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CHARACTERISTICS OF THE DEGREES OF SEVERITY OF THE COURSE OF ACUTE INTESTINAL INFECTION IN ELDERLY PATIENTS WITH COVID-19

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The article discloses the characteristics of the degrees of severity of acute intestinal infection in elderly and senile patients with COVID-19.
The aim of the article *is to substantiate the characteristics of the degrees of severity of acute intestinal infection (AII) in elderly and senile patients with COVID-19.*
Materials and methods. *Conditionally pathogenic microorganisms were detected in the patients of the study group by the bacteriological method. The WHO age classification was used to estimate age. The presence of the definition of a coronavirus infection and comorbid conditions was ascertained based on the following methods: selection of indicators of the immunoenzymatic method, PCR test, measurements the degree of saturation of arterial blood with oxygen by pulse oximetry, heart rate, temperature marks, questionnaires NEWS and ABCD for monitoring the dynamics of the disease in patients. Dehydration scale (CDS) was used to determine the severity of acute intestinal infection.*
The Charlson comorbidity index was used to characterize comorbid conditions. Statistical methods were used: the Kolmagorov-Smirnov test, the non-parametric Wald Wolfowitz test. The obtained results were performed using the Statistica 13 Trial program. The severity index of COVID-19 has been determined, with the help of which it is possible to identify and sort patients to identify complications and a quick algorithm for the doctor's actions and the conditions of the intensive care unit.
The results*. Several indicators of the modified NEWS questionnaire were determined, which confirm that the age of patients ≥65 years is associated with a more severe course of the disease. It has been established that such comorbid conditions as: damage to peripheral vessels, dementia, the presence of peptic ulcer disease are associated with a milder course of GKI against the background of COVID-19. The incidence of diabetes without damage to the limbs is reliably associated with a more severe course of the disease. Analyzing the indicators of the ABCD system, namely: age of patients, laboratory and instrumental tests, pantry poor conditions, risk factors associated with the severity of the course of COVID-19 were assessed.*
Conclusions. *The total result of the Charlson comorbidity index was determined in patients with AII on the background of COVID-19. The results confirm that such patients have a higher probability and risk of mortality.*
A direct moderate correlation has been proven between the total result of the NEWS questionnaire and the course of AII, which indicates a higher frequency of the formation of severe forms of the latter in the presence of higher values of the questionnaire and the corresponding more severe course of COVID-19. The results of the severity index of COVID-19 allow us to conclude that the data are associated with an increase in the severity of acute intestinal infection in elderly patients
Keywords: *acute intestinal infection, elderly patients, COVID-19, bacteria, comorbid conditions, diarrhea*

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1. Introduction

There are many contradictions regarding the features of the course of an acute intestinal infection in elderly and senile patients with COVID-19, depending on the severity of the condition of the human body. Most scientists claim that the characteristics of the severity of acute intestinal infection (AII) in elderly and senile patients with COVID-19 are due to the action of biologically active substances of bacteria in the human body, the study of which allows predicting the preventive selection of metabolic interventions in the intestinal microbiome to prevent the severity of the condition [1]. Scientists emphasize several related problems caused by the uniformity of clinical manifestations of viral infection in certain conditions of human infection (reduction of the body's reactivity, favourable factors for the development of conditionally pathogenic microflora) [2]. On the other hand, the features of the course of the diarrheal syndrome are shown for each of the age categories. Characterizing viral diseases, scientists propose a characterization of severe respiratory viral infections based on new evidence and paradigm shifts [3]. Features of the course of severe

pneumonia in the context of diagnostic prognosis are shown [4]. Against the background of this disease, it is worth investigating treatment algorithms and clinical implementation with the results of their effectiveness. Scientists offer a package of pre-hospital care for primary symptoms of pneumonia, as well as schemes of care for acute respiratory syndrome in intensive care units [5, 6]. The method of electronic clinical support in the treatment and support of patients in the emergency department with pneumonia caused by the COVID-19 coronavirus infection is being practically investigated [7].

