
DESCRIPTION OF CHARACTERISTICS OF TYPHOID FEVER PATIENTS IN CHILDREN AGED 5-14 YEARS AT RSU ROYAL PRIMA MEDAN PERIOD AUGUST 2022-FEBRUARY 2023

Dzaky Dhawy Dermawan¹, Qori Fadillah², Andre Budi³

Prima Indonesia University

Email: dhawydzaky@gmail.com¹, qorifadillah@gmail.com², andrebudi@unprimdn.ac.id³

Abstract

Infectious diseases are still a public health problem, especially in developing countries. One of the infectious diseases is typhoid fever. Typhoid fever is an acute infection of the small intestine with symptoms of fever lasting more than one week, which can cause digestive disorders and reduce the level of consciousness. This research aims to analyze the characteristics of typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan from August 2022 - February 2023. The type of research used in this research is a qualitative description with a cross-sectional design. The population used was 46 medical records of typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan from August 2022 - February 2023. The sampling technique used in this research used total sampling, while the number of samples used was 46 records. Medical treatment for typhoid fever patients. Data analysis uses univariate analysis. The results of the study showed that the number of typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan from August 2022 – February 2023 was 46 children, 27 of the sufferers were predominantly male while 19 were female. All typhoid fever sufferers in this study experienced accompanying symptoms of fever, nausea, vomiting, and diarrhea; only five typhoid fever sufferers, or 10.9%, were accompanied by additional accompanying symptoms in the form of abdominal pain. Normal body weight in male patients was 19 patients, and abnormal body weight was eight patients. Normal body weight in female patients was eight patients, and abnormal body weight was 11 patients. All typhoid fever sufferers received RL and NaCL therapy, only 11 sufferers received additional Cefixime therapy, and only 32 sufferers received additional Ceftriaxone therapy. August 2022 – February 2023 is > 3 days.

Keywords: Typhoid Fever, Gender, Accompanying Symptoms, Nutritional Status.

Corresponding Author: Dzaky Dhawy Philanthrope

E-mail: dhawydzaky@gmail.com



Introduction

Health is the main thing that must be considered; if the public's health status is good, then all community activities can run smoothly. A high level of health causes the body to be in prime condition so that all the body's organs can function as they should without experiencing significant disturbances, which can risk reducing a person's physiological and psychological condition and can hinder work. The emergence of a disease, such as infectious diseases, is the biggest threat that risks reducing the health status of people in the world (Gunawan et al., 2022).

Infectious diseases are still a public health problem, especially in developing countries (Kemenkes, 2021). Infectious diseases do not recognize administrative regional boundaries, so eradicating infectious diseases requires cooperation between regions, for example, between provinces, districts/cities, and even between countries. (Zaidan & Hadi, 2020).

One of the infectious diseases is typhoid fever (Ardiaria, 2019). Typhoid fever is an acute infection of the small intestine with symptoms of fever lasting more than one week, which can cause digestive disorders and reduce the level of consciousness. Salmonella typhi bacteria is the cause of typhoid fever, also known as abdominal typhus, which is an acute infectious disease of

the small intestine. Prolonged fever, bacteremia, as well as invasion and proliferation of salmonella typhi bacteria into mononuclear phagocyte cells in the liver, spleen, intestinal lymph nodes, and Peyer's spots are characteristic of typhoid fever. Transmission of typhoid fever can be *fecal* and oral, which enters the human body through contaminated food and drink (Muthoharoh et al., 2020). Salmonella typhi can infect various types of food, including water, ice cubes, raw vegetables and fruit. This bacteria is spread through food and water that is not properly sanitized, such as that found at roadside stalls in developing countries. Typhoid fever is transmitted in developed countries by travelers coming from areas with endemic typhoid fever (Putra et al., 2020).

According to WHO, typhoid fever is an acute febrile illness that is life-threatening. Without treatment, the case fatality rate for typhoid fever is 10-30%, decreasing to 1-4% if appropriate therapy. Young children are at greatest risk, with common symptoms being fever, chills, and abdominal pain. It is estimated that there are 11-21 million cases of typhoid fever and around 128,000-161,000 deaths every year. Meanwhile, in Indonesia, the number of cases is 358-810/100,000 population in Indonesia. The incidence of typhoid fever increases yearly, with an average incidence of 500/100,000 in the population and a mortality rate of around 0.6-5% (Putra et al., 2020).

