

## ORIGINAL RESEARCH

## A Study of Clinical Profile of Patients with Malaria

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## ABSTRACT

**Introduction:** Malaria still continues to be a major killer of mankind especially in developing countries. Almost all deaths and severe disease are due to *Plasmodium Falciparum*. Aim of the study was to study A clinical profile of patients with malaria

**Material and method:** 100 cases of *Plasmodium falciparum* malaria diagnosed by peripheral smear examination or by immuno-chromatographic test – falci checker by rapid optimal test were included in the study. Data was collected by history and clinical examination. Antimalarial treatment was given to all patients.

**Results:** The incidence of *Falciparum* malaria is increasing. Males are affected more than females. Maximum incidence was noted in the age group 21-30 years. Maximum incidence is in months of July-December. Intermittent fever with shivering chills was the presenting feature in majority of patients. Fever, Anaemia, splenomegaly were common.

**Conclusion:** Cerebral malaria is the commonest complication encountered.

**Keywords:** *Falciparum* Malaria; Cerebral Malaria; clinical profile

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## INTRODUCTION

Malaria is an important parasitic disease of mankind

known to exist in India for thousands of years. In spite of phenomenal progress in medical science in latter half of the century, malaria still continues to be a major killer of mankind especially in developing and developed countries.<sup>1,2</sup>

Malaria was nearly eradicated from India in the early 1960s but the disease has re-emerged as a major public health problem. Malaria has returned in the 1990s with new features not witnessed during the pre-eradication days and malaria control has become a complex enterprise.<sup>3</sup>

The incidence of malaria is increasing in other areas and the malaria at one time a rural disease has diversified into various types like urban malaria, malaria in project areas, etc.

Most of the malarial deaths are due to *Plasmodium falciparum* infection because of its severe and complicated clinical presentation. It presents uncomplicated forms such as cerebral malaria, acute renal failure, jaundice, anaemia, hypoglycemia, etc.

Hence, the study was undertaken to study the clinical profile of patients with malaria.

## METHODOLOGY

The present work is a prospective study conducted in M.N.R medical college & Hospital, Sanga Reddy, Andhra Pradesh during the period between October 2010 to October 2012. This study consists of 100 cases satisfying inclusion and exclusion

criteria. All patients were informed about the study and informed consent was obtained.

Approval of institutional ethical committee was taken.

## Inclusion Criteria

1. All cases of *Plasmodium Falciparum* malaria diagnosed by peripheral smear examination or by immunochromatographic test – Falci Check or by Rapid optimal test.

## Exclusion Criteria

1. Patients taking hepatotoxic drugs
2. Patients having evidence of liver disease prior to illness.
3. Patients with history of alcoholism.

4. Patients on anti-diabetic drugs.
5. Diabetes mellitus
6. Unexplained hepatomegaly

The clinical data of all case were gathered as per proforma appended. In all cases, a detailed history was taken, which included duration of fever, degree and nature of fever, whether associated with chills and rigors or not. Also about other symptoms like headache, myalgia, nausea, vomiting, abdominal pain, diarrhea, jaundice, history of breathlessness, altered sensorium, convulsions, cough, bleeding tendencies, dark coloured urine or decrease urine output were enquired.

Past history of malaria or blood transfusion and treatment history in detail noted.

Also family history of similar illness and whether patient is using any personal protection measures were enquired.

Detailed physical examination included assessment of body temperature, pulse, blood pressure, pallor, and jaundice and hydration status. Systemic examination included abdominal examination to assess hepatomegaly and splenomegaly and details like size, consistency. Tenderness and surface were noted. Examination of the central nervous system, respiratory system and cardiovascular system was done in every case.

### Investigations

All these patients were subjected to slide test for thick and thin smear as well as immunochromatographic test, ROT or Falci check.

Depending upon the clinical presentation, specific antimalarial drugs such as quinine plus clindamycin, Artesunate plus sulfadoxine /pyrimethamine or Artesunate plus clindamycin, Artesunate plus Doxycycline, artesunate is given in respective route of therapy. Supportive therapy with intravenous fluids, blood transfusion, antipyretics given depending on individual patients requirements.

### RESULTS

Total number of medical admission in various medical wards in M.N.R Medical College & Hospital Sanga Reddy, Andhra Pradesh from October 2010 to October 2012 were 18,413. Among them number of malaria cases were 276, out of which 121 cases were of *Plasmodium falciparum*.

