

GAMBARAN KASUS ANAK DENGAN TERKONFIRMASI COVID 19 DI RUMAH SAKIT UMUM DAERAH ULIN BANJARMASIN KALIMANTAN SELATAN 15 MARET - 15 JULY 2020

Overview Of Children With Covid 19 Confirmation Case In Ulin General Hospital, Banjarmasin, South Kalimantan 15 March - 15 July 2020

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Abstrak

Penyakit virus corona (COVID 19) masih menjadi masalah kesehatan di Indonesia dimana jumlah kasus yang dilaporkan pada 10 Juli 2020 sebanyak 72.347 kasus dengan 3.469 kematian. Kota Banjarmasin merupakan kasus COVID-19 tertinggi ke-6 setelah Provinsi Jawa Barat. Penelitian ini bertujuan untuk mendeskripsikan kasus COVID 19 pada pasien anak yang dirawat di RSUD Ulin, Banjarmasin, Kalimantan Selatan. Metode dalam Penelitian ini merupakan penelitian deskriptif observasional. Sumber data dalam penelitian ini adalah data primer pasien yang dirawat inap pada bulan Maret sampai Juli 2020 di RSUD Ulin Banjarmasin. Hasil penelitian Mayoritas kasus COVID 19 terjadi pada kelompok usia 11-18 tahun. Kasus COVID 19 terbanyak terjadi pada laki-laki (61,11%). 4 pasien meninggal. Penyakit penyerta terbanyak adalah gagal ginjal, keganasan dan gangguan hematologi. Terdapat 10 pasien (55,56%) dengan pemeriksaan pneumonia klinis dan investigasi. Hasil pengujian laboratorium pendukung yang signifikan adalah peningkatan LDH dan D-Dimer. Kesimpulan: RSUD Ulin Banjarmasin Kalimantan Selatan merupakan rumah sakit rujukan dengan total pasien COVID-19 yang dirawat sebanyak 18 orang. Perlu penelitian lebih lanjut seiring dengan peningkatan jumlah kasus rawat inap di RSUD Kota Ulin Banjarmasin.

Kata Kunci:

Anak, Covid 19, RSUD Ilin Banjarmasin

Keywords:

Children, Covid 19, Ulin Hospital Banjarmasin

Abstract

Background: Corona virus disease (COVID 19) is still a health problem in Indonesia where the number of cases reported on 10 July 2020 was 72,347 cases with 3,469 deaths. Banjarmasin City is the 6th highest COVID 19th case after West Java Province. Objective: This study aims to describe the case of COVID 19 in pediatric patients treated at Ulin General Hospital, Banjarmasin, South Kalimantan. Method: This study was an observational descriptive study. The data source in this study is primary data of patients who were hospitalized in March to July 2020 at Ulin Hospital Banjarmasin. Results: The majority of COVID 19 occurred in the age group 11-18 years. Most cases of COVID 19 occurred in men (61.11%). 4 patients died. Most comorbidities are kidney failure, malignancy and hematological disorders. There were 10 patients (55.56%) with clinical and investigative pneumonia examinations. Significant supporting laboratory testing results are an increase in LDH and D-Dimers. Conclusion: Ulin City Hospital, Banjarmasin, South Kalimantan is a referral hospital with a total number of COVID-19 patients treated by 18 people. Need further research along with an increase in the number of inpatient cases at Ulin City Hospital Banjarmasin.

BACKGROUND

On December 31, 2019, China reported a mysterious case of pneumonia with no known cause. Samples of isolates from patients were examined with the results showing the presence of coronavirus

infection, a new type of betacoronavirus, named 2019 novel Coronavirus (2019-nCoV). On February 11, 2020, the World Health Organization named the new virus Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) and the name of the disease as

Coronavirus disease 2019 (COVID-19). On March 11, 2020, WHO announced that COVID-19 became a pandemic in the world.¹