The prevalence of this disease in Indonesia is 1.6% and ranks 5th in infectious diseases that occur at all ages in Indonesia, namely 6.0% and ranks 15th in the cause of death for all ages in Indonesia, namely 1.6%. Most cases of typhoid fever occur in the age range of 3 – 19 years (Khairunnisa et al., 2020). Based on data from the North Sumatra Provincial Health Service in 2020, it was reported that typhoid fever was one of the ten diseases that caused an increase in the number of hospitalized patients, with cases reaching 15,233, and in 2021, it was reported that typhoid fever cases reached 11,550.

Typhoid fever usually attacks school-age children (5 to 14 years). This age group is known for its high levels of physical activity, which can result in neglected diet and hygiene. In addition, a lack of parental guidance regarding clean and healthy living behavior can lead to the emergence of unhealthy eating habits such as snacking or eating out, where food safety is not guaranteed and can become a breeding ground for *Salmonella typhi bacteria*. School children are very vulnerable to consuming various kinds of food from street vendors and drinking contaminated water. Children are especially susceptible to typhoid fever due to these causes (Ramada, 2021).

Royal Prima Medan Hospital is one of the largest private hospitals. It will become a referral center for the community, especially the city of Medan and the community of North Sumatra in general. RSU Royal Prima Medan has a children's polyclinic, which will make the RSU a place for referral for pediatric patients, especially children with typhoid fever.

From the description background back above, the researcher is interested in doing a study with the title "Characteristics of Typhoid Fever Sufferers in Children Aged 5-14 Years at RSU Royal Prima Medan for the period August 2022-February 2023".

Research methods

The type of research used in this research is a qualitative description with a *cross-sectional design*. The study was held at RSU Royal Prima Medan, which is located at Jl. Father No. 68A, Sei Putih Tengah, Kec. Medan Petisah, Medan City, North Sumatra 20118. Research will start from July 2023 to April 2023.

The population in this study were medical records of typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023, totaling 46 medical records.

The sampling technique used in this research was *total sampling*. *Total sampling* is a sampling technique where all members of the population are sampled so the number of samples in this study was 46 samples of medical records of typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023. Deep data analysis study This is an analysis with a descriptive univariate method.

Results and Discussion

Table 1 Total Typhoid Fever Sufferers

Number of Typhoid Fever Sufferers	n	%
Typhoid Fever in Children Aged 5-14 years	46	100
Total	46	100

From Table 1, it can be seen that the number of sufferers of typhoid in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023 is as many as 46 children with a percentage of 100%.

Table 2 Characteristics of Typhoid Fever Sufferers in Children Aged 5-14 Years Based on Gender at RSU Royal Prima Medan for the Period August 2022 - February 2023

Gender	n	%
Man	27	58.7
Woman	19	41.3
Total	46	100

Table 2 explains the characteristics of sufferer fever typhoid in children ages 5-14 years based on type and gender at RSU Royal Prima Medan from August 2022 to February 2023. The results study show that sufferer fever types of typhoid sex men as many as 27 people with a percentage amounted to 58.7%, and sufferers fever types of typhoid sex Woman as many as 19 people with a percentage amounting to 41.3% of the total sufferers' fever typhoid in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023 as many as 46 children. From the results, it can be seen that the majority of sufferers of typhoid fever in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023.

Table 3 Characteristics of Typhoid Fever Sufferers in Children Aged 5-14 Years Based on Accompanying Symptoms at RSU Royal Prima Medan for the Period August 2022 - February 2023

Accompanying Symptoms	n	%
Fever	46	100
Nauseous	46	100
Vomit	46	100
Stomach ache	5	10.9
Diarrhea	46	100

Table 3 explains the results of characteristics of sufferer fever typhoid in children ages 5-14 Years based on symptom participation in RSU Royal Prima Medan for the period August 2022 - February 2023. The results study shows that all sufferers of fever typhoid patients experienced symptoms accompanying fever, nausea, vomiting, and diarrhea; only five people suffered from fever typhoid, 10.9%, accompanied by symptoms accompanying a Sick stomach.

