

# FACTORS ASSOCIATED WITH ACUTE RENAL FAILURE IN ADULTS WITH SEVERE FALCIPARUM MALARIA

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**Abstract.** We conducted a retrospective study of patients with severe falciparum malaria to determine factors associated with malarial acute renal failure (MARF). We reviewed 262 medical records of adults hospitalized with severe falciparum malaria in Thailand from 2004 to 2008. The incidence of MARF in our study population was 44% (115/262); 75% (86/115) of these had MARF on admission and 25% (29/115) developed MARF during hospitalization. The majority of MARF patients presented in a hypercatabolic state (62%, 68/109) and were non-oliguric (48%, 55/115) or oliguric (44%, 51/115). Forty-six percent of MARF patients (53/115) required renal replacement therapy for a median duration of 4.5 days. Patients with MARF had significantly higher complication rates ( $p<0.001$ ), longer duration of hospitalization ( $p<0.001$ ) and a higher case fatality rate ( $p=0.001$ ). Using stepwise multiple logistic regression analysis by backward selection method, factors associated with MARF were advanced age [odds ratios (OR); 95% confidence intervals (CI) 1.037 (1.011-1.063),  $p=0.005$ ], being referred from another hospital [2.876 (1.447-5.714),  $p=0.003$ ], an elevated total bilirubin level [(1.168 (1.101-1.241),  $p<0.001$ ], requiring inotropic drugs [4.879 (2.255-10.557),  $p<0.001$ ] and developing a hospital acquired infection [3.425; 1.406-8.343,  $p=0.007$ ]. Clinicians should be aware of these factors associated with MARF.

**Keywords:** acute renal failure, severe malaria, falciparum malaria, associated factors

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