According to Wu, et al (2020) the incidence of COVID-19 in children aged 10-19 years was 549 / 72,314 or 1% of all cases; while the age group <10 years were 416 / 72,314 (0.9%) cases. As of June 3, 2020, in Indonesia, there were 28. 233 confirmed cases of COVID-19; 1698 cases (6%) of them died. Based on the latest data from the Indonesian Ministry of Health (2 June 2020), the number of child confirmation cases is 7.76% of the total COVID-19 confirmation cases (<https://data.covid19.go.id/public/index.html>) figures this is higher when compared to case reports in several countries in the world.²

Covid-19 case data as of June 28, 2020, South Kalimantan was ranked sixth after the province of West Java. Data from the website covid19.go.id, today there are 2,876 cases of covid-19 in South Kalimantan. While the breakdown according to the district / city Health Service in South Kalimantan, as of June 27, 2020 there were 643 people recovered, 178 people died and the rest are in care.³

This study aims to provide a presentation in the form of a picture of Covid-19 in Banjarmasin, especially pediatric patients who have been treated at the Ulin District Hospital in Banjarmasin as input in controlling the handling of Covid-19 cases in Banjarmasin.

METHOD

This research is an observational descriptive study. The data source in this study uses primary data that is data from pediatric patients who have been treated in the period March - July 2020 at Ulin District Hospital, Banjarmasin, South Kalimantan. This study describes the incidence of the Covid-19 case with an epidemiological case approach according to person, place and time. The variables studied in this study were gender, age, comorbidities, patients with clinical and

racological features supporting pneumonia, mortality and the results of investigations in pediatric patients treated.

Age variables are grouped into 3 namely age groups 1-3 years, 4-10 years, and 11-18 years. Comorbid variables that accompany such as the nutritional status of children, kidney failure, malignancy or hematological disorders, tuberculosis. The mortality rate variable is calculated from the percentage of co-19 death cases divided by the total number of covid-19 cases that have been treated at Ulin District Hospital, Banjarmasin. Supporting examination results include anemia, leukopenia, leukocytosis, thrombocytosis, thrombocytopenia, lymphopenia, increased LDH, LED, Ferritin, D-Dimer, CRP, increased transaminase enzymes, decreased GFR <90 ml / Minute / 1.73m² and impaired coagulation.

RESULTS

Covid-19 Patterns Based on People, place and time

The results showed that from March to July 2020, the total number of pediatric patients treated at Ulin Hospital Banjarmasin was 18 people. (Table 1)

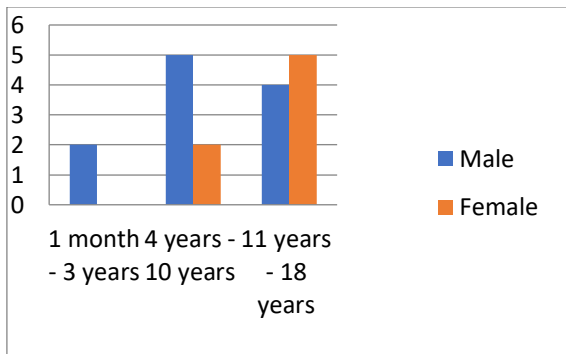
Table 1. COVID 19 in children cases by age at Banjarmasin Ulin Hospital in March to July 2020

Age	Male	Female	Total
1 month - 3 years	2	0	2
4 years - 10 years	5	2	7
11 years - 18 years	4	5	9

Pediatric patients treated at Ulin City Hospital Banjarmasin, the majority of COVID 19 cases occurred in men at 61.11%, while in women at 38.89%. The pattern of distribution of covid-19 cases in March to July 2020, most in the age group 11-18 years. The pattern of co-19 events can still change with the increasing findings of co-19 confirmed cases every month. Covid

incidence -19 fewer cases at the age of 1-3 years. The distribution of cases by age can be seen in Figure 1.

