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Retrospective Evaluation of Malaria Hospitalized in Our Clinic

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ABSTRACT:

Retrospective evaluation of malaria hospitalized in our clinic

Objective: Malaria is an infectious disease caused by the parasite Plasmodium genus, transmitted to humans by mosquitoes, genus Anopheles. Although there is a significant reduction in the number of malaria cases in our country, malaria still remains important globally. In this study we aimed to evaluate malaria cases hospitalized in our hospital between the years 2006-2015, retrospectively.

Material and Method: Fifteen adult patients diagnosed with malaria followed at our clinic between January 2006 - January 2015, were evaluated retrospectively for their epidemiological, clinical, laboratory findings, diagnosis, treatment and prognosis.

Results: All of the patients were male. The average age was 30.5. The average length of stay of patients was 7.8 days. Fourteen cases reported a history of travel abroad (Africa, Pakistan, Afghanistan) and one to Southeastern Anatolia Region. None of the patients had chemoprophylaxis. In eight cases Plasmodium vivax, in seven Plasmodium falciparum was detected. Fever (100%), splenomegaly (67%), hepatomegaly (46%), anemia (66%), leukopenia (40%), thrombocytopenia (100%), elevated sedimentation rate (65%), elevated liver function tests (53%), and increased serum creatinine (26%) levels were found in patients.

Conclusion: Malaria should be in the first line for the differential diagnosis of fever in all cases with a history of travel to endemic area. Chemoprophylaxis for individuals who travel to these regions and personal protection measures are very important.

Keywords: Epidemiology, Istanbul, malaria

ÖZET:

Kliniğimizde yatarak takip edilen sıtma olgularının retrospektif değerlendirilmesi

Amaç: Sıtma, plasmodium cinsi parazitlerin neden olduğu, anofel cinsi sivrisinekler tarafından insanlara bulaştırılan bir enfeksiyon hastalığıdır. Ülkemizde tespit edilen sıtmalı olgu sayısında belirgin bir azalma görülmekle birlikte dünyada sıtma halen önemini korumaktadır. Bu çalışmada İstanbul'da bir eğitim hastanesi olan hastanemizde 2006-2015 yılları arasında izlenen sıtma olgularının retrospektif olarak değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntem: Ocak 2006 - Ocak 2015 tarihleri arasında kliniğimizde sıtma tanısı ile izlenen 15 erişkin hasta epidemiyolojik özellikleri, klinik, laboratuvar bulguları, tanı, tedavi ve prognozları yönünden retrospektif olarak değerlendirilmiştir.

Bulgular: Olguların tümü erkekti. Ortalama yaş 30,5 olarak saptandı. Hastaların ortalama yatış süresi 7,8 gün idi. Olguların 14'ünde yurt dışı seyahat öyküsü (Afrika, Pakistan, Afganistan), birinde Güneydoğu Anadolu Bölgesi seyahat öyküsü mevcuttu. Hiçbirine kemoproflaksi uygulanmamıştı. Olguların 8'inde Plasmodium vivax, 7'sinde P. falciparum, saptandı. Hastaların klinik ve laboratuar bulgularında ateş (%100), splenomegali (%67), hepatomegali (%46), anemi (%66), lökopeni (%40), trombositopeni (%100), sedimentasyon yüksekliği (%65), karaciğer fonksiyon testlerinde yükselme (%53), serum kreatininde artış (%26) saptandı.

Sonuç: Endemik bölgelere seyahat öyküsü olan her ateşli olguda sıtma ayırıcı tanıda ilk sırada yer almalıdır. Bu bölgelere seyahat edecek bireylere kemoproflaksi uygulanması ve kişisel korunma önlemlerinin sağlanması çok önemlidir.

Anahtar kelimeler: Epidemiyoloji, İstanbul, sıtma

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INTRODUCTION

Malaria is an infectious disease caused by the parasite Plasmodium genus, transmitted to humans by mosquitoes, genus Anopheles. Although effective treatment is present, it kills more than one million people in the world in a year (1). Although nearly half of the world's population is at risk of malaria, African children constitute the majority of deaths due to the disease (2). The malaria parasites causing infection in humans are Plasmodium vivax, Plasmodium ovale, Plasmodium falciparum, Plasmodium malaria and Plasmodium knowlesi. From malaria species, the most severe clinic and deaths from malaria is caused by P. falciparum. However, the course of the disease reported in the recent years was severe, in cases caused by Plasmodium knowlesi (3). P.vivax is the species that causes most commonly malaria in Turkey and in the world. P. falciparum is seen more in tropical regions and Africa, it is rare in Turkey (4). With an effective malaria control program, there is a significant reduction in the number of malaria cases detected in our country, however, it is an infectious disease which still maintains its importance today. Although malaria is endemic in Mediterranean and Southeast Anatolian regions in our country, sporadic cases continue to be seen today with the increased domestic and overseas travels (5).