Table 4 Characteristics of Typhoid Fever Sufferers in Children Aged 5-14 Years Based on Nutritional Status at RSU Royal Prima Medan for the Period August 2022 - February 2023

Gender	BB Normal		Nutritional status		Total
	n	%	Total	Abnormal BB	
Man	19	41.3	19	8	8
Woman	8	17.4	8	11	11

Table 4 explains results about characteristics of sufferer fever typhoid in children ages 5-14 Years based on status nutrition at RSU Royal Prima Medan for the period August 2022 - February 2023, in a study, this is the nutritional status child seen from the child's BB based on WHO. The results of the study show that the patient's weight fever typhoid with type sex 19 normal men with percentage amounted to 41.3%, and the patient's body weight fever Abnormal typhoid with as many as eight people with a percentage amounting to 17.7%. Child's weight sufferer fever typhoid with type sex There are eight normal women with a percentage amounted to 17.4%, and the patient's body weight fever typhoid in children 11 abnormal women with a percentage amounting to 23.9%.

Table 5 Therapy for Typhoid Fever Sufferers in Children Aged 5-14 Years at RSU Royal Prima Medan Period August 2022 - February 2023

Therapy	n	%
RL	46	100
NaCL	46	100
Cefixime	11	23.9
Ceftriaxone	32	69.9

Table 5 explains the results of a study about therapy used on patients with fever typhoid in children aged 5-14 years at RSU Royal Prima Medan in the period August 2022 – February 2023. The results of the study show that all sufferers of fever typhoid got RL and NaCL therapy; only 11 sufferers, or 23.9 %, received it in addition to Cefixime therapy, and only 32 sufferers, or 69.9 % of patients received additional therapy, Cefriaxone.

Table 6 Characteristics of Typhoid Fever Sufferers in Children Aged 5-14 Years Based on Length of Treatment at RSU Royal Prima Medan for the Period August 2022 - February 2023

Length of Treatment	n	%
1 – 3 Days	3	6.5
> 3 Days	43	93.5
Total	46	100

Table 6 explains the characteristics of sufferer fever typhoid in children ages 5-14 years based on length of stay at RSU Royal Prima Medan from August 2022 – February 2023. The results study show that sufferer fever Typhoid treatment takes 1 – 3 days for as many as three people, with percentage amounting to 6.5%, and sufferers fever typhoid treatment duration > 3 days as many as 43 people with percentage amounting to 93.5% of the total sufferers sufferer fever typhoid in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023 as many as 46 children. From the results This seen that the majority of treatment takes a long time sufferer fever typhoid in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023 is > 3 days.

Discussion

Characteristics of Typhoid Fever Sufferers in Children Aged 5-14 Years Based on Gender at RSU Royal Prima Medan for the Period August 2022 - February 2023

The results of research regarding the characteristics of typhoid fever sufferers in children aged 5-14 years based on gender at RSU Royal Prima Medan for the period August 2022 – February 2023 showed that 27 typhoid fever sufferers were male with a percentage of 58.7%, and There were 19 typhoid fever sufferers who were female, with a percentage of 41.3% of the total typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023, totaling 46 children. From these results, it can be seen that the majority of typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan from August 2022 – February 2023 are male.

This research is in line with research conducted by Franky (2020). The results show that typhoid fever occurs more often in men (PUTRA, 2020). The same conclusion was also obtained from research conducted by (Melarosa et al., 2019) at the Sanglah Central General Hospital (RSUP) Denpasar, which revealed that male patients - 36 out of 55 patients, or 65.5% - more people suffer from typhoid fever than women. This is because men's lifestyle choices make them more susceptible to infection with the salmonella typhi bacteria, which causes typhoid fever (Melarosa et al., 2019).