The content of the impact on the severity of acute intestinal infection and its characteristics in elderly and senile patients with COVID-19 remains unknown, which will be discussed in the article.

The aim of the research is to substantiate the characterization of the degree of severity of acute intestinal infection in elderly and senile patients in the case of its development against the background of the underlying pathology of COVID-19.

2. Materials and methods

The study of the degrees of severity of acute intestinal infection in elderly and senile patients with COVID-19 was conducted in the infectious department of the communal non-commercial enterprise "Vinnytsia Clinical Multidisciplinary Hospital" of the Vinnytsia City Council in 2020–2021. The research group included 71 people, 29 (40.85 %) men and 42 (59.15 %) women. The average age of the examined was 71.48±7.53 years. The vast majority of those examined – 57 (80.43 %) were elderly (60–74 years old), 14 (19.57 %) patients – senile (74–89 years old). The WHO age classification was used to estimate age. All medical and diagnostic processes were carried out exclusively with the informed consent of the patients. Patients were admitted to the infectious disease hospital with the following clinical symptoms: general weakness, increased body temperature, shortness of breath, catarrhal phenomena, lack of appetite. There were also digestive disorders, namely: vomiting, abdominal pain, loose stools, mostly without pathological impurities. According to the indicators of the immunoenzymatic method and the PCR test, all respondents were diagnosed with COVID-19.

This study and its materials were reviewed by the Bioethics Committee of Vinnytsia National Medical University named after E. Pirogov and confirmed by an excerpt from protocol No. 4 dated May 19, 2022 and do not contradict the main biotic norms of the Helsinki Declaration adopted by the General Assembly of the World Medical Organization.

The degree of severity of acute intestinal infection in the studied group of patients was determined using clinical dehydration scale (CDS).

The bacteriological research method was used in connection with clinical symptoms, as well as to exclude acute intestinal infections caused by pathogenic microorganisms (*Salmonella, Shigella*), etc. Treatment of patients was carried out according to the protocol for the provision of medical assistance for the treatment of the coronavirus disease (COVID-19).

This research method determined the presence of an acute intestinal infection in the examined patients, among whom: 38 (53.52 %) people were found to have enteropathogenic *Escherichia coli*, which became the main cause of AII, 19 (26.77 %) people were found to be *Proteus bacteria*, in 16 (22, 54 %) people – *Pr. mirabilis*, in 16 (22.54 %) people – *Pr. vulgaris*, *Citrobacter freundii* was isolated in 8 (11.27 %) people, *Enterobacter aeruginosa* - in 8 (9.86 %) people, in 4 (5.63 %) people - *Kl. Pneumonia*, bacterium *St. aureus* was diagnosed in 23 (32.39 %) people, and representatives of the *Pseudomonadaceae family* were found in 10 (14.09 %) people. Considering the leading etiological factor of the underlying disease, all patients were divided into 3 groups. The first group included 38 (53.52 %) patients in whom AII caused by enteropathogenic bacilli was confirmed. The second group included 10 (14.09 %) patients with this pathology caused by Pseudomonas *bacteria*. The third group included 23 (32.39 %) patients with AII caused by *St. aureus*. All patients with acute intestinal infection had similar symptoms: general weakness, diarrhea, decreased appetite, abdominal pain. All patients had signs of bilateral COVID-19 pneumonia, confirmed by CT data.

To characterize comorbid conditions, the Charlson comorbidity index was used, considering the manifestation of the frequency of the number of concomitant diseases. Several such comorbid conditions were identified: diabetes, cardiovascular diseases, malignant neoplasms, gastric ulcer, bronchial asthma, etc. Against the background of the examination, a total indicator of comorbidity of diseases in patients was formed. Considering these data, there is a possibility of determining the prognosis regarding the risk of mortality of the patients of the studied group. According to the ABCD scale, changes in laboratory indicators were determined considering the degree of severity of AII caused by opportunistic pathogens with COVID-19. This system provides an opportunity for early identification of examinees with complications and the probability of developing severe forms of the course of the disease in the context of diagnosis. A modified version of the News questionnaire makes it possible to determine the degree of severity of COVID-19 and the risk of developing complications. The severity index of COVID-19 was determined, according to the etiological characteristics of which the degrees of severity of the course of AII in elderly and senile patients with COVID-19 were revealed. The Kolmogorov-Smirnov test was used in this study. According to the test, the distribution of the sample differed from the norm (>0.05). The non-parametric Wald-Wolfowitz test was used to assess the difference in independent populations. Results are shown as mean square ± mean (M±SD). Statistical analysis was performed using the Statistica 13Trial program. Correlation was carried out by the Tau-Kendall method.