The study consists of 100 patients of *Plasmodium falciparum* malaria satisfying inclusion and exclusion criteria admitted in M.N.R. Medical College & Hospital, Sanga Reddy, Andhra Pradesh. The study was done from October 2010 to October 2012.

In the present study, the youngest patient is 15 years old and oldest is 65 years old. Total numbers of male patients were 58 and females 42. The maximum numbers of patients (68) were in the age group of 21-40 years.

It is clear from above table that malaria incidence is highest during July to December period of year. This coincides with the rainy season when the breeding of mosquitoes is at its highest due to stagnation of water.

In the present study, fever present in 100 patients, 50 patients had symptoms of central nervous system, 66 patients had gastrointestinal symptoms, 42 patients had symptoms of liver biliary system, 8 patients had respiratory and genitourinary system.

Fever with chills was the commonest presentation in 94 cases followed by fever without chills in 6 cases. Intermittent fever was seen in 84 patients.

Pallor was commonest presentation, followed by icterus. Only 6 patients had hypotension.

In the present study, hepato-splenomegaly was the commonest presentation followed by splenomegaly, drowsiness and coma.

Age group (years)	Males	Females	Total	%
15-20	10	3	13	13
21-30	15	20	35	35
31-40	18	15	33	33
41-50	7	2	9	9
51-60	6	2	8	8
61-70	2	-	2	2
Total	58	42	100	100

**Table-1:** Showing Age and Sex Distribution

Month & year	Number of cases	%
Oct-Dec 2010	18	18
Jan-June 2011	6	6
July-Dec 2011	44	44
Jan-June 2012	12	12
July-Oct 2012	20	20

**Table-2:** Showing incidence of malaria in 6 months interval

Symptoms	Number of cases	%
Fever	100	100
Central nervous system	50	50
Gastrointestinal	66	66
Liver and biliary system	42	42
Respiratory system	8	8
Genitor urinary system	8	8

**Table-3:** Distribution of patients as per their Symptoms and involvement of system of the body

## DISCUSSION

The observations made in 100 cases of Falciparum Malaria, admitted to the MNR Medical college & Hospital, Sanga Reddy. The study period is October 2010 to October 2012 (2 years) and study details are discussed and compared with other studies.

In the present study, the percentage of males is 58 percent and females 42%. Similar findings were reported by Mehta SR et al<sup>1</sup> who found that males were 71% and females were 29%. Sharma AK et al<sup>2</sup> reported that males were 83% and females were 17%. Similarly

Type of fever	With chills & rigor	Without chills & rigor	Total	%
Intermittent fever	82	2	84	84
Continuous fever	10	4	14	14
Remittent fever	2	-	2	2
Total	94	6	100	100

**Table-4:** Showing types of fever complained by patients

Signs	Number	%
Pallor	62	62
Icterus	60	60
Blood pressure: 80-90 mmHg Systolic	6	6
Blood pressure: > 90 mmHg Systolic	94	94
Herpes labialis	2	2
Pedal edema	6	6
Clubbing	10	10

**Table-5:** Showing findings in general examination

Clinical findings	Number	%
Hepatomegaly	4	4
Splenomegaly	40	40
Pain abdomen	34	34
Crepitations	12	12
Wheeze	6	6
Coma	12	12
Drowsiness	26	26
Altered sensorium	4	4
Neck rigidity	4	4
Diminished reflexes	6	6

**Table-6:** Showing findings in systemic examination

Author	Hepatomegaly %	Splenomegaly %	hepatosplenomegaly %
Gopinathan VP et al <sup>5</sup>	27	26	43
Bajiya HN et al <sup>6</sup>	9.1	63	20.5
Uppal SS et al <sup>7</sup>	49.15	47.46	32.2
Present study	4	40	44

**Table-7: Signs per Abdomen**

Dash SC et al<sup>3</sup> also observed similar findings.

From the above studies, it is consistent that the present study is comparable with the other studies, that the incidence of falciparum malaria is more common in males than in females.

