Renal Complications in Malaria

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ABSTRACT

Background: The clinical manifestation of malaria has changed with more patients presenting with systemic manifestations. Malarial acute renal failure (MARF) is an emerging problem associated with high morbidity and mortality, but can be diagnosed and treated during the early stages.

Objectives: To (1) describe the biochemical renal parameters among malaria patients and (2) study the association between biochemical renal parameters and plasmodium species.

Method: 50 adult in-patients, who were diagnosed to be affected by malaria and utilizing the health facilities of a teaching medical college hospital in Bangalore and those who consented and satisfied the inclusion criteria, were included in the study. Detailed history, general physical and systemic examination and necessary pathological, biochemical renal laboratory parameters and radiological investigations were done.

Results: Among the 50 patients, 37 (74%) were males and 13 (26%) were females. Thirty seven (74%) patients were infected with P. falciparum, nine (18%) were infected with P. vivax and four (8%) had mixed infections. Twenty three (46%) patients had increased blood creatinine of more than 3mg/dL and urine output of less than 400 ml/day were classified as suffering from malaria acute renal failure (MARF) and among those with MARF 17 (73.91%) had P. falciparum infection, two (8.69%) had P. vivax infection and four (17.39%) had mixed infection.

Conclusion: People infected with P. falciparum or mixed infections are at an increased risk of developing acute renal failure when compared to people infected with P. vivax. Alteration in blood urea, serum albumin and serum electrolytes are other early features suggestive of MARF.

Keywords: Malaria, Plasmodium Species, Acute Renal Failure

INTRODUCTION

Malaria is a vector-borne infectious disease, widespread in tropical and subtropical regions. Malaria is not only a cause for poverty but is also associated with poverty and a major deterrent to countries’ economic development.1

Malaria affects more commonly the poor nations and people of the low-socioeconomic status. It is among the top 10 killer diseases in the world and most deaths occur among children.1,2 Brazil, India and Sri Lanka contribute a major proportion of the disease incidence and prevalence following Africa.3,4

The pathology and pathophysiology trends of clinical manifestations of malaria in the recent years have changed with more and more patients presenting with systemic manifestations – cerebral malaria, jaundice and renal failure.2

In tropical countries, malarial acute renal failure (MARF) is an emerging problem coupled with high morbidity and mortality especially if the disease is not diagnosed and treated during the early stages.3 In this study malaria infected patients, with increased blood creatinine more than 3mg/dL and urine output of less than 400 ml/day, were considered to be suffering from malaria acute renal failure.6 It has been and will continues as the leading causes of ARF in South East Asia, Vietnam, India and Africa.5,6,8 Studies done in India have noted an increase in the prevalence of MARF from 6.66% in 1995 to 27% in 1999.5,6,8,11 Along