INTRODUCTION

Malaria, a protean disease is widely prevalent throughout South East Asia, Africa and Latin America. Malaria is endemic in Nepal and at present >70% of the total population of Nepal are at risk of disease and it is prevalent up to 4000 ft. The clinical presentations may vary and prognosis is worse when it is associated with anemia, hepatosplenomegaly, and cerebral and renal involvement. Although renal involvement in malaria is usually observed with Plasmodium falciparum and Plasmodium malariae infection. Plasmodium vivax has also been incriminated in recent studies. In general, falciparum is associated with acute renal failure (ARF) and P. malariae with Chronic Progressive Glomerulopathy.

The hepatic involvement is usually due to intravascular hemolysis, disseminated intravascular coagulation and rarely due to malaria hepatitis.

OBJECTIVE

To study the clinical profile, biochemical parameters and outcomes in malarial patients.

MATERIALS AND METHODS

A total of 46 patients admitted with diagnosis of malaria in the department of medicine in B P Koirala Institute of Health Sciences, Dharan between April 2002 to April 2003 were analyzed. The case sheets of the patients were retrieved from the medical record section using ICD 10 code. Detail clinical features, biochemical parameters and outcomes of the patients were recorded. Analysis was done by using Microsoft XL 2000.

Patients having malarial parasite either on peripheral blood smear or buffycoat was considered as malarial patients. Acute renal failure was considered according to recently revised WHO criteria of serum creatinine >3mg/dl (265?mol/L) with/without urine output less than 400 ml per 24 hrs despite rehydration.

Key Words: Malaria, Organ Failure.
RESULTS

Out of forty-six adult malarial patients (M=28, F=18) most were in age group 15-34 years (n=30) as shown in Fig. 1. The presenting features are as depicted in table I. The mean duration of febrile illness was 10 days at the time of presentation (Fig. 2). 68% of the patients were anemic, of whom 5% had severe anemia (hemoglobin below 5gm/dl). Out of 24 patients having their bilirubin measured, 10 (41.6%) had total bilirubin greater than 3mg/dl indicating hepatic dysfunction (Fig. 3) while 9 patients had elevated transaminase and alkaline phosphatase. Out of 39 patients of whom serum creatinine was estimated 10 (25.6%) had acute renal failure (Fig. 4). All the patients with ARF had oligo/anuria. 76% improved with dialysis, antimalarial and other supportive managements. Thirty six patients were treated with quinine while remaining patients received artemisinin derivatives. Out of 7 (15%) death during therapy 3 had ARF.

DISCUSSION

Malaria is a major public health problem in Nepal including other countries of Southeast Asia, Vietnam and Africa, which is endemic for the disease. The situation is more alarming with increasing incidence of falciparum malaria in the region. Early identification of malaria and related condition and their management is extremely important to prevent morbidity and mortality related to it. ARF is a common complication in falciparum malaria infection and occurs almost

Table I: Distribution of Presenting Complains (n=46)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Presenting complaints</th>
<th>No of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fever</td>
<td>46</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Altered Consciousness</td>
<td>21</td>
<td>45.65</td>
</tr>
<tr>
<td>3</td>
<td>Cough</td>
<td>11</td>
<td>23.91</td>
</tr>
<tr>
<td>4</td>
<td>Oligo-anuria</td>
<td>10</td>
<td>21.73</td>
</tr>
<tr>
<td>5</td>
<td>Dyspnoea</td>
<td>4</td>
<td>8.69</td>
</tr>
<tr>
<td>6</td>
<td>Bleeding manifestation</td>
<td>3</td>
<td>6.52</td>
</tr>
<tr>
<td>7</td>
<td>Algid malaria</td>
<td>1</td>
<td>2.17</td>
</tr>
</tbody>
</table>
the disease in this region needs to be reevaluated. However, till date no such studies have been done and this is the first of its kind. So the true incidence and prevalence of the disease in this region needs to be reevaluated.

Patients with ARF are usually oliguric (<400ml/dl) or anuric (<50ml/dl). However, it may be normal or increased and duration of oliguric phase usually lasts for a few days to several weeks. In our study all patients with ARF were oligo/anuric.

Earlier studies in Thailand have shown that 30% of adult patients with cerebral malaria had serum creatinine levels higher than 2mg/dl. Such patients had higher incidence of hypoglycemia, jaundice, more prolonged coma and pulmonary edema. Similar studies recently done in Vietnam showed that about 50% of patients had serum creatinine levels greater than 2mg/dl. What is more interesting is, 63% of the patients with ARF were jaundiced, compared with 20% of the ones without ARF. In our study, all the patients with ARF had hepatic dysfunction i.e. raised total bilirubin level > 3 mg/dl.

Hyperbilirubinemia usually results from the complication of hemolysis and intrahepatic cholestasis rather than hepatocellular necrosis. The true malarial hepatitis is usually distinguished by more than three fold elevation of ALT and is rare. In our study, 41.6% had hyperbilirubinemia according to WHO criteria of severe and complicated malaria.

ARF is a serious complication with a reported mortality of 15 to 33%. In our case mortality was 15% (n=7) of which 3 (i.e. 43%) were having ARF.

Thus in conclusion, malaria is an important clinical entity in these regions and the physicians should be vigilant about the deteriorating kidney function as early initiation of antimalarial drugs and dialysis can be life saving.

REFERENCES