



Features of Medical Care Providing to Patients with Digestive Diseases in the Krasnodar Region during the COVID-19 Pandemic

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The aim of the study: optimization the medical care provision to patients with diseases of the digestive system (DD) in the Krasnodar Region during the COVID-19 pandemic.

Material and methods. The analysis of the features of the DD course in the Krasnodar Region was carried out according to the data of form C 51 "Distribution of the dead by sex, age groups and causes of death" of the Territorial Federal State Statistics Service in the Krasnodar Region, as well as monitoring the quality of medical care for patients with DD for the period from 2019 to 2021 years.

Results. During the COVID-19 pandemic, the routing of gastroenterological patients, dispensary observation and preventive measures have undergone some changes. In the structure of total mortality in the Krasnodar Region, mortality from DD was 21.6 % in 2020 and 4.0 % in 2021. The decrease in the growth of mortality rate, including from DD, in the second year of the pandemic is associated with the completed healthcare systems reformatting. The increase in hospital mortality in patients with gastric and duodenal ulcers, ulcerative colitis, and diverticular disease had a significant impact on mortality rates from DD. The decreasing number of hospitalizations was explained due to the conversion of a number of hospitals into hospitals for the treatment of patients with COVID-19. The hospitalization was mainly carried out for emergency indications and patients with a more severe course of the disease. The pandemic has increased the need for telemedicine: 378 tele-consultations on the gastroenterological profile was carried out in the Krasnodar Region in 2021.

Conclusion. Healthcare system workload in the Krasnodar Region increased significantly during the coronavirus pandemic that required a number of structural adjustments. In recent times, the regional health care is returning to the planned mode of providing medical care.

Keywords: diseases of the digestive system, pandemic coronavirus infection COVID-19

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Особенности оказания медицинской помощи пациентам с болезнями органов пищеварения в Краснодарском крае в условиях пандемии коронавирусной инфекции COVID-19

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Цель исследования: оптимизировать оказание медицинской помощи пациентам с болезнями органов пищеварения (БОП) в Краснодарском крае в условиях пандемии коронавирусной инфекции COVID-19.

Материалы и методы. Анализ особенностей течения БОП в Краснодарском крае проводился по данным формы С 51 «Распределение умерших по полу, возрастным группам и причинам смерти» Территориального органа Федеральной службы государственной статистики по Краснодарскому краю, а также мониторинга качества оказания медицинской помощи пациентам с БОП за период с 2019 по 2021 год.

Результаты исследования. В условиях пандемии COVID-19 претерпели изменения маршрутизация пациентов гастроэнтерологического профиля, диспансерное наблюдение и профилактические мероприятия.

тия. В структуре общей смертности по Краснодарскому краю смертность от БОП составила в 2020 г. 21,6 % и в 2021 г. 4,0 %, снижение темпа прироста показателей смертности, в том числе и от БОП, на втором году пандемии связано с завершившейся перестройкой системы здравоохранения. На показатели смертности от БОП оказал существенное влияние рост больничной летальности пациентов с язвенной болезнью желудка и двенадцатиперстной кишки, язвенным колитом, дивертикулярной болезнью. Сокращение числа госпитализаций вследствие перепрофилирования ряда стационаров в госпитали для лечения пациентов с COVID-19 привело к тому, что госпитализация в основном проводилась по экстренным показаниям и пациентам с более тяжелым течением заболевания. Пандемия увеличила потребности в телемедицине; так, в Краснодарском крае в 2021 г. по гастроэнтерологическому профилю было проведено 378 телеконсультаций.

Заключение. Во время пандемии коронавирусной инфекции существенно возросла нагрузка на систему здравоохранения Краснодарского края, что потребовало целого ряда структурных перестроек. В настоящее время здравоохранение края возвращается к плановому режиму оказания медицинской помощи.

Ключевые слова: болезни органов пищеварения, пандемия, новая коронавирусная инфекция, COVID-19

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Analysis of mortality structure in various regions of the Russian Federation during the COVID-19 pandemic is an important task aimed at assessing the impact of the pandemic on the health care system and the quality of medical care. The pandemic was accompanied throughout the world by the restructuring of social and economic factors in the provision of medical care, behavioral changes, including those caused by the introduction of severe restrictive measures [1, 2], and it had a number of consequences not directly related to this infectious disease itself. It was previously demonstrated that social distancing and other restrictive measures had led to decreasing in mortality from external causes, including accidents and injuries [3, 4]. At the same time, mortality from a number of chronic diseases and oncologic diseases has increased due to the growing workload on the healthcare system and closing of a number of preventive and screening programs [5, 6].

