Brief Report

Trend and manifestations of falciparum malaria in a tertiary care hospital of India

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Abstract

Background: The recent focus is on the increase in the burden of falciparum cases with a varied spectrum of presentation and outcome, especially in developing countries like India. This study was undertaken to analyze the trend and manifestations of falciparum malaria in a tertiary care hospital.

Materials and Methods: This descriptive study was carried out at the Gauhati Government Medical College and Hospital from June 2006 to May 2007. The data were collected on demographic and time characteristics, clinical and laboratory findings, the outcome of disease and expressed in proportion or percentages.

Results: Out of the 100 cases, around 2nd/3rd (63%) of cases were in the age group of 15–30 years and the mean age was found to be 29.51 years. About 66% of them were males. Clinical presentations included pain abdomen (42, 42%), nausea and vomiting (35, 35%), jaundice (34, 34%), oliguria (24, 24%), altered sensorium (24, 24%), breathing difficulty (10, 10%), and seizures (5, 5%). Number of cases and mortality were more with a peak in the month of May and September. Manifestations of severe falciparum malaria included hepatopathy (38%), renal failure (28%), shock (9%), acute respiratory distress syndrome (7%), hypoglycemia (3%), and severe anemia (1%). Eighty-two cases (82%) recovered and 18 cases (18%) expired.

Conclusion: Falciparum malaria is more among younger adult age group and males. Complications and mortality are also more due to falciparum malaria.

Key Words: Falciparum malaria, India, manifestations, trend

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INTRODUCTION

The recent important public health issue is an increase in the trend of falciparum malaria especially in developing countries like India. Malaria is endemic in most North Eastern States of India with plasmodium falciparum being the predominant parasite.[1-4] With this background, this study was conducted to assess the trend and manifestations of falciparum malaria in a tertiary care hospital in North-east part of India.

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MATERIALS AND METHODS

This descriptive study analyzed the trend and manifestations of falciparum malaria in Gauhati Government Medical College and Hospital, a tertiary care center in Assam. The data pertaining to the falciparum malaria cases reported from June 2006 to May 2007 were collected. The Institutional Ethical Committee clearance was taken before the study. The patient characteristics

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were documented using a structured *proforma* for patient's demographic profile, clinical findings, investigations, treatment and complications. Diagnosis of falciparum malaria in suspected cases presenting with a history of fever, headache, chills, jaundice, or other symptoms was confirmed by examination of thin and thick blood film and/or antibody-based rapid diagnostic testing. Antibody-based ParaSight *F* test is more sensitive than the peripheral blood film examination and was done in all the patients presenting with above symptoms in the outpatient department or casualty. Baseline and liver function tests of all cases was done and recorded. Ultrasound examination was done to know the liver size and echotexture.

RESULTS

About 100 patients aged 15 years and above were reported and evaluated by history, clinical examination and laboratory investigations. About 66 patients were males, and 34 patients were females with a male to female ratio of 1.94:1. The age group included from 15 to 60 years with a mean age of 29.51 years. Maximum number of cases was seen in the age group of 15–29 years (63%). Fever was present in all cases, followed by pain abdomen (42%), nausea and vomiting (35%), jaundice (34%), oliguria (24%), altered sensorium (24%), breathing difficulty (10%), seizures (5%), and bleeding manifestation (4%). The majority of the patients (64%) had a duration of fever of 6–10 days. Eleven patients had other associated diseases such as diabetes (2), hypertension (5), chronic obstructive pulmonary disease (4), and ischemic heart disease (3). Quinine was the most common drug used (76%), followed by artesunate (24%). Complications that include hepatopathy and renal failure were found among one-third of subjects [Table 1]. Cases were reported more commonly during the month of May–July (32%) and September–November (33%) [Figure 1]. 82 cases (82%) recovered, and 18 cases (18%) expired.

Table 1: Pattern of falciparum malaria among the subjects

Variables	Number and percentage (*n*=100)
Age in years	
15-29	63
30-44	28
45-60	9
Sex	
Male	66
Female	34
Clinical presentation	
Fever	100
Jaundice	34
Oliguria	24
Pain abdomen	42
Nausea/vomiting	35
Breathing difficulty	10
Seizures	5
Bleeding manifestation	4
Organomegaly (clinically)	
Hepatomegaly alone	14
Splenomegaly alone	18
Hepatosplenomegaly	31
No organomegaly	37
Organomegaly (ultrasonographically)	
Hepatomegaly alone	37
Splenomegaly alone	8
Hepatosplenomegaly	63
No organomegaly	16
Complications	
Malarial hepatopathy	38
Renal failure	28
Hypoglycemia	9
Shock	7
Severe anemia	3
ARDS	1

ARDS: Acute respiratory distress syndrome

DISCUSSION

A recent study has reported a male to female ratio of 2.6:1.[5] Other studies also reported that the disease is affecting mainly young and working individuals.[5,6] Fever is the most common symptom and the majority of the patients presented within a week of onset of symptoms.[1] 34 cases (34%) had clinical jaundice in this study. There is a wide variation in the incidence of jaundice in malaria,[5,7-9] which may be explained by many reasons including the endemicity of the disease in the region from which it is reported, jaundice due to liver involvement or hemolysis and the age group which is affected. The overall mortality in 2001 and 1994 was 10.93% and 11.09% respectively while this study reported it as 18%.[10] In spite of advances in detection and management of malaria, deaths due to its complications are still high.

There is a bimodal raise in the number of malaria cases with the onset in premonsoon and post-monsoon season and reporting all over the year is a matter of concern. This may be because of favorable environmental conditions due to rainfall which increases the mosquito density level with the transmission of disease. This study population in India reflects the referred and admitted cases in this tertiary center. A large community-based study will help to determine the exact nature of the pattern of disease.

CONCLUSION

As the reporting of cases is more among younger age group and males, they require special attention which

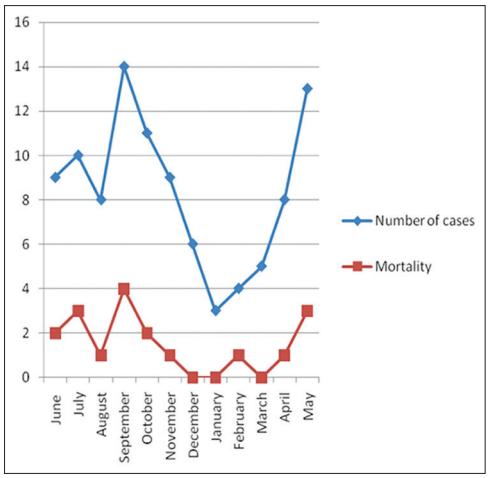

Figure 1: Time trend of number of cases and mortality

may help to prevent complications and mortality in this vulnerable group.

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Conflicts of interest

There are no conflicts of interest.

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