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MORPHOLOGICAL FEATURES OF THE GASTRIC MUCOUS LAYER IN POLYPRAGMASY WITH ANTI-INFLAMMATORY DRUGS

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✓ ***Resume***

Diseases of the gastrointestinal system occupy one of the highest places in terms of morbidity of the population. Epidemiological studies conducted on gastroscopy and morphological assessment of gastric mucosa revealed that more than half of the population suffers from chronic gastritis.

Immunocompetent tissues of the digestive system are called "lymphoid tissues". Lymphocyte recirculation and the immune response cover the mucosa of the entire gastrointestinal tract .Circulating lymphocytes are involved in the recovery of the cellular composition of irradiated lymph nodes .The arrival of a significant amount of natural flora after birth induces its immunological responses, namely the expansion of the intraepithelial lymphocyte population and the expansion of the distribution of cells in the crypts .Further progress in the knowledge of the lymphatic system is not possible without taking into account the processes that occur around the lymphatic capillaries and in the interstitium.

Keywords: Polypharmacy, multiple diseases, clinical outcomes, digestive system, lymphoid tissues.

МОРФОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА МОРФОМЕТРИЧЕСКИХ ПОКАЗАТЕЛЕЙ СЛИЗИСТОЙ СЛОЙКИ ЖЕЛУДКА ПРИ ПОЛИПРАГМАЗИИ НА ПРОТИВОВОСПАЛИТЕЛЬНЫХ ПРЕПАРАТАХ

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✓ ***Резюме***

Болезни желудочно-кишечного тракта занимают одно из самых высоких мест в структуре заболеваемости населения. Проведенные эпидемиологические исследования по гастроскопии и морфологической оценке слизистой оболочки желудка выявили, что более половины населения страдает хроническим гастритом.

Иммунокомпетентные ткани пищеварительной системы называются «лимфоидными тканями». Рециркуляция лимфоцитов и иммунный ответ охватывают слизистую оболочку всего желудочно-кишечного тракта. Циркулирующие лимфоциты участвуют в восстановлении клеточного состава облученных лимфатических узлов. Поступление значительного количества естественной флоры после рождения индуцирует его иммунологические ответы, а именно расширение внутриэпителиальной популяции лимфоцитов и расширение распределения клеток в криптах. Дальнейший прогресс в познании лимфатической системы невозможен без учета процессов, происходящих вокруг лимфатических капилляров и в интерстиции.

Ключевые слова: Полипрагмазия, множественные заболевания, клинические исходы, пищеварительная система, лимфоидные ткани.

YALLIG'LANISHGA QARSHI DORI VOSITALARIDA POLİPRAGMAZYASIDA ME'DA SHILLIQ QAVATINING MORFOMETRIK KO'RSATKORLARINI MORFOLOGIK XUSUSIYATLARI

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✓ ***Rezyume***

Oshqozon-ichak trakti kasalliklari aholining kasallanish strukturasida eng yuqori o'rinlardan birini egallaydi. Oshqozon shilliq qavatini gastroskopiya va morfologik baholash bo'yicha o'tkazilgan epidemiologik tadqiqotlar aholining yarmidan ko'pi surunkali gastritdan aziyat chekishini aniqladi.

Ovqat hazm qilish tizimining immunokompetent to'qimalariga "limfoid to'qimalar" deyiladi. Limfotsitlarning resirkulyatsiyasi va immun reaktsiyasi butun oshqozon-ichak traktining shilliq qavatini o'z ichiga oladi. Aylanib yuruvchi limfotsitlar nurlangan limfa tugunlarining hujayra tarkibini tiklashda ishtirok etadi.

Tug'ilgandan keyin sezilarli miqdordagi tabiiy floraning kelishi uning immunologik javoblarini, ya'ni limfotsitlarning intraepitelial populyatsiyasining kengayishini va hujayralarning kriptlarda tarqalishining kengayishini keltirib chiqaradi. Limfatik tizimni bilishda keyingi rivojlanish limfa kapillyarlari atrofida va interstitiumda sodir bo'ladigan jarayonlarni hisobga olmasdan mumkin emas.

Kalit so'zlar: Polifarmatsiya, ko'plab kasalliklar, klinik natijalar, ovqat hazm qilish tizimi, limfoid to'qimalar.

