Epidemiology of Risk Factors for Post-Covid-19 Associated Digestive Diseases by Occupational Type and Ethnic Group

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Abstract

The fact that the flow of studies and publications devoted to the Covid-19 pandemic has increased and continues to increase worldwide is evident from the literature review or the reader-researcher may conclude that this is an indication that there are still "mysteries" in the Covid-19 infection.

Among these problems, the issue of studying the epidemiology, prevention and radical improvement of treatment methods for Post-Covid-19-associated digestive system diseases is also a cross-cutting and acute medical and social problem.

Preventive gastroenterology has begun to develop and find its place in modern medicine, for example, in the case of the Post-Covid-19 population, and the scope of scientific and priority views on reasonable guidelines and recommendations for its improvement has increased.

They should be taken into account when determining the topics and directions of scientific research.

In our opinion, a very scientific and practical conclusion is drawn: the level of study of modern epidemiological, clinical, pharmacotherapeutic and prophylactic aspects of post-Covid-19 associated digestive system diseases does not meet the requirements. There is a need and a need to analyze and study the existing data from the perspective of preventive medicine.

There is a lack of scientific research on the development of radically improved programs for the prevention and treatment of post-Covid-19 associated digestive system diseases and their justification.

	The expansion and implementation of such meaningful and targeted regional studies with an emphasis on them is of medical, social and economic importance.
Keywords: COVID-19, Post-Covid-19, associated digestive system diseases, epidemiology, prevention, treatment.	

Introduction

Currently, there is very little information on the epidemiology, clinical features, prevention and treatment of Post-Covid-19 Associated Gastrointestinal Diseases (Post-Covid-19 Associated Gastrointestinal Diseases) and none at all in Uzbekistan and, in particular, in the Fergana Valley. According to the scientific results obtained in clinical trials, there is every reason to believe that patients with digestive system diseases may be a risk group for severe disease and unfavorable prognosis when infected with the SARS-CoV-2 virus. [1].

Post-Covid-19 Associated Gastrointestinal Diseases can occur in two ways: first, through the direct effect of the virus itself, and second, in connection with drug therapy used to treat coronavirus infection. Therefore, it is necessary to take into account that in this type of disease (which reaches 40%) there is an iatrogenic risk factor, which makes it more beneficial to seek treatment methods from natural and folk medicine.

The target cells that the SARS-Covid-2 virus can enter are located in the mucous membranes of the upper respiratory tract, stomach and intestines, through which the gastrointestinal tract (GI) is damaged by viral infection. In particular, getting into intestinal cells, the virus increases the permeability of the intestinal wall, and thus reaches the liver, where it also causes inflammation. Extrapulmonary manifestations of COVID-19 are observed and even prioritized by the corresponding GI: Post-COVID-19 Ass HAC "the most common symptoms" (fever, cough, shortness of breath, myalgia and fatigue) and "relatively less common symptoms" (loss of taste and smell, anorexia, diarrhea, nausea, vomiting, abdominal pain) are detected in 2/3 of infected patients; 50.5% of patients are hospitalized; Diarrhea occurs in every 3rd patient; vomiting and abdominal pain are noted in 3.9 and 3%, respectively; 25% of patients develop isolated gastrointestinal symptoms; gastrointestinal and respiratory symptoms occur simultaneously in every 4th patient; diarrhea appears as the first symptom of COVID-19 in every 5th patient, lasts from 1 to 14 days, and the frequency of defecation reaches 4-6 times a day; as a sign of complete recovery from the disease, in such patients, it is necessary to take into account the negative virological analysis for SARS-COV-2 in the stool [2].

Early detection, prevention and safe treatment of this clinical manifestation in the post-COVID-19 Ass HAC population, which is characteristic of the shift from the traditional COVID-19 or Covid syndrome descriptions, is of great medical, economic and prognostic importance. Patients often present late and are diagnosed with Post-COVID-19 syndrome, which increases the incidence of mortality in the population. Therefore, it is advisable to conduct research in this area and, in particular, to prioritize epidemiological studies, which have a high potential for early detection of Covid-19 and/or POST-COVID-19 syndrome at the pre-nosodic stage, compared to clinical studies. To date, this scientific direction has not been widely implemented, and as a result,

symptoms of damage to the digestive system in the new Covid-19/POST-COVID-19 are often overshadowed by respiratory symptoms and should not be ignored.

