ANTIMICROBIALS - I

ANTIMALARIAL DRUG THERAPY

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Abstract: Malaria is a major worldwide problem and a public health problem of developing countries like India. It is caused by intracellular Plasmodium protozoa transmitted to humans by the bite of female Anopheles mosquitos. Malaria is caused by four species of the genus P.vivax, P.falciparum, P.ovale, P.malariae and the fifth species P.knowlesi primarily an animal pathogen reported to cause malaria in South-East Asia especially, Borneo. The diagnosis is confirmed by identification of the organism in stained peripheral blood smear and treated by antimalarial drugs as per the situation.

Keywords: *Plasmodium infection, Treatment, Prophylaxis, Antimalarials.*

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Points to Remember

- Treatment regimens have been decided keeping the drug resistance pattern in that particular geographic area.
- For uncomplicated vivax malaria chloroquine plus primaquine is effective.
- Antimalarial drug combinations are now the recommended modality of treatment for *P.falciparum infection*.
- The following ACTs are presently use, Artesunate (AS) + Sulfadoxine-Pyrimethamine (SP), Artesunate + Mefloquine (MQ), Artemether + Lumefantrine.
- Artemether + Lumefantrine is the only form available as oral preparation and is well tolerated and effective against multidrug-resistant falciparum malaria.

References

- 1. Country profile: India. World Malaria Report 2018. World Health Organization. https://www.who.int/malaria/ publications/country-profiles/en/
- 2. National Strategic Plan for Malaria Elimination (2017-22). Directorate of National Vector Borne Disease Control Program. Directorate General of Health Services. New Delhi: Ministry of Health and Family Welfare, Govt. of India; 2017. http://www.indiaenvironmentportal.org.in/ content/445149/national-strategic-plan-for-malariaelimination-2017-22/
- Kundu R. Malaria. In: Gupta P, Menon PSN, Ramji S, Lodha R eds. PG Textbook of Pediatrics, 2nd edn. New Delhi: Jaypee; 2018; pp1232-1237.
- 4. Meshnick SR. Artemisinin: Mechanisms of action, resistance and toxicity. Int J Parasitol 2002; 32(13):1655-1660.
- World Health Organisation (WHO). Guidelines for the treatment of Malaria. 3rd edn. Geneva: World Health Organisation; 2015; pp23-25.
- 6. Marx A, Pewsner D, Egger M, Nüesch R, Bucher HC, Genton B, et al. Meta-analysis: accuracy of rapid tests for malaria in travellers returning from endemic areas. Ann Intern Med 2005; 142(10):836-846.
- 7. Moody A. Rapid diagnostic tests for malaria parasites. Clin Microbiol Rev 2002; 15(1):66-78.

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- 8. Mutabingwa TK, Anthony D, Heller A, Hallett R, Ahmed J, Drakeley C, et al. Amodiaquine alone, amodiaquine+ sulfadoxine-pyrimethamine, amodiaquine+ artesunate and artemether-lumefantrine for outpatient treatment of malaria in Tanzanian children: a four-arm randomised effectiveness trial. Lancet 2005; 365(9469): 1474-1480.
- 9. Rediscovering wormwood: qinghaosu for malaria. Lancet 1992; 339(8794):649-6451.
- Adjuik M, Babiker A, Garner P, Olliaro P, Taylor W, White N, International Artemisinin Study Group Artesunate combinations for treatment of malaria: meta-analysis. Lancet 2004; 363(9402):9-17.
- 11. Bassat Q. The use of artemether-lumefantrine for the treatment of uncomplicated Plasmodium vivax malaria. PLoS Negl Trop Dis 2011; 5(12):e1325.
- 12. Newton PN, Angus BJ, Chierakul W, Dondorp A, Ruangveerayuth R, Silamut K, et al. Randomised comparison of artesunate and quinine in the treatment of severe falciparum malaria. Clin Infect Dis 2003; 37:7-16.