Figure 1. Distribution of cases based on age and sex treated in March to July 2020 in Ulin District Hospital, Banjarmasin



Covid-19 pattern based on clinical symptoms

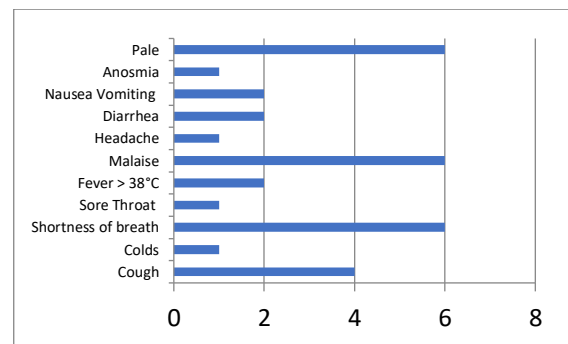
Following are the results of clinical symptoms research experienced by pediatric patients who were hospitalized in March to July 2020 there were 14 people who entered with clinical symptoms. (Table 2)

Table 2. Clinical symptoms of Children with Covid 19 at RSUD ULIN Banjarmasin

Clinical Symptoms	Number of Patients
Cough	4
Colds	1
Shortness of breath	6
Sore Throat	1
Fever > 38°C	2
Malaise	6
Headache	1
Diarrhea	2
Nausea Vomiting	2
Anosmia	1
Pale	6

Inpatients who had complaints at the time of entry were 14 people with several clinical symptoms as in table 2. There were a total number of children treated with pneumonia based on clinical and investigative investigations, 10 with 8 males and 2 females. Of the 6 patients diagnosed with pneumonia, they have the initial complaint of spasms. For many pale complaints occur in patients with hematological disorders such as thalassemia. The distribution of cases based on clinical symptoms can be seen in Figure 2.

Figure 2. Distribution of cases based on clinical symptoms treated from March to July 2020 in Ulin City Hospital Banjarmasin



COVID Pattern 19 Based on comorbid

Following are the results of comorbid studies experienced by pediatric patients who were hospitalized in March to July 2020 there were as many as 12 people who entered with clinical symptoms (Table 3)

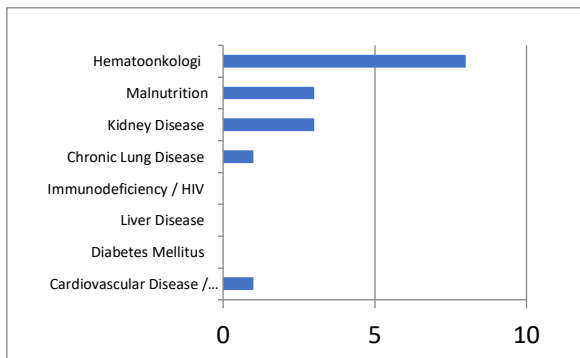
Table 3. Distribution of the number of patients based on comorbidities at RSUD ULIN Banjarmasin

Comorbid	Number of Patients
Cardiovascular Disease / Hypertension	1
Diabetes Mellitus	0
Liver Disease	0
Immunodeficiency / HIV	0
Chronic Lung Disease	1
Kidney Disease	3
Malnutrition	3

Hematoonkologi	8
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Inpatients who have a total co-morbid of 12 people with multiple comorbidities as in table 3. The total number of patients who died while being treated was 4 patients with the percentage of death counted from the percentage of covid-19 patient death cases divided by the total number of covid- cases 19 of which have been treated at Ulin Hospital Banjarmasin City as many as 22% and these patients have comorbid more than 2 of them kidney disease, poor nutrition, cardiovascular disease / hypertension. In COVID 19 patients with comorbid malignancies or haematological disorders no patients died, patients came to continue chemotherapy or transfusion. The distribution of cases based on clinical symptoms can be seen in Figure 3.