Relevance

Artificial feeding causes an increase in the large neurons of the intermuscular ganglia of the stomach and a decrease (21%) in the neuron ganglia in medium-sized nerve cells. Injuries of the muscle layer of the stomach wall in the form of cutting, crushing and thermocoagulation lead to increased proliferative activity of myocytes near the gastric ulcer [1,3,5,7,9,11,13]. The effect of zirk leaf extract on the surface of gastric ulcer resulted in a significant decrease in ulcer healing times. In patients with arterial hypertension, the healing time of gastric ulcer is prolonged.

In stenosis of the pyloric part of the stomach, the volume of neuromyocytes of the smooth muscle tissue of the organ wall increases, the motor activity of the smooth muscle component of the stomach walls decreases. In recent years, many studies have been devoted to the effects of drinking mineral waters on mucosal receptors, acidity of gastric juice, motility of the gastrointestinal system, formation of coffee, electrolytic exchange, and hormone levels . When the pesticide "Fastokin" was injected into the body of experimental animals, a change in the mucous membrane of the stomach, i.e. inflammation, was detected. The selection of the stomach for research is explained by the fact that many people suffer from various diseases in this organ: stomach inflammations and ulcers, and at the same time, the information about the fine structure of all the components that make up the walls of the stomach is not sufficiently revealed in the scientific literature [2,4,6,8,10,12,14,16,18]. Recent years have also seen the development of smartphone applications such as My Medicine Passport to improve communication between patients and healthcare providers, improve people's understanding of their condition and treatment, and track changes to a patient's medication. Polypharmacy is the simultaneous use of several drugs by one patient. As the population ages in the developed world, particularly the UK, the number of people with chronic diseases is increasing, and there is increasing pressure on doctors to adhere to evidence-based guidelines for the management of chronic diseases. Despite the fact that many studies have been carried out in polypragmasy, information about the stomach, which is the central organ of the alimentary canal, is very little in the literature [2,15,17,19,20].

The purpose of the study. Study of morphological and morphometric parameters of gastric mucosa wall in polypharmacy with anti-inflammatory drugs.

Material and methods

Staining micropreparations with hematoxylin-eosin - staining of micropreparations by Van-Gieson methods - Determination by variational statistics method using Strelkov charts. Using the methods of modern morphological research (organometric, histological, histomorphometric, statistical), new information was obtained directly about the morphological and morphometric parameters of the stomach wall. Changes identified at the tissue, cellular and intercellular levels are characterized by hypotrophic and hypoplastic changes in the structures of the gastric wall of the white male rat.

Result and discussion

According to the scientific significance of the results obtained from the research on the structural disorders of the gastric wall morphological parameters, it is manifested in the rational approach to the determination of the complex defense mechanism of the organism, which occurs as a result of the influence of various pathogenic factors. The scientific and practical significance of the research results is based on the high level of explanation of the structural and functional mechanisms of changes in the stomach wall observed in the norm and the effect of polypharmacy. This, in turn, helps to determine the most critical periods that are necessary for the implementation of measures for the prevention of stomach diseases. Inflammation and destructive damage of the mucous membrane of the gastrointestinal tract, which occurs against the background of taking anti-inflammatory drugs, occupies one of the leading places in the practice of doctors. The challenge of treating these diseases is a prime example of the complexity of managing comorbid conditions. If we refer to the results of any clinical trials, the presence of comorbidity is often an exclusion criterion. Some sources give an acceptable definition of polypharmacy - prescription of more drugs (5 or more) than the clinical condition and quantitative determination - this is called polypharmacy. In medical dictionaries, polypharmacy is also referred to as a "one-prescription" package. Often this phenomenon is observed in elderly patients. The side effects of these groups of drugs are naturally associated primarily with damage to the mucosa of the gastrointestinal tract and the urinary system. Thus, damage to the gastric mucosa caused by long-term use of non-steroidal anti-inflammatory drugs leads to the development of life-threatening conditions and a decrease in adaptive response.

