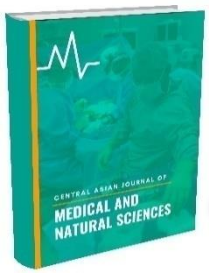
CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES



Volume: 04 Issue: 02 | Mar- Apr 2023 ISSN: 2660-4159

http://cajmns.centralasianstudies.org

Characteristics of Gastrointestinal Findings in Children with Sars-Cov-2

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Received 2nd Jan 2023,
Accepted 3rd Feb 2023,
Online 29th Mar 2023

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Abstract: The determination of this clinical contemplate was to evaluate the characteristics of the different progression of COVID-19 in children and the consequence of hypersensitised prominence on the manifestation of the disease in this case. The research premeditated 65 children hospitalized with a diagnosis of coronavirus infection at the Bukhara Regional Infectious Diseases Hospital from November 2021 to February 2022. Most of the 65 patients calculated were boys (58% boys (n=38) and 42% girls (n=27)). Most sick children were infected by family members. febricity (43. 4%) and dry coughing (44. 5%) were observed as characteristic symptoms, while gastrointestinal disorganizations such as diarrhea, abdominal discomfort and vomiting accounted for 12%. There were practically no dissimilarities in the occurrence of COVID-19, its clinical course, laboratory and immunological information surrounded by children with a history of hypersensitised and non-allergic prominence.

Key words: COVID-19, children, clinical signs, gastrointestinal findings .

Relevance. The 2019 pandemic of the coronavirus infection disease (COVID-19), caused by the severe acute respiratory syndrome coronavirus infection (SARS-CoV-2), has recently become widespread [1,2]. Currently, it is absolutely proven that the symptoms of the disease of COVID-19 appear in a multisystem way. The novel coronavirus SARS-CoV-2 first appeared in Wuhan, China, and is believed to have spread the disease from animals (bats). According to the Chinese Center for Disease Prevention and Control, 2.2% of cases of COVID-19 infection occurred in citizens under the age of 19, mainly in children over 10 years old. Among patients under 18 years of age, symptoms of the disease were somewhat less, that is, 0.25% [3,4,5]. When analyzing the clinical course of the disease and its

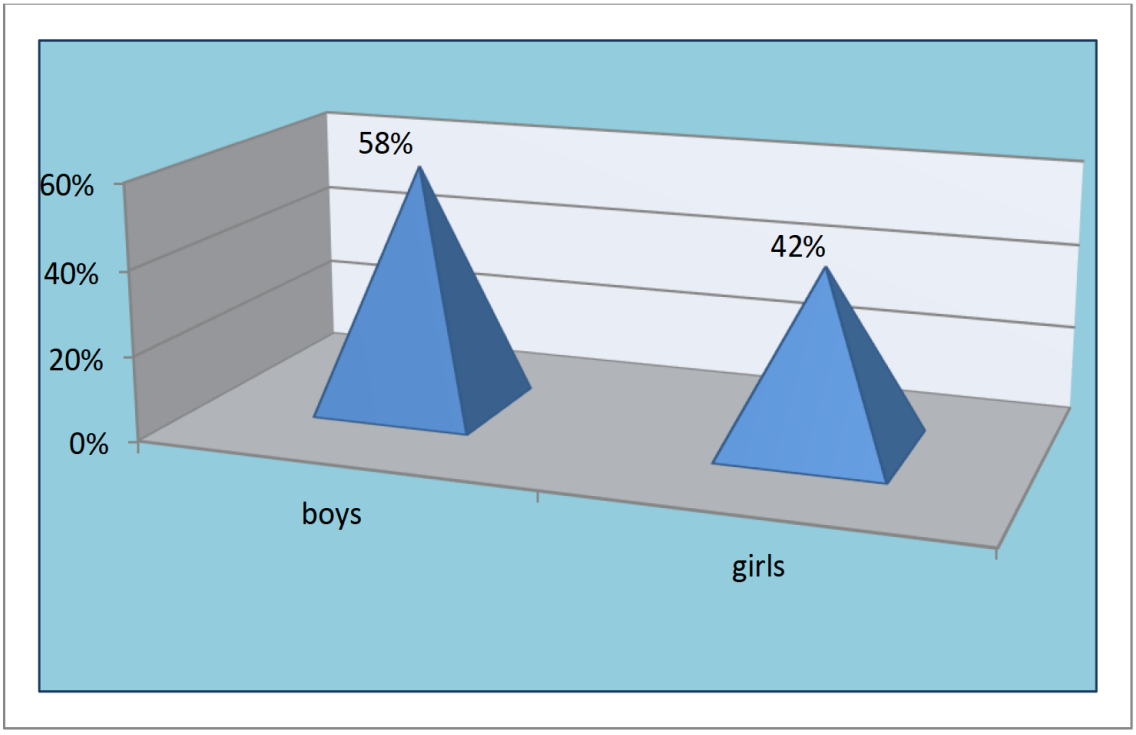
complications, the indicator of child mortality is rarely mentioned [6,8]. Even in European countries, the incidence among children is not high [7]. Based on the results of surveillance, children under 10 years of age account for 0.4% of all cases of COVID-19 in Switzerland, and 10-19-year-olds account for 2.6%. At present, studies in different countries have shown that the main feature is the mild manifestation of infection in children's patients [12]. Common circulating coronoviruses can be isolated from 4-6% of children hospitalized for acute respiratory tract infections [9,10] and from 8% of children receiving outpatient treatment [4].Hospitalization in a hospital requires up to 10% of children. A severe course is noted on average in 1% of cases of COVID-19 infection in children, most often complicated forms of the disease develop against the background of severe concomitant diseases [11,12]

