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CASE REPORT

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**Table 1. Complete blood count results**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>21/11/2021</th>
<th>10/12/2021</th>
<th>11/1/2022</th>
<th>Reference Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemoglobin</td>
<td>10.6</td>
<td>10.4</td>
<td>11.1</td>
<td>10.1-12.9 g/dL</td>
</tr>
<tr>
<td>RBC</td>
<td>3.74</td>
<td>3.80</td>
<td>4.21</td>
<td>3.6-5.2x10⁶</td>
</tr>
<tr>
<td>HCT</td>
<td>30.4</td>
<td>30.0</td>
<td>33.2</td>
<td>35-43%</td>
</tr>
<tr>
<td>MCV</td>
<td>81.2</td>
<td>79.1</td>
<td>78.7</td>
<td>74-102fL</td>
</tr>
<tr>
<td>MCH</td>
<td>28.4</td>
<td>27.5</td>
<td>26.4</td>
<td>23-31pg</td>
</tr>
<tr>
<td>MCHC</td>
<td>35.0</td>
<td>34.8</td>
<td>33.5</td>
<td>28-32g/dL</td>
</tr>
<tr>
<td>RDW</td>
<td>13.8</td>
<td>14.5</td>
<td>15.3</td>
<td>11.5-14.5%</td>
</tr>
<tr>
<td>WBC</td>
<td>11.57</td>
<td>8.32</td>
<td>12.67</td>
<td>6-17.5x10⁹/µL</td>
</tr>
<tr>
<td>PLT</td>
<td>335</td>
<td>791</td>
<td>479</td>
<td>150-400x10⁶/µL</td>
</tr>
<tr>
<td>Eosinophils</td>
<td>1.2</td>
<td>7.2</td>
<td>2.4</td>
<td>1-5%</td>
</tr>
<tr>
<td>Basophils</td>
<td>0.2</td>
<td>0.3</td>
<td>0.1</td>
<td>0-1%</td>
</tr>
<tr>
<td>Neutrophils</td>
<td>62.9</td>
<td>29.6</td>
<td>38.7</td>
<td>17-60%</td>
</tr>
<tr>
<td>Lymphocytes</td>
<td>30.1</td>
<td>54.2</td>
<td>52.9</td>
<td>20-70%</td>
</tr>
<tr>
<td>Monocytes</td>
<td>5.6</td>
<td>8.7</td>
<td>5.9</td>
<td>1-11%</td>
</tr>
</tbody>
</table>

**Figure 1.** Clinical manifestations of Kawasaki disease. (A) Bilateral non-purulent conjunctivitis. (B) Erythema and cracked lips. (C) Polymorphous rash on the body, back, and legs. (D) Skin exfoliation on the fingers.

Guerin (BCG) scars were found.

During hospitalization, laboratory findings revealed hemoglobin (HGB) of 10.6 g/dL, white blood cell count (WBC) of 11,570/µL, platelet (PLT) of 335,000/µL, C-Reactive Protein (CRP) 84mg/dL, Antigen Non-Structural-1 Dengue (NS-1) test negative and SARS-COV2 Antigen test negative. The fever didn’t subside after administration of antipyretics. We consulted a pediatric cardiologist and planned for an echocardiography examination. The echocardiography was done with the result that he had minimal pericardial effusion and normal coronary size. With a Harada score of 4, the patient was diagnosed with Kawasaki disease.

Management for the patient were breastfeeding, infusion of dextrose 5% with sodium chloride (Na Cl) 0.22% in amount of 10 ml/hour, Paracetamol infusion 10mg/body weight/ times every 6 hours, Intravenous Immunoglobulin (IVIg) single dose of 2gr/body weight for 12 hours and 25mg/body weight once daily of Acetylsalicylic acid orally. There was no side effect of acetylsalicylic acid occurred. The symptoms resolved and disappeared 5 days after being hospitalized. The patient was allowed to be discharged with a low dose of Acetylsalicylic acid 4 mg/body weight per day orally and controlled routinely by a pediatrician.

Following the patient’s condition on December 10, 2021. On physical examination, we found signs of skin exfoliation on the fingers and toes, and enlarged cervical lymph nodes disappeared. The laboratory examinations showed hemoglobin (HGB) of 10.4 g/dL, white blood cell count (WBC) of 8,320/µL and platelet (PLT) of 791,000/µL (Table 1). Echocardiography examination results were normal heart and coronary without an aneurysm. The patient was treated with Acetylsalicylic acid 4 mg/body weight per day orally and advised to follow up the next month.