3. Research results

The patients of the study group had defined comorbid diseases with an acute intestinal infection against the background of COVID-19. In the vast majority of the examined two groups – 34 (47.89 %) 2 comorbid conditions were recorded, in 15 (21.12 %) – 4, in 13 (18.31 %) – 3 concomitant diseases. In 9 (12.68 %) of the examined, 1 concomitant disease was determined. The difference in the frequency of established comorbid

diseases in patients considering the severity of the course of AII is statistically insignificant (p>0.05).

Considering the number of concomitant diseases and their frequency, which were determined in patients with AII, the presence of comorbid conditions was noted. *Peripheral vascular disease* was diagnosed in 44 (61.97 %) subjects with a severe course of AII against the background of COVID-19 and in all patients with an average degree of severity. A statistically significant difference between the indicators, considering the severity of the acute intestinal infection, was not proven (p=0.10), but the presence of a weak inverse correlation between the indicators was confirmed (τ=–0.20, p=0.02).

In 4 (5.63 %) patients, signs of *dementia* with an average degree of severity of AII against the background of COVID-19 and in 3 (6.00 %) persons with a severe course of the disease were recorded. The difference between the frequency of these indicators was unreliable, which indicates the lack of influence on the severity of the condition of the human body. In this group, the presence of an inverse weak correlation was also determined between the studied indicators (τ=–0.20, p=0.01).

Gastric ulcer disease was determined in 1 (4.76 %) patient with an average degree of severity of AII, while in patients with a severe course of acute intestinal infection against the background of COVID-19, this pathology was not detected, the difference between the indicators is unreliable (p=0.13).

A statistically significant difference (p=0.03) was determined between the indicators of diabetes without limb damage, which was recorded in 10 (20.00 %) patients with severe acute intestinal infection. It was not established in patients with an average degree of severity.

In the majority of diseases such as *myocardial infarction, heart failure, transient disorders of cerebral circulation, CVI, bronchial asthma, chronic non-specific lung diseases, CVI with hemiplegia, CKD with a creatinine level of more than 3 mg %, DM with limb damage and chronic leukemia* were not proven a statistically significant difference, which indicates the absence of a reliable correlation between the indicators.

Next, the total result of the Charlson comorbidity index was determined in the studied group of patients according to the condition of average severity, which was 5.19±1.81 points and 5.58±1.84 points – in patients with a severe course of the disease between the indicators of the severity of the condition according to AII on against the background of COVID-19, the difference is statistically insignificant (p=0.39). The value of the Charlson comorbidity index (3–5 points) was determined in most patients of both groups - 14 (66.67 %) with an average degree of severity of AII and 27 (54.00 %) – in persons with a severe course of the disease. The maximum values of the Charlson comorbidity index (≥ 6 points) were obtained by most patients – 23 (46.00 %) persons with a severe course of the disease and 7 (33.33 %) persons with an average degree of severity of an acute intestinal infection.

According to the ABCD system, considering the degree of severity of AII, risk factors associated with the severity of the course of COVID-19 were assessed, among which the main characteristic is determined by the age of patients over 50 years old (71 (100 %)). The age category of subjects with an average degree of severity of an acute intestinal infection was 69.00±7.18 years and 72.52±7.50 years – in patients with severe forms of this disease, the difference between which is also unreliable (p=0.07), which indicates the age-related nature of the disease.