Purpose. This clinical study aims to evaluate the specific characteristics of the course of different severity of COVID-19 in children and the influence of the allergic status on the disease manifestation in this case.

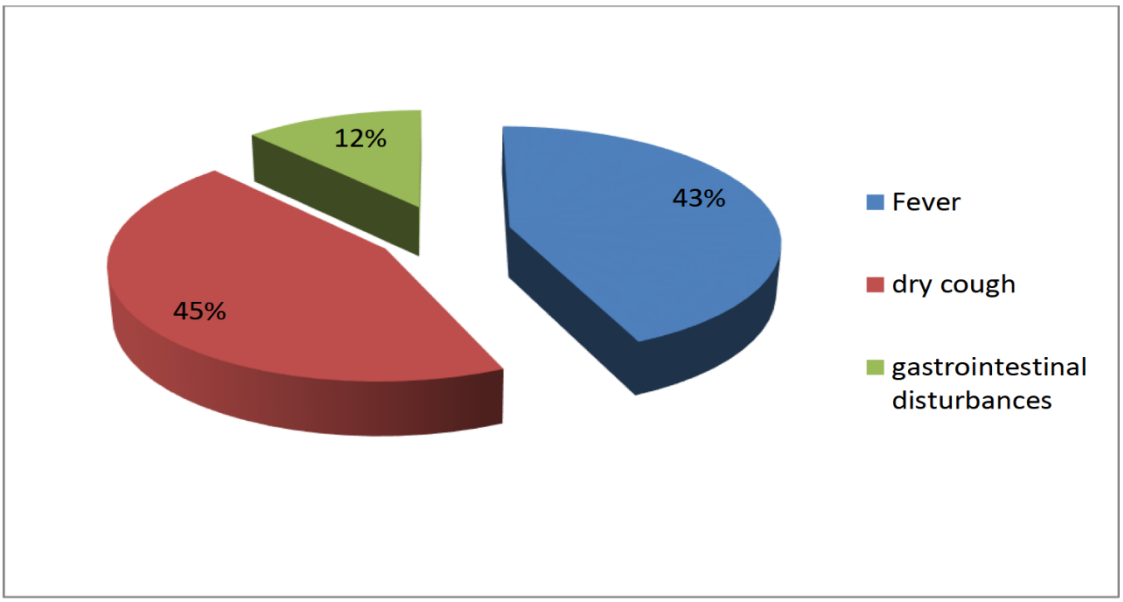
Research methods and materials. In this study, 65 patients and children who were treated with a diagnosis of coronavirus infection at the hospital of infectious diseases of the Bukhara region from November 2021 to February 2022 were studied. The objective condition, medical history, demographic data, clinical presentation of the disease, accompanying diseases, results of laboratory and immunological analysis, and X-ray images of the lungs were summarized and analyzed. Epidemiological history: children who traveled or lived in the focus of coronavirus infection during the 14 days preceding the onset of the disease; children who have been in contact with people who are ill with high fever or respiratory symptoms from the foci of infection; children from family or other foci of a new viral disease; newborns from mothers infected with a new coronavirus infection. All patients have laboratory confirmed SARS-CoV-2 infection (currently positive PCR results specific for SARS-CoV-2). General blood analysis revealed leukocytes (WBC), lymphocytes (LYM), mononuclear cells (MONO), neutrophils (NEU). Parameters of blood biochemical analysis: aspartate aminotransferase (AST), alanine aminotransferase (ALT), glucose (GLU), urea, creatinine and C-reactive protein (CRB) were determined using automatic biochemical analyzer MINDRAY BS-30 (China).

