranes and acute interstitial inflammation, followed by an organizing phase with loose organizing fibrosis, mainly within the alveolar septa and type II pneumocyte hyperplasia [Cardinal-Fernández P., et.all., 2017]. The powerful third and final stage of ARDS may be the fibrotic phase. Thile et al described a cohort of 159 autopsies of patients with ARDS, showing that these pathological findings can either resolve to normal lung parenchyma or progress to fibrosis [Thille A.W., et.all., 2013]. In this study, 4% of patients with disease duration of less than 1 week, 24% of patients with disease duration of 1 to 3 weeks, and 61% of patients with disease duration of more than 3 weeks developed fibrosis. This description, together with additional data, confirms that pulmonary fibrosis begins early in the development of ARDS [Burnham E. L., et.all., 2014]. It is important to note that there is evidence that progressive pulmonary fibrosis may be the cause of mortality in many patients with ARDS, while a significant proportion of survivors will have long-term pulmonary dysfunction and radiological abnormalities suggestive of pulmonary fibrosis. At the same time, the degree of reticulation on computed tomography clearly correlates with indicators of quality of life and pulmonary function, which indicates a deterioration in indicators such as forced vital capacity and lung diffusion capacity [Burnham E. L., 2013].

Pneumosclerosis (pneumosclerosis; Greek pneumon lung + sklerosis compaction; synonyms: pneumofibrosis, pulmonary sclerosis) is the proliferation of connective tissue of the lungs due to an inflammatory or dystrophic process, leading to impaired elasticity and gas exchange function of the

affected areas. Traditionally, it is indicated that a constant sign of diffuse pneumosclerosis is shortness of breath, which often tends to progress. Changes in ventilation are characterized by restrictive breathing disorders.

I.V. Davydovsky pointed out that with pneumosclerosis, scar fields in the lung often undergo smooth muscle transformations ("muscular cirrhosis") due to constant respiratory excursions of the organ.

A number of scientists, under "pneumosclerosis," describe chronic cicatricial and degenerative changes that develop both in the alveoli and in the interstitial tissue between the lobules, along the bronchi, in the walls of the bronchi themselves [S.O. Neville, 1963]. In this case, the blood vessels of the lungs, nerve trunks and lymphatic vessels are involved in the process. Moreover, pneumosclerosis does not represent an independent nosological form.

A serious consequence of the acute course of COVID-19 infection, which has acquired pandemic status, is the development of interstitial pneumonia, which can result in fibrosis and pneumosclerosis of the lungs. Analysis of patients with COVID-19 at their discharge from the hospital indicates a high incidence of pulmonary dysfunction due to fibrosis and pneumosclerosis. According to the literature data of Russian scientists, 47% of patients have disturbances in the gas exchange mechanism, 25% have a decrease in the function of the total vital capacity of the lungs, which disrupts the vital functions and viability of the body.

These facts express the relevance of the problem of fibrosis and pulmonary pneumosclerosis. During the pandemic, the problem of pneumosclerosis has become the most pressing, and its pharmacotherapy has taken center stage in the field of view of scientists around the world.

The lymphatic bed transports tissue fluid from the lesion into the blood and can be considered as an organ that ensures the constancy of the volume of plasma and interstitial fluid [Kozlov V.I., 2005; Sapin M.R. et al., 2007; Banin V.V., 2014]. The lymphatic system is structured as a chain of intervalvular segments with different wall structures; it organizes a special outflow path from the organs (collateral drainage to the veins) of tissue fluid in the form of lymph, and in its composition - antigens. The lymphoid system looks like a special attachment to the cardiovascular system: lymphoid couplings of varying structural complexity surround tissue channels and vessels as their biofilter attachments, regulating the cellular and protein composition of the internal environment of the body. At the heart of the lymphoid system are blood vessels closed in a circle through which lymphocytes (re)circulate. The lymphatic bed drains lymphoid formations and brings lymph to some of them for cleansing. The lymphoid and lymphatic systems are united at the periphery into an immunoprotective complex: the lymphatic bed and lymphoid tissue around the blood microvessels cooperate to ensure the genotypic homeostasis of the body and constitute the lymphoid-lymphatic apparatus as part of the cardiovascular system. The lymphatic system is involved in the organization of immunity in humans and animals, since the lymphatic bed carries out the influx of antigens into the lymph nodes and simpler lymphoid formations (lymphoid nodules and plaques) with afferent lymphatic pathways.