Figure 3. Distribution of cases based on comorbidities treated from March to July 2020 in Ulin District Hospital, Banjarmasin



Children with COVID 19 children Based on laboratory results

Following are the results of supporting examinations of pediatric patients who were hospitalized in March to July 2020. (Table 4)

Table 4. Children with COVID 19 cases based on laboratory results

Laboratory Results	Total patients examined	Number of Patients
Anemia (hb< 10 g/dl)	18	7
Leukocytosis (>10.500/ul)	18	4
Leukopenia (< 4.000/ul)	18	2
Thrombocytosis (>450.000/ul)	18	3

Thrombocytopenia (<150.000/ul)	18	3
Lymphopenia	18	1
Neutropenia	18	7
CRP (> 6 mg/L)	12	2
LDH (> 220 U/L)	14	12
LED (>20 mm/hour)	5	3
Troponin (8-29 ng/L)	4	0
D-Dimers (>0,22 mg/L)	7	6
Ferritin (21,81 - 274,66 ng/ml)	5	5
PT > 13,5 seconds	10	0
APTT > 37 seconds	10	0
GFR <90 ml / minute / 1.73m2	15	3
Increased transaminase enzymes	15	2

In children treated at Ulin City Hospital, Banjarmasin, South Kalimantan, a significant change was the increase in LDH and D-Dimers with a percentage of 85.71%. In 4 patients died there was a picture of anemia, thrombocytopenia, increased LDH, decreased GFR <90 ml / Minute / 1.73m2.

DISCUSSION

In a study (Dong, 2020) about epidemiological characteristics in 2143 COVID 19 pediatric patients in China. There were 731 (34.1%) laboratory confirmed cases and 1412 (65.9%) suspected cases. The mean age of all patients was 7 years (interquartile range: 2-13), and 1213 cases (56.6%) were boys. More than 90% of all patients are asymptomatic, mild or moderate cases. The average time from the beginning of the disease to the diagnosis is 2 days (range: 0 to 42 days). There is a rapid increase in disease in the initial stages of the epidemic and then gradually and stably reducing. The disease spread rapidly from Hubei Province to the surrounding provinces over time. More children are infected in Hubei province than any other province. Children of all ages appear to be susceptible to COVID-19, and there are no significant sex differences.⁴

UNICEF reporting world confirmed cases by sex, found a mixed picture, with three countries

reporting more cases among women, and nine finding more cases among men. Sex (biology) certainly plays a role. Differences in the immune system between men and women are well explained, and are known to contribute to the response to infectious diseases. However, biological explanations are likely only part of what drives differences in results. In six countries that reported COVID-19 mortality data by sex, evidence on various health behaviors, illnesses and life expectancy tended to show a worse picture for men than for women.^{4,5}

The results showed in March to July 2020, the total number of pediatric patients treated at Ulin Hospital in Banjarmasin City was 18 people with the majority of COVID cases 19 and the death rate occurred in males more than in females. The review (Lu et al, 2020) on 72,314 cases by the Chinese Center for Disease Control and Prevention shows that fewer than 1% of cases occur in children younger than 10 years. To determine the spectrum of disease in children, 171 children were infected with SARS-CoV-2 and were treated at the Children's Hospital of Wuhan, classified as <1 year old by 31 children, aged 1-5 years by 40 children, aged 6 - 10 years as many as 58 children, aged 11-15 years as many as 42 children. Obtained from these results the average age of children experiencing COVID 19 is 6.4 years. In the Regulation of the Minister of Health of the Republic of Indonesia Number 25 of 2014 what is meant by a child is a person who is up to the age of 18, including children who are still in the womb. School-age children are children more than 6 years old before 18 years of age. Teenagers are the age group of 10 years to 18 years.^{6,7}

The distribution pattern of covid-19 cases in March to July 2020 in Ulin City Hospital Banjarmasin, mostly in children aged 11-18 years. With an average age of 10.4 years. Judging from the average age of children both from previous studies and from the results of the Ulin District Hospital in Banjarmasin, the

incidents occurred in many school-aged children and teenagers. Can be caused by exposure and more contact with activities outside the home. In a systematic review by Ludvigsson, 2020 most of the deaths and critical illness reported in children are due to the underlying comorbidities. In another study, three of 171 children with COVID-19 needed intensive care support and invasive mechanical ventilation. All three have pre-existing conditions, such as hydronephrosis, leukemia and intussusception. In another report on the characteristics of eight children with severe COVID-19, two of them three children who remain critically ill, and continue to require intensive care at the time of reporting, have comorbidities that have already there before. These include acute lymphoblastic leukemia and lacrimal sac disorders. In a pandemic special management is needed for children with chronic conditions that already exist to minimize the risk of developing critical illness or death. These conditions include diabetes, adrenal insufficiency, chronic kidney failure, chronic pulmonary disorders, cancer, immune deficiency and chronic neurological disorders.⁸