The presented data show that today, combating polypharmacy with anti-inflammatory drugs is one of the important tasks of providing medical care to patients of any age. This highlights the need to develop strategies for effective and safe drug use in patient care that improve quality of care and reduce adverse drug reactions. In addition, the development and testing of pharmacotherapy schedules do not take into account the characteristics of the drug's effect on the lymphoid system of the intestine. The effect on the presence and operation of existing polyplast models, the structure and operation of the lymphoid tissue in it is the body's response to the effects. If the antigen perceives a stimulus that is not specific for the stomach, it affects the formation of the stomach wall of the fetus and newborns during the development of pregnancy. This effect takes place in morphogenesis with the help of lymphocytes together with the nervous and endocrine systems. Understanding the morpho-functional relationships of lymphocytes and epitheliocytes becomes necessary for the formation of ideas about the development and functioning of the organ. The digestive system is a complex conveyor (proportional to the condition of the whole body), that is, it works in an interdependent manner. Despite the fact that this system is controlled by the nervous system, there is a close relationship between the digestive process as a whole and the activity of individual lactating glands. Disruption of one of the digestive system can lead to disruption of the function of other organs. The composition of the digestive system changes with age and is distinguished at each stage of their development. Diseases of the digestive system are at the heart of: - embryonic development and structural and functional support disorders of the digestive process. The digestive system is sometimes referred to as the gastrointestinal tract, but more fully describes the functions or components of other systems. Organs of the digestive system also produce non-digestive coagulation factors and hormones, which contribute to the regulation of immunity in the body. Gastrointestinal tract is the most complex system of interpretation and interaction of digestive organs. All of them are inextricably linked. The failure of one body can lead to the failure of the entire system. All of them perform their tasks and ensure the normal functioning of the body. All parts of the tract are interrelated and pathological processes affect each other. Currently, a lot of work is being done to reduce the incidence of polyphragmosis in the medical practice of the healthcare sector of our country. One of them is the Regulation of the Ministry of Health of the Republic of Uzbekistan No. 191 of June 18, 2010 "On approval of the regulation on the procedure for prescribing drugs and receiving, storing and using drugs by the patient in treatment-prophylactic institutions, as well as the procedure for providing drugs to the population by prescription in pharmacies "gi command embodies. By the middle of the 21st century, diseases of the gastrointestinal system occupy one of the leading places among common chronic diseases (erosive-gastritis and erosive-ulcerative gastritis), therefore, in recent years, the histological structure of the gastric mucosa of humans and mammals has been studied. In particular, new directions have been

identified in the study of albino rats, since rats are the main model for reproducing human pathology under experimental conditions and for testing new drugs.

All of the above undoubtedly makes it difficult to correctly interpret the functional significance of the components of the stomach wall in normal and pathological terms. Central to previous research on polypharmacy is the need to manage the risks and benefits of drug treatment. This is an area where "personalized medicine" approaches can help. In recent decades, the healthcare system has gradually shifted from a reactive to a preventive, individualized approach to medicine.

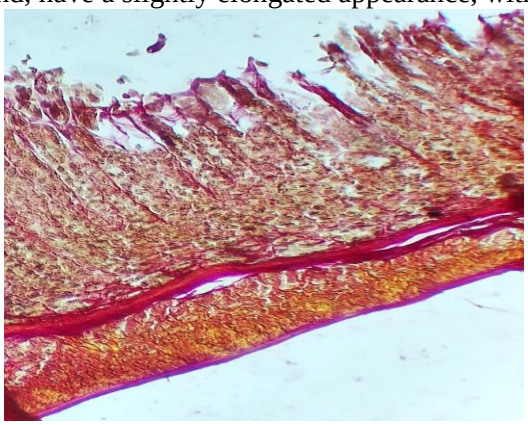
The thickness of the muscle layer of the body part of the stomach wall was 218.9-232.5 μm, the average was 227.5±1.25 μm. In the transition to the duodenum, this indicator varies from 371.4 to 442.3 μm, and the average was 410.1 ± 6.52 μm. The height of the glandular tissue of the gastric wall is 38.9-46.8 μm in the cardiac part, on average 42.5±0.73 μm. It varies from 37.4 to 42.2 μm in the area of the bottom of the organ, the average was 40.4±0.44 μm. The height of glandular tissue of the body part was in the range of 36.1-44.2 μm, and the average was 40.6±0.74 μm. In the pyloric part, this measurement was 40.8-47.9 μm, the average was 44.4±0.65 μm. The glands in the stomach wall are mainly composed of head, parietal and mucus-producing cells. It can be seen that the bottom and body of the gland are composed of head and parietal cells, and the posterior area is composed of parietal and mucus-producing cells. Head cells have a spherical appearance, and the nucleus is located in the center of the cell. Parietal cells are larger than head cells, and these cells are often oval in shape.

The index of morphological parameters of gastric wall of non-white male rats in the control group at 5 months.

The thickness of the submucosa base under the mucous layer of the stomach wall in the cardiac area of the organ varied from 38.6 to 47.3 μm, and the average was 42.7±0.8 μm. The thickness of the submucosal base at the bottom of the organ varied from 39.4 to 45.8 μm, and the average was 43.2±0.59 μm. The thickness of the submucosa base in the body part of the stomach wall is 40.3-48.1 μm, on average 43.6±0.72 μm. The thickness of this layer in the pyloric part of the organ varied from 41.2 to 52.1 μm, and was equal to 46.3 ± 1.01 μm on average (table 1.).

