

RESEARCH PAPER

**PROFILE OF GASTROINTESTINAL MANIFESTATION ON PEDIATRIC
PATIENTS WITH COVID-19 IN RSUD DR. SOETOMO**



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INTERNATIONAL CLASS MEDICAL PROGRAM

FACULTY OF MEDICINE

UNIVERSITAS AIRLANGGA

SURABAYA

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PREREQUISITE SHEET

**PROFILE OF GASTROINTESTINAL MANIFESTATION ON
PEDIATRIC PATIENTS WITH COVID-19 IN RSUD DR. SOETOMO**

RESEARCH PAPER

This statement is to fulfill the requirement of the research module Medical Faculty
of Universitas Airlangga

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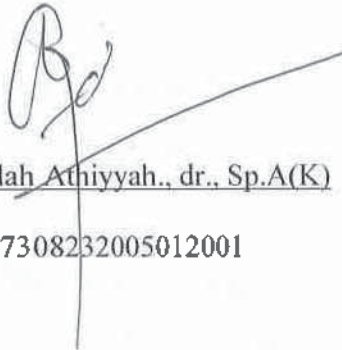
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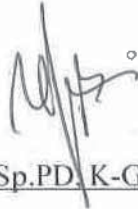
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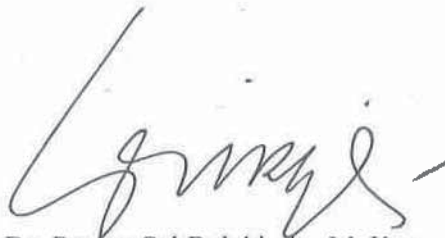


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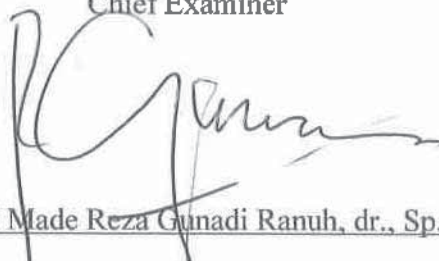
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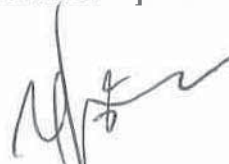
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The author realized that this research paper still has a lot of room for improvement. For this reason, the author welcomes all positive suggestions, criticism, as well as guidance from the readers. With this research paper, the author hopes that it can be advantageous for all the parties in need.

Surabaya, 16 December 2022

(Alya Kusumaningrum)

SUMMARY

PROFILE OF GASTROINTESTINAL MANIFESTATION ON PEDIATRIC PATIENTS WITH COVID-19 IN RSUD DR. SOETOMO

Alya Kusumaningrum

Coronavirus Disease 2019 (COVID-19) is predominantly a respiratory disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), which were first reported in China on December 2019 and has been declared as a global pandemic by the World Health Organization (WHO) since March 2020 (Lee et al., 2020; Puoti et al., 2021). As of June 16, 2021, there have been over 176 million confirmed COVID-19 cases and 3.8 million deaths worldwide, with approximately 8.5% of the reported cases were pediatric patients under the age of 18 years (WHO, 2021). The majority of children infected with SARS-CoV-2 show mild symptoms, although 15 to 35% may be asymptomatic (Chen et al., 2020). Based on a study by Kariyawasam et al. (2021), COVID-19 patients experience gastrointestinal symptoms in 11.4 to 61.1% of cases. Anorexia, diarrhea, nausea, vomiting, and abdominal pain are among the most common COVID-19-related GI symptoms.

The general objective of this study is to identify and analyze the gastrointestinal manifestations on pediatric patients with COVID-19 in RSUD Dr. Soetomo. This study uses a descriptive and retrospective study design to examine the profile of gastrointestinal manifestation on pediatric patients with COVID-19 in RSUD Dr. Soetomo by using secondary data through medical records. The population in this study were pediatric patients with COVID-19 in the Pediatric Ward of RSUD Dr. Soetomo during the period of 1 July 2020 to 30 June 2021.