Results. Among patients aged 2 months to 18 years, the median age was 6 years. Most of the 65 studied patients are boys (58% boys (n=38), 42% girls (n=27)) (picture 1). Most of the sick children contracted the disease from family members**.** Fever (43.4%) and dry cough (44.5%) are common symptoms, and 12% have gastrointestinal disturbances such as diarrhea, abdominal discomfort, and vomiting (picture 2). Anomalous images can be observed in chest computer tomography of 71.4% of child patients, "cloudy glass" and local spot shadows were registered as typical signs of pneumonia when patients were admitted. Children without symptoms may be diagnosed with pneumonia due to abnormal chest CT scans. Atypical symptoms and nonspecific laboratory findings tend to make the diagnosis difficult, especially if chest CT changes are the only findings. The majority of laboratory parameters were normal, with only a small proportion of lymphopenia (4.1%) and eosinopenia (27.3%). Most of the infected children (87.8%) had a mild and moderate course of the disease, 9 (13.2%) had an asymptomatic form of infection. Most of the infected children (97.8%) had a mild illness, and 24 of them (13.2%) had no symptoms. Compared with children without pneumonia (asymptomatic and acute upper respiratory tract infection), patients with pneumonia had a higher incidence of comorbidities. In the anamnesis, there were symptoms of fever and cough, as well as increased levels of procalcitonin, alkaline phosphatase and interleukins (IL-2, IL-4, IL-6, IL-10 and TNF-α) in the blood. No differences

were observed in treatment and hospital stay, time to first negative nucleic acid test, and outcomes between children with and without pneumonia. Allergic rhinitis (83.7%), drug allergy, atopic dermatitis, food allergy, and asthma were the main diseases in 3 children with a history of allergy with COVID-19.



Picture 1. Incidence rate of the disease by sex.



Picture 2. The incidence of clinical symptoms of the disease.

Demographic and clinical characteristics were not significantly different between the non-allergic groups. Acute phase reagents, procalcitonin, D-dimer, and aspartate aminotransferase levels were less elevated in allergic patients than in all patients. Immunological profiles, including circulating T-, B-, and NK-lymphocyte subpopulations, total immunoglobulin and complement levels, and serum cytokines showed no differences between the allergy and pneumonia groups. Neither the eosinophil

count nor the serum total immunoglobulin E (IgE) level showed a significant correlation, as did other immunological parameters such as immunoglobulins, complement, lymphocyte count, and serum cytokine levels, procalcitonin, D-dimer, and aspartate aminotransferase levels were studied in all patients.

Summary. Pediatric patients with COVID-19 tend to have a mild clinical course. It can be seen that patients with pneumonia had higher rates of fever and cough and higher levels of inflammatory biomarkers than patients without pneumonia. Almost no differences were found in the incidence of COVID-19, its clinical course, laboratory and immunological data between children with an allergic status in the anamnesis and those without an allergic status. Allergy has little effect as a risk factor for the development of SARS-CoV-2 infection and the severity of COVID-19 disease in children.

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