When evaluating laboratory indicators, it is necessary to indicate a significant relationship between them and the degree of severity of AII against the background of COVID-19.

Signs of *lymphopenia* were recorded in 8 (38.10 %) patients of the group with an average severity of acute intestinal infection, as well as in 28 (56.00 %) patients with a severe form of the disease. The difference between the indicators is statistically insignificant (p=0.17), which indicates an increase in the frequency of lymphopenia indicators < 1500/mm³, but this difference is insignificant.

Signs of *bilateral COVID-19 pneumonia* were recorded in all patients of the study group and confirmed by a CT scan. Diabetes mellitus was diagnosed in 12 (16.90 %) patients with severe acute intestinal infection. In patients with an average degree of severity, unlike the previous ones, this factor was not recorded, which is evidenced by a reliably weak correlation (τ=0.29, p=0.0003). *Hypoxemia* was diagnosed in 31 (62.00 %) subjects with a severe course and 5 (23.81 %) subjects with an average severity of the disease. The difference between the indicators is statistically significant at the p=0.004 level. An inverse moderate correlation (τ=-0.33, p=0.00004) between the degree of severity of an acute intestinal infection and the value of SpO^2 was also proven.

The evaluation of the total results (Table 1) according to the ABCD system in 11 (52.38 %) patients with an average degree of severity of acute intestinal infection and 10 (20.00 %) persons with a severe course of acute intestinal infection determines insignificant values of the total results (0–4 points). The difference between the indicators is statistically significant (p=0.007).

Table 1

Cumulative results of the ABCD system of examined patients with COVID-19, considering the degree of severity of AII

Total result	Severity of acute intestinal infection		P
	average (n=21)	mild (n=50)	
M±SD, points	4.52±1.12	5.62±1.37	0.0009
0–4 points	11 (52.38 %)	10 (20.00 %)	0.007
5–8 points	10 (47.62 %)	39 (78.00 %)	0.01
>8 points	0 (0.00 %)	1 (2.00 %)	0.54

A significantly lower frequency of total results (0–4 points) was established in patients with a more severe course of AII on the background of COVID-19 (τ=–0.32, p=0.00007). An increase in the frequency of moderate total results (5–8 points), which were recorded in 39 (78.00 %) patients with a severe form and 10 (47.62 %) persons with an average degree of severity of AII, is reliably associated with a severe course of acute intestinal infection against the background of COVID-19 (τ=0.30, p=0.0002). Values > 8 points were recorded only in 1 (2.00 %) patient with a severe acute intestinal infection.

According to the modified NEWS questionnaire, factors associated with the course of COVID-19 were assessed in the examined patients, considering the severity of the acute intestinal infection. It was found that age under 65 years is reliably associated with a mild course of AII (τ=–0.19, p=0.02), while age ≥ 65 years is associated with a severe course of the disease (τ=0.19, p =0.02). In 37 (74.00 %) patients with a severe course of AII and 7 (33.33 %) persons with an average severity of the disease, indicators of SpO^2≤91 % (at the level of p=0.001) were recorded. An inverse moderate correlation between the presence of SpO^2 values ≥96 % and the degree of severity of acute intestinal infection against the background of COVID-19 was proved (τ=–0.36, p=0.000009), which indicates a higher frequency of SpO^2 values ≥96 % in patients with a mild course of AII with COVID-19.

Additional oxygen support was applied to patients of both groups, 16 (76.19 %) patients with an average degree of severity and 48 (96.00 %) individuals with a severe form of AII. Evaluating temperature indicators (38.1–39.0 °C (τ=0.24, p=0.004)) proved that in the presence of their increase, the frequency of severe forms of acute intestinal infection with COVID-19 increases. Temperature indicators in the range of 36.1–38.0 °C are associated with a mild course of the disease (τ=–0.24, p=0.004).