Each inflammatory process in the lungs is reflected in the lymph nodes, sometimes only in the regional ones, sometimes in the extrathoracic and distant ones. Their reaction to lung infection in the form of enlargement in children is much stronger and more frequent than in adults, and any inflammatory process in the lungs may be followed by an increase in regional nodes.

A study of the available literature data revealed a lack of information about the effect of pulmonary fibrosis on the structural and morphological state of the tissue of regional lymph nodes.

Literature

1. 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.
2. 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.
3. 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.
4. 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.
5. Muyitdinovna X. S. Analysis of maternal mortality in the practice of pathological anatomy //Web of scientist: international scientific research journal. – 2022. – Т. 3. – №. 8.
6. 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.
7. 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.
8. Muyitdinovna K. S. Ovarian Cysts in Women of Reproductive Age //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2022. – Т. 1. – №. 7. – С. 225-228.
9. 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.
10. 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
11. 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.
12. Kadirovna K. D., Muyitdinovna X. S. The role of hypergomocysteinemia in chronic ischemic stroke : дис. – Antalya, Turkey, 2022.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.

18. 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.
19. 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.
20. 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.
21. 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.
22. 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
23. 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
24. 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.
25. Axtamovna H. N. Effect of Hemodialysis Therapy on Heart Rhythm //Scholastic: Journal of Natural and Medical Education. – 2023. – Т. 2. – №. 5. – С. 326-331.
26. Axtamovna H. N. Effect of Hemodialysis Therapy on Heart Rhythm //Scholastic: Journal of Natural and Medical Education. – 2023. – Т. 2. – №. 5. – С. 326-331.
27. Kadirovna K. D., Muyitdinovna X. S. The role of hypergomocysteinemia in chronic ischemic stroke : дис. – Antalya, Turkey, 2022.
28. 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.
29. 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.
30. Rakhimovich O. K. CHARACTERISTICS OF MORPHOMETRIC AND ULTRASTRUCTURAL STRUCTURE OF LIVER HEPATOCYTES. – 2023.
31. 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.
32. Очилов К. Р. Влияние ионов кадмия и кобальта на дыхание митохондрий печени крыс //Новый день в медицине. – 2020. – №. 2. – С. 710-712.
33. 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.

34. Очилов К. Р. СТРУКТУРНОЕ СТРОЕНИЕ КЛЕТОК ТКАНИ ПЕЧЕНИ ПРИ ВОЗДЕЙСТВИИ КАДМИЯ //Новости образования: исследование в XXI веке. – 2023. – Т. 1. – №. 7. – С. 372-377.

35. Очилов К. Р. ВЛИЯНИЕ СВИНЦА НА ОРГАНИЗМ ЧЕЛОВЕКА И ЖИВОТНЫХ //ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ. – 2023. – Т. 18. – №. 7. – С. 89-93.

36. ОЧИЛОВ К. Р. и др. ДЕЙСТВИЕ БУТИФОСА НА ТРАНСПОРТ Ca2+ В МИТОХОНДРИЯХ ПЕЧЕНИ КРЫС //Доклады Академии наук УзССР. – 1985. – Т. 45.

37. Наврузов Р. Р., Очилов К. Р. МОРФОФУНКЦИОНАЛЬНЫЕ ОСОБЕННОСТИ ЛИМФОИДНЫХ СТРУКТУР ТОЛСТОЙ КИШКИ ПРИ ЛУЧЕВОЙ БОЛЕЗНИ //Scientific progress. – 2022. – Т. 3. – №. 1. – С. 728-733.