Chief gastroenterologists of the regions and federal districts of the Russian Federation under the leadership of the chief gastroenterologist of the Ministry of Health of the Russian Federation V.T. Ivashkin and members of Presidium of Russian Gastroenterological Association have regularly assessed the mortality dynamics from diseases of digestive system (DD) [7]. The prognostic value of gastroenterological manifestations of COVID-19 has also been estimated [8]. The Russian Gastroenterological Association has done a lot of work to study the clinical features of patients with COVID-19 and DD [9, 10], the impact of the pandemic on the work of the gastroenterological service [11].

At the same time, there are a number of regional peculiarities that influence on the experience of providing medical care to patients with DD in the Krasnodar Region. The purpose of the study is optimization the provision of medical care to patients with diseases of digestive system in the Krasnodar Region in the context of the COVID-19 pandemic.

Material and methods

The analysis of the features of the course of DD in the Krasnodar Territory was carried out according to the data of form C 51 "Distribution of the dead by sex, age groups and causes of death" of the Territorial Federal State Statistics Service in the Krasnodar Territory, as well as monitoring the quality of medical care for patients with DD for the period from 2019 to 2021 years.

Research results and discussion

Mortality from all causes increased by 19.9% in 2021, and was 39.2% higher compared to pre-pandemic 2019 (Table 1).

In the total mortality structure in the Krasnodar Region in 2021, the leading place is occupied by diseases of the circulatory system (32.4 %), the latter go as follows: nervous diseases (16.4 %), neoplasm (10.7 %), respiratory diseases (5.4 %), external causes (4.2 %), DD (4.0 %) and diseases of the endocrine system (1.6 %). It is important to note that the raise in mortality rates from DD also decreased by the second year of the pandemic and amounted to 4.0 % in 2021 against 21.6 % in the first year of the pandemic.

During the coronavirus pandemic, the burden on the healthcare system in the Krasnodar Region has increased significantly. During 2020–2021 the regional Ministry of Health promptly made decisions on the re-profiling of the bed fund for the treatment of patients with COVID-19 (at the peak of the pandemic, 28 infectious diseases hospitals with 7,700 beds were deployed in the region). Routing has been developed for patients with trauma, surgical conditions, cardiovascular, psychiatric conditions, tuberculosis, patients in need of dialysis or specialized planned medical care, as well as for patients with DD. At the beginning of 2022, due to the improvement of the epidemiological situation, 10 medical

Table 1. Dynamics of overall mortality and mortality from diseases of digestive system in the Krasnodar Region for the period 2019–2021

The cause of the death	2021	2020	2019	Deviation, pers. by 2019	Deviation, % by 2019	Deviation, pers. by 2020	Deviation, % by 2020	Deviation, Russia. % by 2020
All causes	97.220	81.118	69.836	27.384	39.2	16.102	19.9	15.0
Diseases of digestive system	3.903	3.754	3.211	692	21.6	149	4.0	1.6

organizations of the region went back to a planned mode of operation.

Mortality rates from DD were significantly affected by the increase in hospital mortality of patients with DD, which increased by 0.8 %, including patients with gastric and duodenal ulcer (by 2.2 %), ulcerative colitis (by 0.5 %), diverticular disease (by 4.1 %) (Table 2). The reduction in the number of hospitalizations due to restrictive measures and the conversion of a number of hospitals into hospitals for the treatment of patients with a new coronavirus infection had led to hospitalizations to be mainly carried out for emergency indications.

Because of the conversion of a number of clinics into infectious diseases hospitals, the load on the outpatient service and the requirements for dispensary observation of patients have increased. According to the Ministry of Health data, all patients diagnosed with duodenal ulcer and stomach ulcer for the first time are taken for dispensary observation. 70 % of patients with liver diseases and 65 % with pancreatic diseases are registered at the dispensary (Table 3). At the same time, in comparison to 2019, the number of dispensary patients with diseases of the liver and pancreas decreased by 5.3 % and 1.2 %, respectively, due to restrictive measures, suspension of planned outpatient and preventive help.

The increase in mortality from DD in the 1-st year of the coronavirus pandemic makes it necessary to strengthen preventive measures aimed at informing the population about risk factors for the development of gastroenterological diseases. In 2020,

the number of such events increased by 2.9 %, because of increasing of publications in the media (by 2.1 times), an increase in social advertising (by 2.3 times). On the other hand, the number of television programs and population surveys was decreased (Table 4). In 2021, there was a decrease in the number of preventive measures taken to inform the population about risk factors of the development of DD by 20.6 % compared to 2020 so as the emphasis was placed on the prevention of coronavirus infection COVID-19, especially implementation of vaccinations.

