

Clinical outcome of malaria cases and malarial acute kidney injury in Hospital Serdang. A single center experience from 2007 till 2016

ABSTRACT

Introduction: Malaria, a common health problem in certain parts of the world, has a considerable morbidity and mortality. This study reports its clinical outcome as well as Acute Kidney Injury (AKI) outcome from a single tertiary hospital from 2007 till 2016.

Methods: All registered malaria cases with positive *Plasmodium (P) sp* from blood smears patients from hospital infection control database, were included in this study. History, examination, and baseline investigations recorded. Clinical outcome and AKI during stay was analysed using SPSS version 23, with Pearson Chi Square test. Statistical significance taken when p value < 0.05 .

Results: Seventy six malaria patients were recorded from January 2007 till December 2016 in Hospital Serdang. Majority were male (90.8%), young (31.9 ± 10 years), from Selangor (89.5%) and foreigners (74%). Foreigners were mainly (75%) from Africa (27%), Pakistan (27%) and Indonesia (21%). *P. Vivax* species recorded highest (55.3%), followed by *P. Falciparum* (28.9%), *P. Knowlesi* (7.9%), *P. Malariae* (6.6%), and *P. Ovale* (1.3%). All patients had fever, gastrointestinal symptoms (65.8%), central nervous symptom (43.4%), hepatosplenomegaly (25%) and oliguria (5.3%). Baseline laboratory investigations showed Hemoglobin 13.1 ± 2.1 g/dL, Platelet 86.9 ± 76.3 , Lactate Dehydrogenase 393.5 ± 176.1 U/L, Prothrombin time (PT) $17.1 \pm 8.8 \times 10^9$ /L, Bilirubin 31.5 ± 17.8 , Aspartate Trans-Aminase (AST) 51.4 ± 40.7 U/L, Alanine Aminotransferase (ALT) 52.9 ± 47.5 U/L, urea 5.1 ± 3.3 mmol/L, sodium (Na) 133.3 ± 3.7 mmol/L and Creatinine 86.0 ± 30.2 μ mol/L. Mean hospital stay was 6.3 ± 2.8 days. Two ICU admissions (2.6%) were recorded. Mortality rate and cerebral malaria were 1.3% each. Hemolysis and hepatitis seen in 35.5% and 27.6% patients respectively. Malarial AKI were recorded in 13 patients (17.1 %) with KDIGO AKI stage 1 (84.6%), stage 2 (7.7%) and stage 3 (7.7%). Among malarial AKI patients, one patient (7.7%) received dialysis, and twelve patients (92.3%) recovered renal function. Majority of laboratory features of malaria AKI showed proteinuria (100%), and hyperbilirubinemia (84.6%). Analysis of risk factors showed significant association of AST and male gender with malarial AKI.

Conclusion: Malaria may lead to significant morbidity and mortality. Prompt management with volume replacement, antimalarial and dialysis brings about recovery of renal function in malarial AKI.

Keyword: Malarial acute kidney injury; Clinical outcome; Risk factors; Recovery of renal function