38. Тешаев Ш. Ж., Очилов К. Р. МОРФОФУНКЦИОНАЛЬНЫЕ ОСОБЕННОСТИ МИТОХОНДРИЙ ПЕЧЕНИ КРЫС ПРИ ОТРАВЛЕНИИ БУТИЛКАПТАКСОМ //Новый день в медицине. – 2020. – №. 2. – С. 715-717.

39. Ochilov Kamil Rakhimovich Issues of Physical Health of Young People

40. Intersections of Faith and Culture: AMERICAN Journal of Religious and Cultural Studies Volume 01, Issue 02, 2023 ISSN (E): XXX-XXX

41. 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

42. 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

43. 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

44. 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

45. Олимова А. З., Шодиев У. М. Репродуктив Ёшдаги эркакларда бепуштлик сабаблари: Бухоро тумани эпидемиологияси //Scientific progress. – 2021. – Т. 2. – №. 7. – С. 499-502.

46. Zokirovna O. A., Abdurasulovich S. B. Ovarian Diseases in Age of Reproductive Women: Dermoid Cyst //IJTIMOIY FANLARDA INNOVASIYA ONLAYN ILMIY JURNALI. – 2021. – Т. 1. – №. 6. – С. 154-161.

47. Olimova A. Z. ECHINOCOCCOSIS OF LIVER OF THREE MONTHLY WHITE RAT //Scientific progress. – 2022. – Т. 3. – №. 3. – С. 462-466.

48. Олимова А. З. Морфологические и морфометрические особенности печени белых беспородных трех месячных крыс после тяжёлой черепно-мозговой травмы вызванной экспериментальным путём //BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI. – 2021. – Т. 1. – №. 6. – С. 557-563.

49. Oglu M. Z. M., Zokirovna O. A. МОРФОЛОГИЧЕСКИЕ И МОРФОМЕТРИЧЕСКИЕ ПАРАМЕТРЫ ПЕЧЕНИ БЕЛЫХ БЕСПОРОДНЫХ КРЫС, ПЕРЕНЕСШИХ ЭКСПЕРИМЕНТАЛЬНУЮ ЧЕРЕПНО-МОЗГОВУЮ ТРАВМУ ПОСЛЕ МЕДИКАМЕНТОЗНОЙ КОРРЕКЦИИ //JOURNAL OF BIOMEDICINE AND PRACTICE. – 2023. – Т. 8. – №. 1.

50. Олимова А. З., Турдиев М. Р. БУХОРО ШАҲРИДА МЕЪДА ВА ЎН ИККИ БАРМОҚЛИ ИЧАК ЯРАСИ УЧРАШ ЭПИДЕМИОЛОГИЯСИ //Oriental renaissance: Innovative, educational, natural and social sciences. – 2022. – Т. 2. – №. 4. – С. 642-647.

51. Zokirovna O. A. Modern Concepts of Idiopathic Pulmonary Fibrosis //American Journal of Pediatric Medicine and Health Sciences. – 2023. – Т. 1. – №. 3. – С. 97-101.

52. Zokirovna O. A. Pathology of Precancerous Conditions of the Ovaries //American Journal of Pediatric Medicine and Health Sciences. – 2023. – Т. 1. – №. 3. – С. 93-96.

53. Зокировна, Олимова Азиза и Тешаев Шухрат Джумаевич. «Морфологические аспекты печени белых беспородных крыс после тяжелой черепно-мозговой травмы, вызванной экспериментально в виде дорожно-транспортного происшествия». *Scholastic: Journal of Natural and Medical Education* 2.2 (2023): 59-62.

54. Zokirovna O. A. Comparative characteristics of the morphological parameters of the liver at different periods of traumatic brain injury //Euro-Asia Conferences. – 2021. – С. 139-142.

55. Zokirovna O. A. Macroand microscopic structure of the liver of threemonthly white rats //Academic research in educational sciences. – 2021. – Т. 2. – №. 9. – С. 309-312.

56. Олимова А. З. Частота Встречаемости Миомы Матки У Женщин В Репродуктивном Возрасте //BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI. – 2021. – Т. 1. – №. 6. – С. 551-556.

