

Features of patients with malaria treated at the Department of Child Health Cipto Mangunkusumo Hospital, Jakarta

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ABSTRACT

Background Malaria is endemic throughout the tropical areas of the world. In Jakarta, one of the cities in Indonesia that has been declared to be free of malaria, malaria was found in 1044 patients from 1974 to 1990. All patients were infected in other areas.

Objective To describe the clinical features of malaria in the Department of Child Health, Cipto Mangunkusumo Hospital, Jakarta.

Methods A retrospective study was carried out on all patients with malaria treated at the Department of Child Health, Cipto Mangunkusumo Hospital, Jakarta, from January 1995 to December 2000.

Results There were 10 inpatients and 5 outpatients with malaria eligible in this study. Most patients (13) were boys, and 8 patients aged 5-9 years. We found falciparum malaria in 5, one of which with cerebral malaria, vivax in 3 patients, and mixed infection in 4 patients. In 3 patients, the type of malaria could not be detected. Three out of the referred patients were referred with the diagnosis of leukemia. Fever, splenomegaly, and pale were found in most patients. All inpatients recovered completely on discharge.

Conclusions In malaria-free areas, all patients were infected in other areas and some were referred with misdiagnoses. Malaria should be considered in patients with fever or pale and organomegaly [*Paediatr Indones* 2002;42:217-219].

Keywords: malaria, fever, pale, organomegaly, chloroquin, quinine, primaquine

Malaria remains the most important parasitic cause of death in humans and spreads throughout the world, especially in the tropical areas such as Indonesia.^{1,2} Nearly 40% of the world's inhabitants live in a broad tropical belt teeming with malaria. Each

year, there are 300-400 million new cases of malaria and 1.5 to 2.7 million deaths, especially in children less than 5 year old.¹⁻⁴

Malaria especially attacks people living in rural area. In Jakarta, which has been declared to be free from malaria since 1959, as many as 1044 patients were documented from 1974 to 1990.⁵ There were 15 patients treated at the Department of Child Health Cipto Mangunkusumo Hospital Jakarta between 1995 and 2000, all were infected in other areas. Some patients were referred with misdiagnosis. Description of clinical features of malaria treated at our department may represent features of the disease in children in other malaria-free areas.

Methods

A retrospective study was carried out on all patients with malaria treated at the Department of Child Health Cipto Mangunkusumo Hospital, Jakarta from January 1995 to December 2000. There were 10

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inpatients and 5 outpatients with malaria during that period. All data were obtained from medical records.

Results and Discussion

We grouped patients into 4 age groups; 5 patients were of < 1 year age, 2 patients were of 1-4 year age group, 6 patients were of 5-9 year age group, and 2 patients were of > 9 year age group. Thirteen patients were boys and 2 were girls. It has been known that the prevalence of malaria varies according to age and gender, and is associated with immune status and exposure to mosquito bites. In endemic areas, malaria is an important cause of pediatric deaths.^{4,7,8} In our series most (six) patients belonged to 5-9 year age group, and 5 patients were < 1 year old. In contrast, a study in Brazil showed only 1% patients were in < 1 year old and 9.3% were in < 10 years old.⁹ Studies in Tanzania⁴ and Brazil⁹ showed that most patients were boys (53% and 70.2%, respectively).

There were 5 patients with falciparum malaria, 3 patients with vivax malaria and 4 patients with mixed infection (falciparum and vivax malaria). The remaining 3 patients were treated in outpatient clinic and were diagnosed clinically with negative blood smear findings. The diagnosis was made by clinical judgement; i.e., coming from endemic area, occurrence of typical malaria paroxysmal fever (3 patients), a previous history of malaria (1 patient), malaria in a close relative (1 patient), splenomegaly (2 patients), and pale (1 patient). A negative findings of thick and thin blood smears cannot exclude malaria.^{2,3,6,7} The blood smear were intended to be repeated on the next day, but no one came for follow up. Two patients came three days after, recovered symptomatically and the blood smear examination showed negative results.

Malnutrition was found in 9 patients, while other 6 patients were in good nutritional status. Poor nutritional status was seen in one patient of severe falciparum malaria with complications. Study in Tanzania showed that children with poor nutritional status were at high risk of complications, even death, once they were infected by malaria.⁴

Of the 15 patients, 8 were referred patients and 7 came by themselves. Of the 8 referred patients, 2 were referred from regional hospitals, 2 from hospitals in Jakarta, and 4 from private practitioners. The referred

diagnoses were leukemia (3 patients), severe anemia (2 patients), thalassemia (1 patient), cerebral malaria and acute renal failure (1 patient), and bicytopenia (1 patient). Only 1 patient with cerebral malaria referred by private practitioner was diagnosed correctly. Misdiagnosis may be caused by the similarity of clinical findings among those diseases. The diagnosis for malaria is based on clinical findings and/or microscopic demonstration of intra-erythrocytic parasites in Giemsa-stained thick and thin smears of fresh, finger-prick blood.^{2,6,7} This test is simple, easy, inexpensive, safe,² and can even be done in primary health care.

Three patients came from Purworejo and 3 from Lampung. Others came from Palembang (2 patients), Mid Java mountains (1), South Sulawesi (1), Belitung (1), Lebak (1), Bengkulu (1), Lahat (1), and Medan (1). Purworejo is one of the 20 regencies in Java – Bali with potential transmission of malaria.¹⁰

Similar to that reported in literature,² the most common clinical findings were fever (14 patients), splenomegaly (12), and pale (11). Severe clinical findings such as convulsion, altered mental status, ascites, melena and oliguria were found in a patient of severe falciparum malaria.

Laboratory findings revealed anemia in 10 patients, leukopenia in 4, leukocytosis in 2, and trombocytopenia in 1 patient. Study in Tanzania showed that anemia were detected in 44% patients.⁴ It is stated in the literature that leukopenia was more common than leukocytosis.⁸

In this study, duration of admission varied from 3 to 27 days. Most patients were admitted to hospital for no longer than 7 days. Admission of longer than 21 days was caused by misdiagnosis as leukemia. A patient with severe falciparum malaria was diagnosed correctly on admission and adequate treatment had been given immediately with good outcome.

Fourteen patients were given chloroquine as the first line treatment.^{1,2,8} The first dose was 10 mg/kg, followed by 5 mg/kg body weight after 6, 24, and 48 hours with total dose of 25 mg/kg.¹ Quinine dihydrochloride and quinine sulfate were used as the first line treatment in a patient with cerebral malaria. The dosage of quinine dihydrochloride was 30 mg/kg per day in dextrose 10%. One third of daily dose was given over 2-4 hours and repeated every 8 hours until oral therapy with quinine sulfate could be started (maximum 1800 mg/day).^{1,6}

Five patients were treated with pyrimethamine-sulfadoxine after failed in chloroquine base therapy. The dosage varied according to age. Primaquine was administered to 10 patients as prevention of relapse and transmission. Primaquine was not given to 5 patients younger than 1 year old to avoid the side effect of hemolysis.^{11,12} Primaquine is recommended for prevention of relapses in vivax malaria and as antigame-tocytes in falciparum malaria.

Of all patients, there was only one patient with acute renal failure, liver insufficiency and cerebral malaria. The complications were found during admission. All patients recovered completely on discharge.

In conclusion, in a malaria-free area, all patients were infected in other area and some were referred with misdiagnosis. Malaria should be considered in patients with fever or pale and organomegaly; diagnostic work-up for malaria in those patients is a must in order to establish diagnosis and to give adequate treatment.

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