The Covid-19 pattern is based on comorbidities in children treated at Ulin City Hospital in Banjarmasin, South Kalimantan, namely marasmic type malnutrition status, chronic and acute kidney failure, leukemia malignancies or haematological disorders such as thalassemia, tuberculosis. Of the 14 patients treated there were pediatric patients with more than 2 comorbid patients with 3 more men than women. Pediatric patients with clinical and radiological examinations support the diagnosis of pneumonia as many as 7 out of the 14 total patients treated or about 50% of cases. Pediatric patients who died as many as 4 patients who died had more than 2 comorbid including kidney failure, poor nutrition, cardiovascular disorders / hypertension.^{6,8}

Early studies in the adult population found elevated liver enzymes, anemia and increased inflammatory markers,

such as sedimentation rates, C-reactive protein, procalcitonin and sometimes hyperglycemia. Laboratory marker data in children with COVID-19 are rare. The study by Henry et al summarizing the findings of 12 different studies in 66 children, that 69.2% of children had normal leukocytes and neutrophilia (4.6%) and neutropenia (6.0%) were rare. Only two children (3.0%) had lymphocytopenia. C-reactive protein and procalcitonin are increased in 13.6% and 10.6% of cases, lymphocytopenia is seen in 3.5% of children. Severe cases of COVID-19 have been linked to increased levels of procalcitonin. Study of 171 children, of which only 3.5% had lymphocytopenia, 52 and 3.0% in the case series published by Henry et al.⁹

LDH is an intracellular enzyme found in cells in almost all organ systems, which catalyzes the conversion of pyruvate and lactate, with NADH and NAD⁺ interconversion. This enzyme is composed of two main subunits (ie, A and B), and exists in humans in five isozymes separate (LDH-1 in cardiomyocytes, LDH-2 in the reticuloendothelial system, LDH-3 in pneumocytes, LDH-4 in the kidneys and pancreas, and LDH-5 in the liver and striated muscles). Although LDH has traditionally been used as a marker of heart damage since the 1960s, abnormal values can occur due to multiple organ injury and decreased oxygenation by upregulation of the glycolytic pathway. Extracellular acidic pH due to increased lactate from infections and tissue injuries triggers activation of metalloproteases and increases macrophages mediated by angiogenesis. Severe infections can cause cytokines Mediated tissue damage and LDH release. Because LDH is present in the lung tissue (isozyme 3), patients with severe infection COVID -19, releasing greater amounts of LDH in circulation, as a severe form of interstitial pneumonia, often develop into acute respiratory distress syndrome, is a hallmark of the disease this.¹⁰

However, the contribution of different LDH isoenzymes to the increase in LDH observed in COVID-19 has not been determined. In addition, LDH

levels increase in thrombotic microangiopathies, which are associated with kidney failure and myocardial injury. Increased D-dimers and thrombocytopenia in patients with severe COVID-19 have also been reported, which suggests a state of hypercoagulation might contribute to disease severity and mortality. Many studies have found LDH to be a predictor of disease severity. In children who were treated at Ulin City Hospital, Banjarmasin, South Kalimantan, a significant change was the increase in LDH and D-Dimers with a percentage of 85.71%. In 4 patients died there was a picture of anemia, thrombocytopenia, increased LDH, decreased GFR <90 ml / Minute / 1.73m².

CONCLUSION

COVID pattern 19 March to July 2020 in Ulin City Hospital Banjarmasin according to gender occurred most in the male sex, most occurred at the age of 11-18 years with an average age of 10.4 years. Most comorbidities are malignant or haematological disorders. The number of patients with pneumonia is 55.56% of cases. Laboratory results that significantly increased were LDH and D-Dimer levels. Need further research along with an increase in the number of inpatient cases at Ulin City Hospital Banjarmasin.

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