Purpose of the study. The aim of the study is to study the epidemiology of POST-COV-19-associated digestive system diseases, to radically improve prevention and treatment methods.

Material and Methods

The object of the study was 1605 people aged ≥ 48-60 years who had experienced Covid-19 infection and were registered and monitored in Fergana city polyclinics in 2022-2024.

The subject of the study was the results of blood serum and special questionnaires (questionnaires) to conduct epidemiological, clinical, biochemical and physical analyzes of the Post-Covid-19 population, to determine the effectiveness of screening and prevention methods.

Research methods. The study used questionnaire, biochemical, general clinical, physical and statistical methods. Anthropometric measurements, which assessed serum lactate dehydrogenase, interleukin, S-reactive protein, lipid spectrum indicators, and the WHO (1997) criteria were used to analyze common risk factors.

Results

The prevalence of risk factors for Post-Covid-19 associated gastrointestinal diseases in mental and physical laborers and pensioners was also studied, and a number of features were identified. They are presented in Table 1 and Figure 1.

The prevalence of risk factors in these three population groups is as follows: smoking 5.1%, 3.5% and 0.0%; hereditary factors 17.9%, 13.3% and 14.3%; physical inactivity 7.7% and 13.2% and 14.3%; low consumption of fruits and vegetables 12.8%, 6.8% and from 0.0%, mental factor from 20.5%, 13.4% and 14.3%; dyslipidemia from 17.9%, 14.0% and 14.3%, obesity from 5.1%, 9.2% and 28.6%, GKa from 5.1%, 13.0% and 0.0%; GMa from 7.69 %, 13.5 % and 14.3 %.

Table 1 Prevalence of risk factors for post-COVID-19 associated gastrointestinal diseases in different occupational groups