The general muscle layer of the stomach wall includes two - internal and external muscle membranes. It can be seen that the structure of the inner layer consists of bundles of myocytes in the longitudinal direction. The outer layer consists of muscle fibers in a circular orientation. In the wall of the organ, the internal longitudinal layer consists of a bundle of myocytes with an elongated oval shape and a larger longitudinal volume. The myocyte bundle located in the pyloric part of the stomach wall consists of oval-shaped cells.

In addition, parietal cells have 1 or 2 nuclei in their center. Mucus-producing cells, on the other hand, have a slightly elongated appearance, with an oval or triangular nucleus in the center of the cell.



1 - Fig. The pyloric part of the stomach.

In the pyloric part of the stomach, the density of collagen fiber bundles is greater compared to the longitudinal cardiac part. Closer to the bottom of the glands, bundles of collagen fibers change their orientation and penetrate between them. The bundles of collagen fibers located around the vessels have a circular direction. In this case, the bundles of elastic fibers of the own plate of the mucous membrane have a disordered state compared to collagen fibers.

Table 1

Structural components of the stomach wall

Structural components of the stomach wall	**Cardiac part of the stomach (** μm**)**	**The bottom of the stomach(** μm**)**	**The body of the stomach(** μm**)**	**The pyloric part of the stomach(** μm**)**
The height of the mucosa of the stomach wall	*433,9-524,3 average474,0±8 ,32*	*442,1-529,3 average 509,4±8,02*	*448,1-546,8 average 511,8±9,08*	*381,4-476,5 average 427,4±8,75*
The height of the crease	*425,3-505,8average45 6,5±7,41*	*430,3-518,1 average473,0±8 ,08*	*438,4-538,5 average 492,5±9,2*	*372,3-468,9 average 418,3±8,89*
The height of the recess between the folds	*384,3-462,1 average411,5±7 ,16*	*388,4-471,8 Average 422,1±7,67*	*392,6-491,4 average 448,7±9,09*	*331,2-421,8 average 366,0±8,34*
Submucosal basis	*38,6-47,3average 42,7±0,8*	*39,4-45,8 average 43,2±0,59*	*40,3-48,1 average 43,6±0,72*	*41,2-52,1 average 46,3±1,01*
Total muscle layer thickness	*205,8-261,3average 236,4±5,11*	*181,3-221,8 average 04,4±3,73*	*218,9-232,5 average 227,5±1,25*	*371,4-442,3 average 410,1±6,52*
Glandular discharge	*38,9-46,8 average 42,5±0,73*	*37,4-42,2 average 40,4±0,44*	*36,1-44,2 average 40,6±0,74*	*40,8-47,9 average 44,4±0,65*
The total thickness of the stomach wall	*658,3-824,3 average 748,9±15,27*	*611,4-796,8 average 751,9±17,06*	*713,8-805,9 average 787,0±8,47*	*774,2-979,6 average 896,8±18,9*

The total thickness of the stomach wall in the cardiac part of the organ varied from 658.3 to 824.3 μm, and its average was 748.9±15.3 μm. At the bottom of the member, this index was 611.4-796.8 μm, and the average was equal to 751.9±17.1 μm. The total thickness of the body wall was 713.8-805.9 μm, the average was 787.1±8.47 μm. In the pyloric part, this indicator varied from 774.2 to 979.6 μm, and on average it was equal to 896.8±18.9 μm (fig. 1).

The height of the fold of the body part of the stomach wall varied from 423.7-489.8 μm, and on average it was 480.2±6.08 μm. In the duodenal region, this indicator was 364.8-442.3 μm, the average was 407.4±7.1 μm. The height of the cavity between the folds of the mucous membrane, which is one of the components of the stomach wall, was 351.3-431.7 μm in the cardiac part, and its average value was 394.5±7.4 μm. It can be seen that it varies from 353.4 to 433.7 μm in the area of the bottom, and our average indicator is 397.2±7.39 μm. When the body part of the stomach wall was studied, this indicator was 346.2-461.5 μm, the average was 414.4±10.6 μm. In the pyloric part of the organ, the height of the groove between the studied folds was 303.6-391.7 μm, and its average was 354.2±8.1 μm. The thickness of the submucosa base under the mucous layer of the stomach wall in the cardiac area of the organ varied from 36.3 to 45.4 μm, and the average was 41.5±1.84 μm. The thickness of the submucosal base at the bottom of the organ varied from 36.8 to 43.9 μm, and the average was 40.7±0.65 μm. The thickness of the submucosa base in the body part of the stomach wall is 38.1-46.5 μm, on average 42.6±0.77 μm. The thickness of this layer in the pyloric part of the organ varied from 39.3 to 50.6 μm, and on average it was equal to 44.9±1.04 μm.