Typhoid fever can occur in all genders, both women and men, and this is not an indication that the incidence of typhoid fever is more common in men than women. In the male gender, if we look at this disease, it is closely related to personal hygiene, poor food hygiene, and dirty environments, and usually transmission occurs through water contaminated with *Salmonella Typhi*. Contaminated food or *carriers* are the main source of transmission of fever. Typhoid fever can happen to anyone, especially patients who do not understand food choices and personal hygiene. Variations in disease prevalence between genders may also be associated with societal attitudes, sociodemographics, and roles in life.

Characteristics of Typhoid Fever Sufferers in Children Aged 5-14 Years Based on Accompanying Symptoms at RSU Royal Prima Medan for the Period August 2022 - February 2023

The results of research regarding the characteristics of typhoid fever sufferers occurring in children aged 5-14 years based on accompanying symptoms at RSU Royal Prima Medan for the period August 2022 – February 2023 show that all typhoid fever sufferers in this study experienced accompanying symptoms of fever, nausea, vomiting and diarrhea, only five people suffered from typhoid fever or 10.9% who were accompanied by additional accompanying symptoms in the form of stomach pain.

In this study, fever, nausea, vomiting, and diarrhea were the main accompanying complaints or symptoms in typhoid fever patients at RSU Royal Prima Medan from August 2022 to February 2023. The results of this study are in line with research conducted by Rianti (2017) with research entitled clinical profile children with typhoid fever at the Dr. Sardjito Yogyakarta Central General Hospital, the results of which showed that fever was the main complaint in all patients (100%), other complaints that were frequently found were anorexia (54.4%), nausea (49.4%), vomiting (41.8%), headache (37.3%), cough (37.3%), abdominal pain (34.2%), constipation (30.4%) and diarrhea (29.7%). The most common signs found in patients were liver enlargement (29.7%), abdominal tenderness (20.3%), lymphadenopathy (13.3%), lethargy (13.3%), dirty tongue (12.0%), enlarged spleen (6.3%) and decreased consciousness (4.4%). Rose spots were not found in all subjects (Lestari & Arguni, 2017).

Typhoid fever is caused by the presence of *salmonella typhi bacteria*, and its endotoxin stimulates the synthesis and release of pyrogens by leukocytes in inflamed tissue. Typhoid patients often have bad breath due to prolonged fever. The lip mucosa is dry, sometimes chapped, and the tongue looks dirty and pale. The tip and edges of the tongue are reddish and trembling, and in general, patients often complain of abdominal pain, especially in the epigastric region (heartburn), accompanied by nausea and vomiting. At first, the patient often experienced constipation, in the following week the patient sometimes experienced diarrhea (Ulya & Widyawati, 2020).

Characteristics of Typhoid Fever Sufferers in Children Aged 5-14 Years Based on Nutritional Status at RSU Royal Prima Medan for the Period August 2022 - February 2023

The results of research regarding the characteristics of typhoid fever sufferers in children aged 5-14 years based on nutritional status at RSU Royal Prima Medan for the period August 2022 - February 2023 show that the body weight of typhoid fever sufferers with normal gender is 19 people with a percentage of 41.3%. The abnormal body weight of typhoid fever sufferers was eight people, with a percentage of 17.7%. The body weight of children suffering from typhoid fever with normal female gender was eight people with a percentage of 17.4%, and the weight of typhoid fever sufferers in girls who were abnormal was 11 people with a percentage of 23.9%.

Both the bacterial infection caused by *Salmonella typhi* and the prognosis of a disease are correlated with nutritional conditions. Various vitamins, minerals and nutrients in food are very important to prevent problems and meet the body's increased nutritional needs due to disease (Farhadi & Ovchinnikov, 2018). Medical examination and treatment should include nutritional assessment, especially for pediatric patients who have protracted dietary requirements. Nutritional status is the state of the body's ability to balance food intake with nutritional needs. Certain medical disorders have been linked to nutritional status as a cause or risk factor, according to certain studies. For example, in children who are malnourished. An imbalance between calorie expenditure and nutritional intake and needs is known as malnutrition, which can interfere with a child's growth and development. Inadequate nutrition can worsen mucositis and neutropenia, delay recovery from illness, and increase the risk of infection (Runco et al., 2020). The results of nutritional status evaluations can show various levels of malnutrition as well as the relationship between a person's health and certain diseases.