| №	Inspection team	Smoking		Hereditary factor		Hypodynamia		ICFVP		Spiritual factor		dyslipidemia		Obesity		GKa		GM		Total risk factors	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Post-covid-19 population engaged in intellectual work	2	5,1	7	17,9	3	7,7	5	12,8	8	20,5	7	17,9	2	5,1	2	5,1	3	7,69	39	0,6
2	Post-covid-19 population engaged in physical work	214	3,5	802	13,3	800	13,2	414	6,8	813	13,4	846	14,0	557	9,2	787	13,0	816	13,5	6049	99,2
3	Pensioner or disabled population Post-covid-19 population	0	0,0	1	14,3	1	14,3	0	0,0	1	14,3	1	14,3	2	28,6	0	0,0	1	14,3	7	0,1
	Statistical indicators : RR=1,15; ИИ=(1,24–1,07); X²=85,3; r=0,99; p<0,05																				
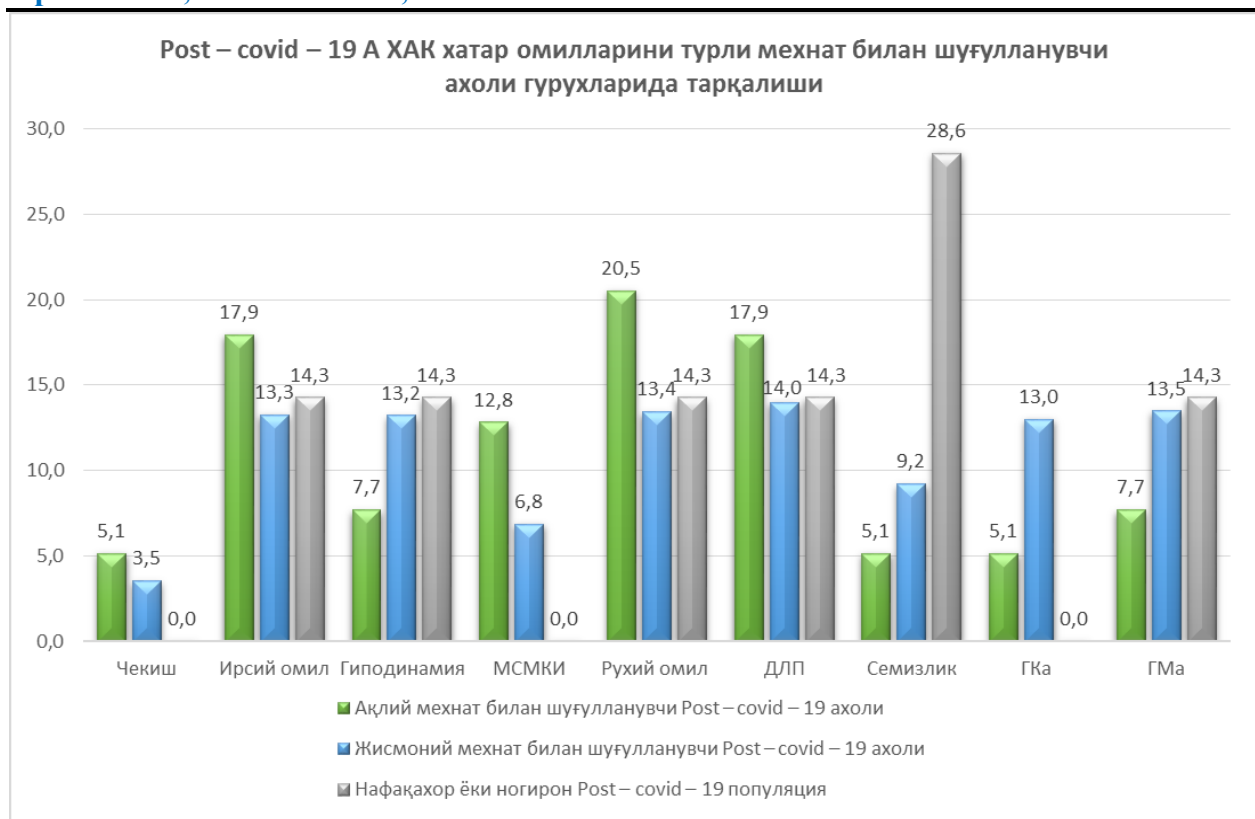
Figure 1. Characteristics of the formation of risk factors for post-COVID-19 associated gastrointestinal diseases under the influence of the type of work

Table 2 Prevalence of risk factors for post-COVID-19 associated gastrointestinal diseases by ethnic group