The indicator of morphological parameters of the stomach wall of white male rats in the II group of the experiment in the period of 5 months.

Table 2

Structural components of the stomach wall

Structural components of the stomach wall	**Cardiac part of the stomach (µm)**	**Stomach fundus (µm)**	**Body of the stomach (µm)**	**Pyloric part of the stomach (µm)**
Mucous membrane of the stomach wall	*421,2-510,6 average 469,5±8,2*	*441,2-513,8 average497,3±6,68*	*449,2-533,5 average501,0±7,25*	*382,1-455,5 average 419,8±6,75*
The height of the crease	*410,3-490,7 average452,2±7,4*	*415,2-502,1average 468,8±8,01*	*423,7-489,8average 480,2±6,08*	*364,8-442,3 ўpm 407,4±7,13*
The height of the recess between the folds	*351,3-431,7average 394,5±7,39*	*353,4-433,7 average 397,2±7,39*	*346,2-461,5 average414,4±10,6*	*303,6-391,7 average354,2±8,1*
Submucosal basis	*36,3-45,4 average41,5±1,84*	*36,8-43,9 average40,7±0,65*	*38,1-46,5average 42,6±0,77*	*39,3-50,6 average44,9±1,04*
Total muscle layer thickness	*208,8-255,3 average236,0±4,3*	*181,4-223,2 average202,2±3,85*	*216,3-233,1 average226,1±1,55*	*370,6-436,9 average409,8±6,1*
Glandular discharge	*32,3-38,8 average35,9±0,6*	*33,5-38,9 average36,5±0,5*	*34,6-39,7 average37,4±0,47*	*35,3-41,4 average38,4±0,56*
The total thickness of the stomach wall	*659,9-812,5 average743,4±14,1*	*617,8-801,9 average740,9±16,9*	*716,9-796,3 average775,8±7,3*	*772,1-948,4 average885,9±16,2*

The glandular structural component of the submucosal base of the stomach is mainly composed of parietal cells, mucus-producing cells, and regenerative cells. Depending on the location of the glands, their number is more in the area of large curvature, and less in the area of small curvature. The location of the glands in the small curvature of the stomach wall is described from their area from the passage of the esophagus to the stomach to the pyloric canal. Glandular tissue in the area of transition to the duodenum is located on both sides, starting from its confluence and reaching the opening of the duodenum. The location of the glands located in the large curvature and pyloric part, as well as the location of the glands in the area of the small curvature of the stomach is characterized by their location in their own plate. In this case, glandular structures are separated from each other by sparse connective tissue (table 2).

Conclusion

Different levels of morphological changes occur under the influence of different amounts of drugs. According to the obtained data, the overall thickness of the stomach wall significantly decreased in groups IV-V due to the decrease in the size of the gastric mucosa and the mucosal base after the effect of drugs. These changes were 1.60% in the cardiac part, 3.27% in the gastric fundus, 3.33% in the body, and 3.65% in the pyloric part of laboratory animals of group IV, and 2.21% in the cardiac part of organ in laboratory animals of group V. %, changed to 3.89% in the base, 3.0% in the body of the stomach and 5.2% in the pyloric part.

2. When the adverse effects of polypharmacy with anti-inflammatory drugs were compared between the rats of the experimental control group and the rest of the groups, when the measurements of all the morphometric parameters obtained were viewed in the increasing order of the group, it was observed that the negative effects significantly increased in accordance with it and parallel to it.

3. The adverse effect of polypharmacy of anti-inflammatory drugs in the experimental group of rats in the stomach wall, mucosal base and glandular tissue was corrected in the V-group compared to the I-control group. In this case, in the cardiac part of the organ wall of group V, the height of the mucous layer of the gastric wall is 8.4%, the mucous base is 10.5%, and the glandular tissue is 37.0%, the mucous membrane is 7.60%, the mucosa is 17.8% in the bottom of the stomach. , and in the gland tissue by 29.7%, the height of the mucous membrane in the organ body by 6.52%, the base of the mucosa by 16.7% and in the gland tissue by 34.4%, the height of the mucous membrane in the pyloric area of the stomach by 6.2%, the mucosa it was found that it did not decrease by 15.9% in the base and by 32.2% in the gland tissue.

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