Following the patient’s condition on January 11, 2022, he had no complaints, and the physical examination was normal. The laboratory results were hemoglobin (HGB) of 11.1 g/dL, white blood cell count (WBC) of 12,670/µL, and platelet (PLT) of 479,000/µL (Table 1). The echocardiography examination result was normal heart structure and function, normal coronary. The prognosis of our case was good, and he was successfully treated with good results.
Our patient is a four-month-old Indonesian-Chinese male infant who presented in the emergency room with the diagnosis of Kawasaki disease. The incidence of Kawasaki disease is predominantly in male infants, with a male-to-female ratio of approximately 1.5:1. The gender difference in this disease is unclear. A study by Kwon et al. reported that Kawasaki disease is associated with gene polymorphism in males but not females. The incidence rate of Kawasaki disease is higher in Asian countries than in American and European countries. The peak incidence of Kawasaki disease is more common in young children from 6 months to 5 years of age. Study by Chang et al. showed that approximately 17% of Kawasaki disease occur in below 6 months infants. This study, similar to the study conducted by Singh et al., showed Kawasaki disease is most seen in those below 6 months of age, thereby resulting in delayed diagnoses.

The group of children aged 1-2 years is an age group that is susceptible to Kawasaki disease because the body's immunity is not yet perfect. Children under one year of age have antibodies obtained from the mother's body, and children over two years of age experience the body's immune system starting to develop better. The guideline for the diagnosis, treatment and long-term management of Kawasaki disease is according to The American Heart Association (AHA) in 2004. The patient met four of five diagnostic criteria for Kawasaki disease. Diagnostic criteria for Kawasaki disease are fever for at least five days and following at least four of five clinical features such as (1) changes in the extremities such as edema and/or erythema of the hands and feet in the acute phase, periangual desquamation in the subacute phase (2) polymorphic skin rash, typically a diffuse maculopapular eruption on the trunk, extremities, and perineal region (3) painless, exude bilateral bulbar conjunctival injections (4) changes in the oropharyngeal mucosa, such as erythema, fissures, desquamation of the lips, and strawberry tongue (5) cervical lymphadenopathy, more than 1.5 cm, usually unilateral. Other diagnostic criteria are fever for at least five days and two or three clinical features with clinical findings of coronary artery abnormalities on echocardiography.7,9

The Harada risk score is used to estimate the risk of developing a coronary aneurysm and the indications for treatment with IVIG in Kawasaki disease. Harada's score consisted of (1) leukocytes >12,000/µL, (2) Platelets <350,000/µL, (3) CRP >3 mg/dL, (4) Hematocrit <35%, (5) Albumin <3.5 gr/dL, (6) Age ≤ 12 months, and (7) Male gender. The presence of at least 4 points out of 7 points indicates a high risk of coronary aneurysm.10 In this case, the patient has a four positive Harada score, which means a high risk of coronary aneurysm and thrombocytosis found during the follow-up period. Our patient did not have any cardiac complications due to the early diagnosis and the prompt treatment that the patient got in the early phase of the disease. Young children have a higher risk of developing coronary artery aneurysms. The incidence of coronary artery aneurysms reported in young children is about 4.7% versus 3.1% in older children. Incomplete Kawasaki disease has more severe coronary abnormalities than complete Kawasaki disease.11

In this case, the patient was administered immediate high-dose IVIg and aspirin therapy. The patient had a good response to therapy. IVIg therapy has been shown to reduce acute inflammation and coronary aneurysm rates from 20-25% to <5%. Administering IVIg, a single dose of 2g/body weight for 12 hours, will reduce fever and improve the patient's clinical condition.12,13 Approximately 25% of untreated patients will develop an aneurysm coroner. The rate of developing coroner aneurysms is decreased by 3-5% in a patient given the treatment of IVIg. In a study by Akca et al., around 10% - 20% of the Kawasaki disease cases reported being resistant to IVIg treatment. IVIg resistance is defined as a persistent fever that occurs at least 36 hours after administering the first IVIg infusion.14 Another concern, patients administering high-dose Aspirin must be aware of the risk of developing Reye syndrome. Abnormalities of liver function and altered mental status are commonly found in Reye syndrome patients.15 Low-dose Aspirin therapy hasn't been associated with Reye syndrome.8

The prognosis of a patient with Kawasaki disease is good if the patient gets promptly treated and appropriately so that the manifestations of the disease gradually decrease and resolve without sequelae. If treatment is not appropriate, most of the acute stages of patients with Kawasaki disease can experience coronary artery dilatation occurring around 30% - 50%, and about a quarter who are still untreated can develop complications of Kawasaki disease such as coronary artery aneurysm, coronary artery thrombosis, myopericarditis, heart failure, and sudden death.13,16

The limitation of the Kawasaki disease cases is in diagnosis by a physician because of rare cases. Almost all cases of high fever with rash are commonly associated with infection cases, and the differential diagnosis of Kawasaki disease case is too often ignored.

CONCLUSION

Kawasaki disease has been reported in a 4-month-old boy with typical clinical manifestations and successfully treated with good results. Kawasaki disease is an acute vasculitis disease whose etiology is unclear. It has various clinical manifestations that appear according to the phase of the disease. Early diagnosis and prompt treatment are essential to prevent severe complications of Kawasaki disease, such as coronary aneurysms and coronary artery thrombosis. Administration of IVIg and Aspirin is very beneficial in reducing the symptoms and the risk of complications of Kawasaki disease.
CASE REPORT

AUTHOR CONTRIBUTION
All authors contributed equally to the content of the study.

REFERENCES

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