57. Zokirovna O. A., Abdurasulovich S. B. Ovarian Diseases in Age of Reproductive Women: Dermoid Cyst //IJTIMOIY FANLARDA INNOVASIYA ONLAYN ILMIY JURNALI. – 2021. – Т. 1. – №. 6. – С. 154-161.

58. Zokirovna O. A. Cytological screening of cervical diseases: pap test research in the bukhara regional diagnostic center for the period 2015-2019. – 2022.

59. Zokirovna O. A., PREVALENCE R. M. M. EPIDEMIOLOGY OF CANCER OF THE ORAL CAVITY AND THROAT IN THE BUKHARA REGION //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 11. – С. 545-550.

60. Olimova A. Z. The frequency of occurrence of my uterus In women of reproductive age //JOURNAL OF ADVANCED RESEARCH AND STABILITY (JARS). – 2021. – Т. 1. – №. 06. – С. 551-556.

61. Olimova Aziza Zokirovna. (2023). MODERN PRINCIPLES OF THE EFFECT OF HEMODIALYSIS THERAPY ON HEART RATE. *International Journal of Integrative and Modern Medicine*, *1*(1), 80–85.
Retrieved from http://medicaljournals.eu/index.php/IJIMM/article/view/28

62. Olimova Aziza Zokirovna. (2023). PATHOMORPHOLOGICAL CHARACTERISTICS OF THE EPIDIDYMIS UNDER IRRADIATION. *International Journal of Integrative and Modern Medicine*, *1*(1), 96–100. Retrieved from http://medicaljournals.eu/index.php/IJIMM/article/view/31

63. Olimova Aziza Zokirovna. (2023). THE INCIDENCE OF CANCER OF THE ORAL CAVITY AND PHARYNX IN THE BUKHARA REGION. *International Journal of Integrative and Modern Medicine*, *1*(1), 86–89. Retrieved from http://medicaljournals.eu/index.php/IJIMM/article/view/29

64. Olimova Aziza Zokirovna. (2023). INFLUENCE OF ALCOHOL INTOXICATION ON THE HEART TISSUE OF RATS IN THE EXPERIMENT. *International Journal of Integrative and Modern Medicine*, *1*(1), 90–95.
Retrieved from http://medicaljournals.eu/index.php/IJIMM/article/view/30

65. Olimova Aziza Zokirovna. (2023). Modern Aspects of the Etiology of Gastric Ulcer and Its Complications. *American Journal of Pediatric Medicine and Health Sciences (2993-2149)*, *1*(3), 163–166. Retrieved from http://grnjournal.us/index.php/AJPMHS/article/view/208

66. Zokirovna O. A., Jumaevich T. S. Morphological Aspects of the Liver of White Outbred Rats After Severe Traumatic Brain Injury Caused Experimentally in the Form of a Road Accident //Scholastic: Journal of Natural and Medical Education. – 2023. – Т. 2. – №. 2. – С. 59-62.

67. Aziza Zokirovna Olimova GASTRIC ULCER AND ITS COMPLICATIONS // Scientific progress. 2022. №3. URL: https://cyberleninka.ru/article/n/gastric-ulcer-and-its-complications (дата обращения: 28.09.2023).

68. Olimova Aziza Zokirovna. (2022). TECHNIQUE FOR CUTTING BIOPSY AND SURGICAL MATERIAL IN THE PRACTICE OF PATHOLOGICAL ANATOMY AND FORENSIC MEDICINE. *Web of Scientist: International Scientific Research Journal*, *3*(7), 116–120. https://doi.org/10.17605/OSF.IO/PSQ59

69. Zhumayevich N. F., Zokirovna O. A. PATHOMORPHOLOGY OF GASTRIC CANCER //BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI. – 2022. – С. 330-333.

70. Zokirovna O. A. Epidemiological and Etiological Data of Morphogenesis and Pathomorphology of Congenital Heart Diseases in Children //American Journal of Pediatric Medicine and Health Sciences. – 2023. – Т. 1. – №. 4. – С. 88-91.