| №	Inspection team	Risk factors																		
		Smoking		Hereditary factor		Hypodynamia		ICFVP		Spiritual factor		dyslipidemia		Obesity		GKa		GM		Total risk factors	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Post-Covid-19 ethnic aboriginal population ≥18-60 years old (Uzbeks)	238	3,73	800	12,5	789	12,36	774	12,1	812	12,7	839	13,1	543	8,51	781	12,2	806	12,6	6382	98,5
2	Post-Covid-19 ethnic immigrant aboriginal population ≥18-60 years old (Russians and representatives of other nationalities)	6	6,12	9	9,2	14	14,29	9	9,18	9	9,18	14	14,3	16	16,3	8	8,16	13	13,3	98	1,5
Statistical indicators : RR= 1,07 ; ИИ= (1,26-0,92); X2=12,55 ; r++=0.992; P>0,05																				
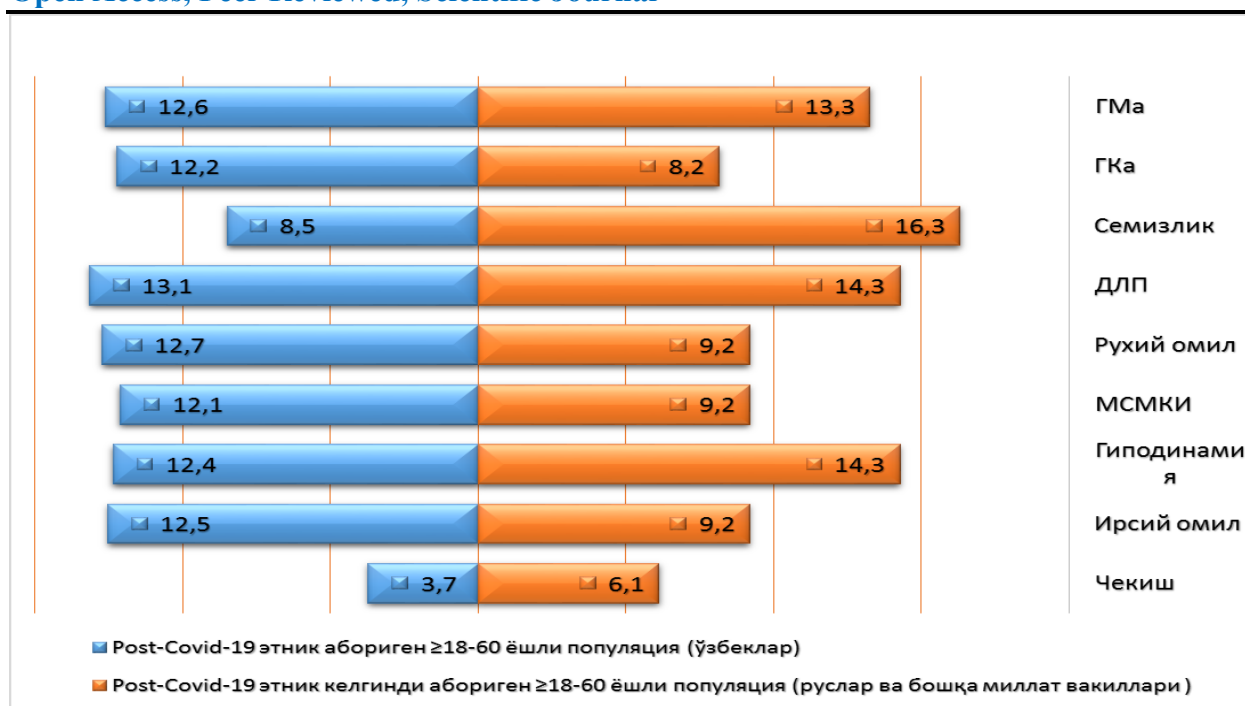
Figure 2. Characteristics of the formation of risk factors for post-COVID-19 associated gastrointestinal diseases under the influence of ethnic factors

The prevalence of total risk factors, which are the effects of various work activities, is 0.6% in people engaged in mental labor, 99.2% in people engaged in physical labor, and 0.1% in pensioners/disabled people [RR = 1.15; UU = 1.24 – 1.07; X2 = 85.3; r++ = 0.99; P> 0.05].

The prevalence of risk factors in the Aboriginal and immigrant population groups ≥ 18–60 years of age with Post-Covid-19 associated gastrointestinal diseases is confirmed as follows (Table 2 and Figure 2): smoking 3.73% and 6.12% (P<0.05), hereditary factor 12.5% and 9.2% (P<0.05), physical inactivity 12.36% and 14.29% (P<0.05), low fruit and vegetable consumption 12.1% and 9.18% (P<0.05), psychological factor 12.7% and 9.18% (P<0.05), dyslipidemia 13.1% and 14.5% (P<0.05), obesity 8.51% and 16.3% (P<0.05), hypokalemia by 12.2% and 8.16% (P<0.05) and hypomagnesemia by 12.6% and 13.3% (P<0.05). While all risk factors were significantly more common in the indigenous Covid-19 population (98.5%), they were rarely observed in the Russian-speaking immigrant population (no more than 1.5%) [RR = 1.07; UU = 1.26 – 0.92; X2 = 12.55; r++ = 0.992; P>0.05].

Such epidemiological conditions are undoubtedly important for early initiation and long-term continuation of preventive measures.

Conclusion

Risk factors for post-Covid-19 associated gastrointestinal diseases are characterized by the following frequencies: smoking 3.8%, genetic factor 12.5%, physical inactivity 12.4%, low fruit and vegetable consumption 12.1%, psychological factor 12.7%, dyslipoproteinemia 13.2%, obesity 17.2%, hypokalemia 24.4% and hypomagnesemia 25.3%. Total risk factors are detected at frequencies of 49.7% in women and 50.3% in men.

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