In the present study, the incidence of Falciparum malaria is maximum in the age groups of 21-40 years, which is also comparable with the studies carried out by Mehta SR et al<sup>4</sup>, Sharma AK et al<sup>2</sup> and Dash SC et al.<sup>3</sup>

## SYMPTOMATOLOGY

### Fever

The study by Mehta SR et al<sup>4</sup> noted fever as the most common presenting symptom in 89.52% cases. Of them 25.2% had intermittent fever, 10.4% had continuous fever, 11.9% had remittent fever, 40.47% had other low grades of irregular fever.

In the study series by Gopinathan VP et al<sup>5</sup>, fever was present in 97.8% of cases and all had intermittent fever with chills and rigors.

In the present study, fever is present in 100% of the cases. Of them 84% had intermittent fever, 14% had continuous fever, 2% had remittent fever. With above studies, fever is the most common presenting symptom in falciparum malaria.

But the type of fever varied from each study showing that typical history of intermittent fever with chills and rigors in a malaria patient is not common now a days.

### Central Nervous System Symptoms:

The study series by Mehta SR et al<sup>1</sup> noted convulsions, altered sensorium and coma in 3.05% of patients. The study by Mehta SR et al<sup>4</sup> noted altered sensorium in 2.85% and unconsciousness in 0.95%. The study by Gopinathan VP et al<sup>5</sup> noted altered sensorium in 8.8%. The study series by Bajiya HN et al<sup>6</sup> of cerebral malaria noted unconsciousness in 100% of cases.

In the present study, altered sensorium is seen in 4%, drowsiness in 26% and coma in 12%. In the present study, the cerebral symptoms are present in 42% of cases.

### Gastrointestinal, Liver and Biliary System Symptoms

Gopinathan VP et al<sup>5</sup> noted vomiting in 42.2%, loose

motions in 2.8%, Jaundice in 3.88% and pain abdomen in none of patients.

Mehta SR<sup>5</sup> et al noted vomiting in 8.47%, loose motions in 5.64%, jaundice in 2.58% and pain abdomen in 3.29%.

Bajiya HN et al<sup>6</sup> noted vomiting in 64.8%, loose motions in 29.8% and jaundice in 30.81%.

In the present study, vomiting is seen in 58% of cases, pain abdomen in 34%, jaundice in 42% of cases and loose motions in none of the patients.

### Cough

Cough was a symptom in 4.47% of patients in the study by Mehta SR et al<sup>1</sup> and 8.69% in the study by Uppal SS et al.<sup>7</sup> In the present study, cough is seen in 4 of cases and no patient had breathlessness.

Dysuria:

It was noted in 26.6% of the patients in the study by Gopinathan VP et al.<sup>5</sup> In the present study, it is noted in 2% of cases.

In the present study, headache is noted in 62% of cases. Headache may be a more common feature of uncomplicated falciparum malaria as in the study by Gopinathan VP et al<sup>5</sup> who reported it as 69%. Mehta SR et al<sup>5</sup> found it in 17.50%. Bajiya HN et al<sup>6</sup> reported to be present in 64.80%.

### Signs

#### *Anemia (Pallor)*

It is noted in 86.48% of cases in the study by Bajiya HN<sup>6</sup> et al. In the present study it is noted in 62% of cases. Gopinathan VP et al<sup>5</sup> found this in 3.90% of cases. Mehta SR et al<sup>4</sup> in 2.77%, Mehta SR et al<sup>1</sup> in 2.58%, Bajiya HN et al<sup>6</sup> in 30.81%, Sharama AK et al<sup>2</sup> in 22.20%, Dash SC et al<sup>3</sup> in 100.00% of cases.

In the present study, icterus is seen in 60% of cases with above reported series, icterus may be seen in as low as 2.58% and as high as 100%.

#### Hypotension

It is observed in 9.40% of cases in the study by Gopinathan VP et al<sup>5</sup> and 10.8% in the study by Bajiya HN et al.<sup>6</sup> In the present study, hypotension (<90mm Hg systolic) was seen in 6% of cases.

#### Signs per Abdomen

As seen from the above table, the present study is comparable with the studies by other authors.

### CONCLUSION

The incidence of Falciparum malaria is increasing.

Males are affected more than females. Maximum incidence was noted in the age group 21-30 years. Maximum incidence is in months of July-December. Intermittent fever with shaking chills was the presenting feature in majority of patients. Fever, Anaemia, splenomegaly still holds as a clinical triad in diagnosis of malaria. The incidence of complicated malaria is increasing.

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