As soon as epidemiological situation was stabilized, and in order to identify chronic non-infectious diseases early, as well as risk factors for their development in the Krasnodar Region, mass preventive actions and projects were resumed in March 2022 (“Health Day in the Kuban”, “Kuban – the land of healthy people”, “Kuban against cancer”, “Kuban – regardless”, “Kuban – the land of centenarians”). Municipalities with the worst results of the main causes of death, medical examination, dispensary observation and staff shortages are planned for outreach events. During the period of returning the health care system to the planned provision of medical care, including to gastroenterological and hepatological ones, the emphasis should be placed on strengthening measures for medical examination of the population who have had COVID-19. Recent meta-analyses have shown that the incidence of acute liver injury in hospitalized patients with COVID-19 ranged from 24 % to 27 %, and chronic liver disease developed in 2 % of those who recovered [12, 13].

Table 2. Hospital mortality (%) in diseases of the digestive system (by nosological groups)

Diseases of the digestive system	ICD-10	2019	2020	2021	Deviation 2021/2019
	K00–K92	2.4	3.4	3.2	0.8
Ulcer of the stomach and duodenum	K25–K26	6.9	9.5	9.1	2.2
Crohn’s disease	K50	3.8	4.4	3.3	-0.5
Ulcerative colitis	K51	2.0	2.4	2.5	0.5
Diverticular bowel disease	K57	3.2	5.3	7.3	4.1
Liver disease	K0–K76	13.7	17.2	17.4	3.7
– cirrhosis	K74	17.9	21.6	22.0	4.1
Diseases of the gallbladder, biliary tract	K80–K83	0.7	1.2	0.9	0.2
Diseases of the pancreas	K85–K86	1.3	2.1	2.0	0.7
Acute pancreatitis	K85	3.1	4.0	3.6	0.5

Table 3. Indicators of dispensary observation of patients with diseases of the digestive system in the Krasnodar Region for the period 2019–2021

Categories of patients	2019	2020	2021	Deviation 2021/2019
The proportion of patients taken for dispensary observation among those registered for the first time with a diagnosis of peptic ulcer of the stomach and duodenum (K25–K26), %	100	100	100	0
The proportion of patients taken for dispensary observation among those registered for the first time with a diagnosis of liver disease (K70–K76), %	73.2	69.9	67.9	-5.3
The proportion of patients taken for dispensary observation among those registered for the first time with a diagnosis of pancreatic disease (K85–K86), %	65.9	66.2	64.7	-1.2

Table 4. Monitoring the effectiveness of measures to reduce mortality in patients with hepatic diseases in 2019–2020

Number of measures taken to inform the population about the risk factors for the development of diseases of the digestive system	2019	2020	2021
Total	90.791	93.460	72.091
- media publications	609	1.258	1.216
- social advertising, including a video	350	806	777
- television programs	121	100	121
- population surveys	53.888	46.088	41.312

Telemedicine is actively developing in the Krasnodar Region in 2021, 378 tele-consultations were held by specialists from leading regional medical organizations in the Gastroenterology profile. These data are in line with global trends. Thus, according to M. Serper et al. [14], in the United States during the pandemic, 94 % of practicing gastroenterologists performed teleconsultations, compared with 5 % of specialists 2 weeks before the onset of the COVID-19 pandemic.

Conclusion

The analysis of the epidemiological situation in the Krasnodar Region with the quality of gastroenterological care allows formulating proposals for reducing mortality from DD in 2022:

1. Active introduction of preventive medical examinations and early detection (screening) of chronic diseases of the digestive system and risk factors for their development.
2. Carrying out an in-depth medical examination, including an assessment of the function of the liver and upper gastrointestinal tract.

3. Active explanatory work with patients about the risk factors for the development of DD, as well as the introduction of measures to reduce them.

4. Remote counseling of patients with diseases of the digestive system.

5. Reopening schools for patients with diseases of the digestive system (schools for patients with gastroesophageal reflux disease, peptic ulcer, inflammatory bowel disease).

6. Development and implementation of interdisciplinary algorithms for joint tactics of patient management by surgeons and endoscopists, specialists diagnostic imaging for the timely identification of indications for surgical treatment of complicated and precancerous forms of DDS.

7. Raising the awareness of primary care physicians in the field of the specifics of providing medical care to patients with diseases of the digestive system.

8. Introduction into the work of primary care medical organizations of national clinical guidelines for the treatment of DD with constant monitoring of their application.

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