Therapy for Typhoid Fever Sufferers in Children Aged 5-14 Years at RSU Royal Prima Medan Period August 2022 - February 2023

The results of research regarding therapy for typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023 show that all typhoid fever sufferers in this study received RL and NaCL therapy, only 11 sufferers or 23.9% who received additional Cefixime therapy, and only 32 sufferers or 69.9% of sufferers received additional Ceftriaxone therapy.

This research is in line with research conducted by Luvita (2021), where the results show that typhoid fever therapy uses cefixime and ceftriaxone. Based on the type of inpatients with typhoid fever at RSUD, Dr. Soeroto Ngawi uses five types of antibiotics, namely ceftriaxone, cefotaxime, cefixime, thiamphenicol, and chloramphenicol. Based on the data, the antibiotic ceftriaxone is the most commonly prescribed (67%), with 67 patients receiving this type of drug.

The trend is to treat typhoid fever with second-line antibiotics, such as the cephalosporin group, because many patients experience multi-drug resistance or MDR. Currently, the chloramphenicol group—which inhibits bacterial protein synthesis—is the first line of treatment for typhoid fever. Inhibiting the enzyme peptidyl transferase, the drug attaches to ribosomal subunit 50 and prevents the formation of peptide bonds during bacterial protein synthesis. Ceftriaxone is the current antibiotic of choice. This drug was chosen because of its ability to lower body temperature, ease of short-term administration, and high level of safety for adults and children (Melarosa et al., 2019).

Characteristics of Typhoid Fever Sufferers in Children Aged 5-14 Years Based on Length of Treatment at RSU Royal Prima Medan for the Period August 2022 - February 2023

The results of research regarding the characteristics of typhoid fever sufferers in children aged 5-14 years based on nutritional status at RSU Royal Prima Medan for the period August 2022 - February 2023 show that there are three typhoid fever sufferers whose treatment duration is 1 - 3 days with a percentage of 6.5%, and 43 people with typhoid fever who had a treatment period of >3 days, with a percentage of 93.5% of the total number of typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023 were 46 children. From these results, it can be seen that the majority of the length of stay for typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan from August 2022 – February 2023 is > 3 days.

The results of this study are in line with research conducted by Satriani (2020), where the results show the average length of treatment for typhoid fever patients in hospitals. Ibnu Sina Makassar for the period January 2016 – December 2017 is 5.07 or rounded up to 5 days. Apart from that, the shortest treatment duration is one day, and the longest treatment duration is 20 days (Zaidan & Hadi, 2020).

The length of treatment for typhoid fever patients depends on the severity of the typhoid fever patient and the therapy received. It is possible for patients to have a length of stay of 1-3 days due to appropriate medication administration, the patient's severity level not being too severe, and the presence of complications and comorbidities that are not severe. Meanwhile, in

patients who are hospitalized for more than three days, there are indications that patients tend to receive inappropriate medication. Patients should receive combination antibiotic therapy but only receive single antibiotic therapy. The length of a patient's stay in the hospital can be influenced by several factors, such as the severity of the disease, the side effects of medication, and the possibility that the patient has already taken medication before entering the hospital.

Conclusion

1. The number of typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023 is 46 children.
2. The number of sufferers was 27 male and 19 female.
3. All typhoid fever sufferers in this study experienced accompanying symptoms of fever, nausea, vomiting, and diarrhea; only five typhoid fever sufferers, or 10.9%, were accompanied by additional accompanying symptoms in the form of abdominal pain.
4. Normal body weight in male patients was 19 patients, and abnormal body weight was eight patients. Normal body weight in female patients was eight patients, and abnormal body weight was 11 patients.
5. All typhoid fever sufferers received RL and NaCL therapy, only 11 sufferers received additional Cefixime therapy, and only 32 sufferers received additional Ceftriaxone therapy.

The majority of the length of stay for typhoid fever sufferers in children aged 5-14 years at RSU Royal Prima Medan for the period August 2022 – February 2023 is > 3 days.

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