The average total result of the NEWS questionnaire in subjects with a severe course of acute intestinal infection is 7.94±2.32 points and 5.52±2.38 points in patients with an average degree of severity of the disease. A statistically significant difference between the indicators was shown, considering the degree of severity of the acute intestinal infection (p=0.0003). A direct moderate correlation between the course of an acute intestinal infection and the presence of the total result obtained according to the NEWS questionnaire was proved (Fig. 1). This indicates a significantly higher frequency of the formation of severe forms of the latter in the presence of higher questionnaire values and a more severe course of COVID-19 (τ=0.38, p=0.000003).

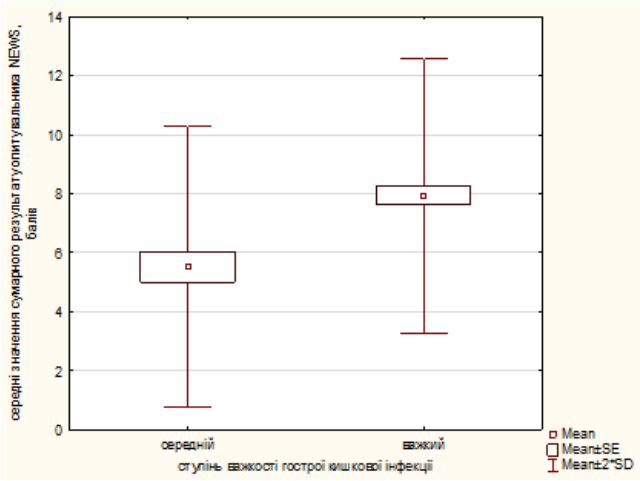

Fig. 1. Diagram of average values of the total result of the NEWS questionnaire of examined patients with COVID-19 and AII, considering the degree of severity of the latter

Considering the total results of the modified NEWS questionnaire (Table 2), 38 (76.00 %) and 7 (33.33 %) patients with an average degree of severity according to the scale values of 7 points and more were recorded in patients considering the severity of AII. A high risk was established with a significantly higher frequency in respondents with a severe course of acute intestinal infection, in contrast to the results of patients with an average degree of severity of the disease (p=0.0007). The presence of questionnaire values ≥ 7 points is associated with a more severe course of acute intestinal infection with COVID-19, confirmed by a direct moderately correlated relationship between indicators (τ=0.40, p=0.000001).

Total results (5–6 points) were determined in 11 (52.38 %) patients with an average degree and 10 (20.00 %) persons with severe forms of the disease, which proves a statistically significant difference between the indicators (p=0.007). The presence of the total values of the questionnaire (5-6 points) is reliably associated with a mild course of acute intestinal infection, which causes an inverse moderate correlation between the indicators (τ=–0.32, p=0.00007).

Table 4

Cumulative results of the NEWS system of examined patients with COVID-19, considering the degree of severity of AII

Total result	Severity of acute intestinal infection		P
	average (n=21)	mild (n=50)	
M±SD, points	5.52±2.38	7.94±2.32	0.0003
0 points	1 (4.76 %)	0 (0.00 %)	0.13
1-4 points	2 (9.52 %)	2 (4.00 %)	0.37
5-6 points	11 (52.38 %)	10 (20.00 %)	0.007
≥ 7 points	7 (33.33 %)	38 (76.00 %)	0.0007

Thus, an analysis of the risk factors required for the calculation of the severity index of COVID-19 in elderly and senile patients with acute intestinal infection and COVID-19 was performed. The relationship between the age of patients over 65 years and the severe course of an acute intestinal infection was proven, which confirms the presence of a direct correlation between the indicators (τ=0.19, p=0.02). In the groups of senile and elderly patients with COVID-19 and AII, considering the degree of severity of the latter, no statistically significant difference was proven by gender indicators (p=0.46). Analyzing the comorbid diseases that were detected in patients with a severe course of acute intestinal infection, the presence of diabetes was determined with a significantly higher frequency of 12 (24.00 %), compared to the group of people with an average degree of severity of the disease, where a similar condition was not registered in any case (p=0.01).