In this study, the malaria cases who were followed between years 2006-2015 in our hospital, which is a training hospital in Istanbul were examined restrospectively.

MATERIAL AND METHOD

Fifteen adult patients diagnosed with malaria followed at Şişli Hamidiye Etfal Training and Research Hospital, Infectious Diseases and Clinical Microbiology Clinic between January 2006 - January 2015, were evaluated retrospectively for their epidemiological characteristics, clinical and laboratory findings, diagnosis, treatment and prognosis. The diagnosis was confirmed by the examination of thin and thick blood smear preparations taken from the patients and by seeing the parasites with light microscopy.

RESULTS

Fifteen adult patients who were followed with malaria diagnosis between January 2006 - January 2015 at Sisli Hamidiye Etfal Training and Research Hospital Infectious Diseases and Clinical Microbiology Clinic were detected. All patients were male, the mean age was 30.5 (20-54 years) years. Thirteen of the cases were admitted in summer and autumn, and 2 admitted in winter. The distribution of patients over years is shown in Figure-1. The number of cases are seen to increase in the recent years.

The average length of stay of patients was 7.8 days. Fourteen cases reported a history of travel abroad (Africa, Pakistan, Afghanistan) and one to Southeastern Anatolia Region. None of the patients had chemoprophylaxis.

All of the patients had fever. In 10 patients, there

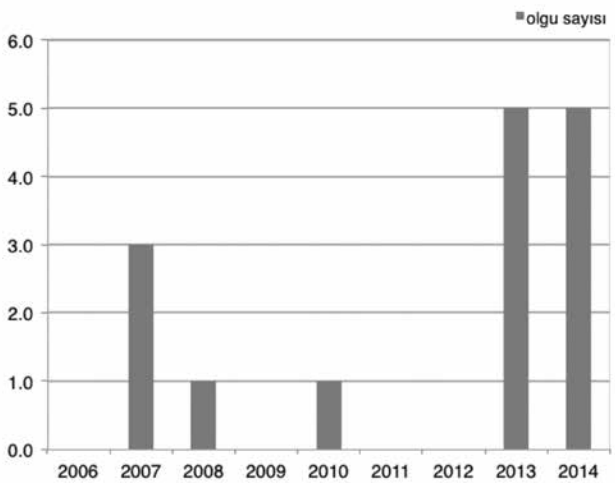

Figure-1: The distribution of cases over years

Table-1: The clinical and laboratory characteristics of the cases

Clinical/laboratory characteristics	%
Fever, chills, shaking	100
Thrombocytopenia	100
Splenomegaly	67
Anemia	66
Nausea, vomiting	60
Increased levels of liver function tests	53
Hepatomegaly	46
High Sedimentation rate	40
Leucopenia	40
High creatinine level	26

Table-2: Type of treatment used

Used treatment	Species	Number of cases
Atovaquone / Proguanil	P.falciparum	1
Quinine and Doxycycline	P.falciparum	1
	P.vivax	2
Primaquine and Artemether-Lumefantrine	P.vivax	1
Primaquine and Artemether	P.vivax	2
Doxycycline and Artemether	P.falciparum	4
Doxycycline and Artemether-Lumerfantrine	P.falciparum	1
Chloroquine and Primaquine	P.vivax	1
Mefloquine and Artemisinin	P.falciparum	1
Primaquine	P.vivax	1

were non-specific symptoms such as fatigue, muscle and joint pain, headache, and 9 patients described acute gastroenteritis-like symptoms. There was confusion present in one patient at the time of the presentation.

In the physical examination, all patients had fever, 10 patients had splenomegaly, 7 had hepatomegaly.

The findings and the laboratory results of the patients are shown in Table-1.

Eight patients were diagnosed with P. falciparum, and 7 with P. vivax. The medication of the patients were obtained from Malaria Control Department. The medications of the patients were summarized in Table 2. All patients achieved cure after the treatment.

A case followed for P.falciparum malaria was brought to the emergency department for fever and confusion. The patient who had high levels of creatinine, severe anemia and deep thrombocytopenia in his examinations, was started atovaquone-proguanil treatment and appropriate fluid replacement. The level of creatinine increased up to 5.4 mg/dl of the patient in his follow-up, but significantly improved after the treatment. The patient was discharged from the hospital at the 8th day of hospitalization with cure.

