Pak J Kidney Diseases

From the Desk of Editor in Chief

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Malaria: Continues To Daunt Nephrologists

Malaria; an endemic through tropical region, despite being addressed widely and claimed about eradication repeatedly, still continues to infect and contribute to mortality in these countries. According to World health organization (WHO) report of 2024, estimated infected cases from 2000 were 2.2 billion with mortality of 12.7 million. For 2023 WHO estimate was 263 million cases and 5,97,000 deaths and about 95% of these deaths are in WHO Africa Region.[1]

Situation of malaria control program worsened during COVID-19 pandemic and disease burden which was brought to 4.8 before pandemic jumped to 7.8 % in 2022.[2]

Previously it was thought that clinically significant renal involvement is only associated with infections by *Plasmodium falciparum* and *malariae*, with latter causing an immune complex mediated glomerular disease, leading to nephrotic syndrome and *falciparum* producing only acute manifestations, ranging from asymptomatic urinary abnormalities and mild electrolyte disturbances to acute kidney injury (AKI) severe enough to require renal replacement therapy in some. But time has proven that once labelled "benign" the *vivax* species is not actually benign and found to cause not only AKI but sometimes irreversible AKI with cortical necrosis.[3]

At our institution over a span of 35 years we have seen more than 1,000 malarial (both *falciparum* and *vivax*) AKI patients which contributes about 8-12 % of total AKI population each year (unpublished data).

Malaria, the infection caused by infected anopheles mosquito bite is simple yet complicated to prevent. It requires awareness at mass level starting from prevention of stagnant water (where mosquito can breed), to use of repellents on exposed skin when going out, to use of mosquito nets at home while sleeping. spraying the interior of house with repellents and keeping windows and doors closed or covered with net. Wearing long sleeves and pants and socks particularly during peak hours of mosquito activity is also advisable among preventive measures.

Travelers to regions where malaria has endemicity are advised to take chemoprophylaxis. The choice of medication depends on factors like the specific destination, the traveler's health, and potential drug resistance patterns in the area. Common options include atovaquone-proguanil *250 mg/100 mg (1 tablet) PO daily*, beginning 1-2 days before travel to malaria-endemic area and continued until 7 days after return, or doxycycline or mefloquine.[4]

Recent talks are about use of malaria vaccines, RTS,S/ASO1 (Mosquirix), is the first vaccine approved for public use. It requires at least three doses in infants before age of 2, and a forth booster within 1-2 years. These vaccines have been reported to reduce hospital admissions with severe malaria up to 30%.[5]

The most effective malaria vaccine is R21/Matrix-M, with 77% efficacy shown in initial trials. It is the first vaccine that meets the World Health Organization's goal of a malaria vaccine with at least 77% efficacy and is recommended for prevention of *P. falciparum* in children living in endemic areas.[6,7]

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