X-ray signs of bilateral COVID-19-associated lung infiltration were determined in all examined patients (p=1.0). SpO^2 values ≤91 % were determined in most patients with a severe course – 34 (68.00 %) and 7 (33.33 %) patients with an average degree of severity of an acute intestinal infection. A significantly higher frequency of SpO^2 values ≤91 % in patients with a severe course of acute intestinal infection compared to the data of patients with an average degree of severity was proven (p=0.003). The presence of high pulse values of 111–130 min. indicates a reliable association with a severe course of an acute intestinal infection (τ=0.18, p=0.03). Pulse rates are set in the range of 51–90 min. associated with a mild course of the disease (τ=–0.18, p=0.02).

Analyzing the total results of the severity index of COVID-19, significantly higher values were recorded in patients with a severe course of acute intestinal infection – 11.62±2.43 points, and in patients with an average degree of severity of the disease – 9.00±2.35 points (p=0.0001) (Fig. 2).

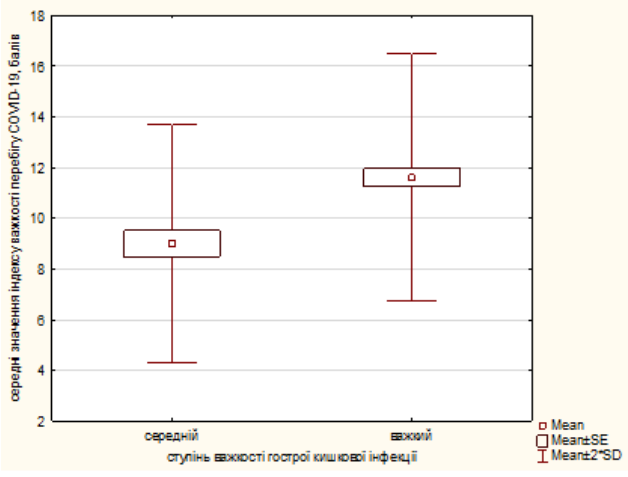

Fig. 2. Diagram of average values of the total result of the severity index of COVID-19 in patients considering the degree of severity of AII

Based on the results of the received data and the overall result, the clinical risk of the disease, as well as the level of medical care, was assessed. A high risk (6–7 points) was established in 7 (33.33 %) patients with an average severity of acute intestinal infection and 2 (4.00 %) patients with a severe course. The difference between the indicators is statistically significant (p=0.0002). The presence of critical risk was established, which is reliably associated with the severe course of acute intestinal infection in patients with COVID-19 (τ=0.36, p=0.00001). In 47 (94.00 %) patients with severe and 14 (66.67 %) with moderate degrees of severity, the value of the severity index of COVID-19 ≥ 8 points, which corresponded to the critical level, was observed. The difference between the indicators is statistically significant (p=0.0007).

4. Discussion of research results

Analyzing the results of the development of comorbid conditions in the patients of the study group in terms of determining their frequency of manifestation according to the degree of severity in patients with AII and COVID-19, we note that damage to peripheral vessels (τ=–0.20, p=0.02), dementia (τ=–0.20, p=0.01), peptic ulcer disease (τ=–0.18, p=0.02), diabetes without limb damage (τ=0.26, p=0.001) is significantly associated a sign of belonging in patients with a mild course of AII. Taking into account the severity of the course of acute intestinal infection against the background of COVID-19, no statistically significant difference in the frequency of average (p=0.33) and maximum (p=0.33) valuesof the comorbidity index was proven, as well as in the absence of statistical significance of correlations relationships between the degree of severity of acute intestinal infection with COVID-19 and the total value of the Charlson index (τ=0.09, p=0.26), between the presence of average (τ=–0.12, p=0.15) and maximum values index (τ=0.12, p=0.15).

The combined result of the Charlson comorbidity index in patients with AII against the background of COVID-19 testifies to the presence of a risk group among the subjects with a preference for high scores, which consisted of patients with a severe course of the disease. Characterizing the signs of the severity of their condition, we note that the examinees have a greater probability and risk of mortality.