CONCLUSION

Malaria was one of the most important infections of our country, while with the struggle started in 1926, promising results were obtained. With the recommendations of World Helath Organization (WHO), after 1955, an intense activity has been started to eradicate malaria. Turkey, with an effective malaria control program, decreased the number of cases from 11381 cases in 2000 to only 9 cases in 2010, which constituted only the relapse patients, provided a 99% rate of decrease in malaria and has been categorized by WHO in the elimination phase (6,7). Even though there is a dramatic decline in the domestic malaria cases, in 2010, 78 cases, in 2011, 128 cases and in 2013, 285 cases with an overseas origin were reported. In a study conducted in Kocaeli, only 4 cases of malaria has been reported between 2008-2010, while between 2011-2013, 23 cases were diagnosed with malaria, and 70% of these cases were found to be cases with an overseas travel (4). With the increase in travels, the increase in cross-country labour mobility, and the migration to our country from Syria, malaria still remains important for our country. In our study also, 5 patients were being followed between 2006-2012 with a diagnosis of malaria, while between 2013-2014, 10 patients were diagnosed with malaria. Fourteen of the patients had a history of overseas travel.

The malaria cases can be seen at any age, while the majority of the cases in the studies were detected to be over 15 years old (8). The adults are thought to be affected more often due to more travels as a tourist or for work, and being more active in their work lives. The average age of the cases followed in our clinic was detected as 30.5 years.

Malaria is an infectious disease which can be seen in both gender, however, all of our cases were male. This situation can be explained with the more often traveling of men and more cross-country labour moblility (9).

The disease is reported to be more frequently seen

between May-November (5,10). In our study, 13 of the patients were seen to present in summer autumn seasons, and 2 in winter.

Mild fever, chills, sweating, hedache and fatigue are the symptoms detectable in many patients. It can be confused with influenza and gastroenteritis, causing fatigue, nausea, muscle pain and sometimes diarrhea. Fever is the main clinical manifestation of malaria (5,11). Fever classically arises every 48 hours in P.falciparum, P.vivax ve P.ovale infections, and every 72 hours in P.malariae infection (1,6). Fever was detected in all of the cases (100%) in our study. Ten patients described nonspecific symptoms such as fatigue, muscle and joint pain and headache, and 9 patients descirbed acute gastroenteritis-like symptoms. Our patient was brought to the hospital because of confusion.

Splenomegaly, hepatomegaly, jaundice and abdominal tenderness can be determined in physical examination of the patients. Splenomegaly is a result of increased erythrocyte destruction, as well as a measure showing the duration of the disease. In 2 studies conducted in our country, Mert et al. (10) detected splenomegaly in 91% of their cases and hepatomegaly in 55%, while İnan et al. (12) detected splenomegaly in 72%. In our study, splenomegaly was detected in 10 patients (67%), and in 7 patients (46%), hepatomegaly was detected.

As a laboratory finding in malaria, anemia, leukopenia, or thrombocytopenia can be seen. In the conducted studies, anemia has been reported in 67-70% of malaria cases, leukopenia in 32-40% and thrombocytopenia in 48-70% (10,12). Of our cases, thrombocytopenia was detected in 15 patients (100%), anemia in 10 patients (66%), and leukopenia in 6 patients (40%). However no evidence of skin lesions such as petechiae or purpura, or bleeding symptoms were detected. Besides, in malaria series, increased AST/ALT levels found in 30-62% of tha cases have been reported (10,11). This rate was detected as 53% in our study. In addition, increased creatinine levels in 26%, and increased sedimentation in 40% of our cases were detected.

The most common species that causes malaria in Turkey and in the world is P. vivax. P. falciparum is seen more in the tropical regions and in Africa, and seen less frequently in Turkey (13). In the previous studies, the disease agent has been detected as P. vivax with a rate of 95-100%, while in the recent studies, the rate of P.falciparum is reported as 30-40% (14). In our study, in 8 of the patients (53%) P. falciparum, and in 7 (47%) P.vivax were diagnosed. In all of the patients with P.falciparum diagnosis, there was a history of travel to endemic regions for this disease.

As a result; in people who travel to endemic regions for malaria domestically, or after overseas travel, or in people living in these regions, in the presence of fever, malaria is one of the diagnosis to be considered as a priority. In patients with fever who are admitted to the emergency department, detailed anamnesis and if necessary, repeating it over and over may be lifesaver. Besides, chemoprophylaxis should be given to individuals who would travel to endemic regions for malaria, and the cases coming from these regions should be treated considering the resistance to drugs status of that region.

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