Based on the data obtained, there were 113 eligible pediatric COVID-19 patients in RSUD Dr. Soetomo during the period of 1 July 2020 to 30 June 2021. The predominant demographic characteristics of pediatric patients with COVID-19 in RSUD Dr. Soetomo were those with the age group of 6 to less than 18 years with an average of 8 years old, male, confirmed COVID-19 positive before hospitalization, not yet recovered after being discharged, and had a mean hospital length of stay of 16 days. There was 76.1% of patients that had an underlying medical condition. The severity of illness of COVID-19 of the patients was dominated by asymptomatic infection (37.2%). The gastrointestinal manifestations of COVID-19 found in 44.2% of the total patients include nausea or vomiting (25.7%), diarrhea (15.9%), anorexia (13.3%), abdominal pain (8.8%), hepatomegaly (1.8%), splenomegaly (1.8%), and GI bleeding (1.8%).

The mean laboratory examination results of pediatric COVID-19 patients were as follows: hemoglobin level of 10.69 g/dL, RBC count of 4.45×10^6 cells/mm³, hematocrit level of 34.24%, WBC count of 24.17×10^3 cells/mm³, platelet count of 260.77×10^3 cells/ μ L, sodium level of 136.9 mEq/L, potassium level of 4 mEq/L, chloride level of 102.7 mEq/L, BUN level of 21.59 Mg/dL (31.0%), serum creatinine level of 1.40 Mg/dL, albumin level of 3.29 g%, SGPT level of 84.73 U/L, and SGOT level of 53.67 U/L. The most prevalent macroscopic characteristics of the stool analysis of pediatric COVID-19 patients with diarrhea were transparent in color (72.2%), liquid in consistency (77.8%), and without the presence of blood and mucus (88.9%).

ABSTRACT

PROFILE OF GASTROINTESTINAL MANIFESTATION ON PEDIATRIC PATIENTS WITH COVID-19 IN RSUD DR. SOETOMO

Alya Kusumaningrum

Introduction: Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. Although primarily known as a respiratory disease, COVID-19 could have gastrointestinal manifestations, such as diarrhea, nausea or vomiting, and abdominal pain since angiotensin-converting enzyme 2 (ACE2) receptors are also expressed in small intestinal epithelial cells.

Objective: To identify and analyze the gastrointestinal manifestations on pediatric patients with COVID-19 in RSUD Dr. Soetomo.

Method: This is a descriptive retrospective research that use secondary data from the medical records of pediatric patients of COVID-19 in RSUD Dr. Soetomo during the period of 1 July 2020 to 30 June 2021. The inclusion criteria of this research are patients in the age of 0-18 years who were confirmed COVID-19 through PCR test. The collected data include the demographic, underlying medical condition, severity of illness, gastrointestinal manifestation, and supporting examinations.

Results: Of all 113 pediatric patients with COVID-19, the average age was 8 years old, male, confirmed COVID-19 positive before hospitalization, not yet recovered after being discharged, and had a mean hospital length of stay of 16 days. 76.1% of patients had an underlying medical condition. 37.2% of patients was asymptomatic. The gastrointestinal manifestations of COVID-19 found in 44.2% of the total patients include nausea or vomiting (25.7%), diarrhea (15.9%), anorexia (13.3%), abdominal pain (8.8%), hepatomegaly (1.8%), splenomegaly (1.8%) and GI bleeding (1.8%).

Conclusion: 44.2% of the total patients in this study had at least one gastrointestinal symptom of COVID-19. The highest prevalence of GI manifestation of COVID-19 was nausea or vomiting, accounting for 25.7% of all patients.

Kata Kunci: COVID-19, gastrointestinal, pediatric

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LIST OF ABBREVIATIONS

ACE-2	: Angiotensin Converting Enzyme 2
Ag-RDT	: Antigen Rapid Diagnostic Test
AlphaCoV	: Alphacoronavirus
BetaCoV	: Betacoronavirus
COVID-19	: Coronavirus Disease 2019
DeltaCoV	: Deltacoronavirus
GammaCoV	: Gammacoronavirus
GI	: Gastrointestinal
ICU	: Intensive Care Unit
IDAI	: Ikatan Dokter Anak Indonesia
Kemenkes RI	: Kementerian Kesehatan Republik Indonesia
MERS	: Middle East Respiratory Syndrome
NAAT	: Nucleic Acid Amplification Test
NIH	: National Institute of Health
RNA	: Ribonucleic Acid
rRT-PCR	: Real-Time Reverse-Transcriptase Polymerase-Chain-Reaction
SARS	: Severe Acute Respiratory Syndrome
SARS-CoV-2	: Severe Acute Respiratory Syndrome Coronavirus 2
WHO	: World Health Organization