The indicators of the ABCD assessment system by age substantiate the risk of increasing the severity of the condition by the age category of patients, which is reliably associated with the severe course of AII against the background of COVID-19 (τ=0.18, p=0.03). Evaluating the system of indicators of the ABCD scale, the author Abhijeet Ashok Salunke in a study characterized the influence of laboratory indicators and comorbid conditions, including the age of the patient, on the severity of the course of COVID 19 [8].

However, our study proved an increase in the frequency of lymphopenia indicators <1500/mm³, which are reliably associated with an increase in the severity of AII against the background of COVID-19 (τ=0.16, p=0.04). Hypoxemia and low SpO_2 indicators indicate a high (90 %) severity of the course of AII against the background of COVID-19, which is confirmed by the presence of a correlation between the indicators (τ=0.35, p=0.00002). In the studies of Nandy K., an assessment of the condition of patients was carried out to determine the degree of severity of COVID-19 [9]. Our study showed a

clear relationship between laboratory parameters and AII. A more severe course of acute intestinal infection against the background of COVID-19 was proven against the background of lower SpO^2 indicators in elderly and senile patients.

The existence of a direct moderate correlation between the total results of the ABCD system and the course of acute intestinal infection with COVID-19 was proved, which indicates an increase in the severity of AII in patients with high values of the ABCD system (τ=0.36, p=0.00001). Evaluating the NEWS questionnaire in a study by Eric Wibisono, Usman Hadi, who investigated the age of patients over 65 years, associated the risk of severity of COVID-19 and indications for intensive care with diabetes [10]. In our study, in contrast to comorbid conditions, SpO_2 indicators were assessed. According to the modified NEWS questionnaire, several indicators were evaluated regarding the age characteristic of patients ≥65 years old, which determines the severe course of the disease (τ=0.19, p=0.02). The presence of indicators of $SpO^2 \leq$ 91 % is associated with a more severe course of acute intestinal infection against the background of COVID-19 (τ=0.38, p=0.000002). Indicators of $SpO^2 \geq$ 96 % in patients indicate a mild course of acute intestinal infection against the background of COVID-19.

According to the results of the distribution of oxygen support for the patients of the studied group, it can be stated that this need is reliably associated with the severe course of AII in the studied patients with COVID-19 according to the presence of a direct moderate correlation between the indicators (τ=0.30, p=0.0002). The inverse correlation between indicators (τ=–0.30, p=0.0002) confirms the mild course of AII against the background of COVID-19 with no need for additional oxygen therapy.

Study limitations. A small number of patients in the prospective study group, considering the disease and the age of the patients.

Prospects for further research. It is planned to investigate and evaluate the features of the immunity of elderly and senile patients with acute intestinal infection and to study the impact on the course of this disease with COVID-19.

5. Conclusions

1. Evaluating the impact of concomitant diseases, considering the Charlson comorbidity index, it is possible to conclude that there is no relationship between the degree of severity of acute intestinal infection with COVID-19 and its total value. Considering the data of the scale, namely the presence of high scores in patients with a severe course of the disease, it could be concluded that the age of patients is associated with a higher risk of mortality.

2. According to the ABCD system and its separate laboratory indicators, the relationship between the age of patients with a severe course of acute intestinal infection against the background of COVID-19 was established. The increase in indicators affects the development of the increasing severity of acute intestinal infection against the background of COVID-19.

3. Assessment of the severity of the course of COVID-19 and the risk of developing complications according to the total results of the modified News questionnaire, indicates the need for oxygen support of the body compared to the indicators of patients with an average degree of severity of acute intestinal infection. Based on the results of the total indicators of the severity index of COVID-19, its growth was established, which is reliably associated with an increase in the severity of acute intestinal infection in elderly and elderly patients.

Thus, the organization of just such an approach in the assessment of indicators according to the above-mentioned characteristic predicts the clinical risk in the identification and sorting of patients with a severe course of the disease and an average state of severity, which allows for the formation of a clear algorithm of actions of the doctor in the treatment and provision of assistance to patients.

Conflict of interest

The authors declare there is no conflict of interests.

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