Abstract

We report four cases of complicated malaria in Andhra Pradesh-Orissa border between July 2016 and December 2016, with apparent treatment failure with artemisinin drugs, and all showing parasitological clearance after quinine and clindamycin therapy. However, one case died due to complications of malaria. We highlight the need for increased monitoring and surveillance to identify artemisinin combination therapy resistance in other parts of India apart from Northeastern states. It is also essential to ensure rationale use of the existing antimalarial drugs.

Keywords: Artemisinin resistance, complicated malaria, falciparum malaria, parasitological clearance

INTRODUCTION

The emergence and spread of drug-resistant malaria represents a considerable challenge in controlling malaria. The World Health Organization (WHO) recommends use of artemisinin combination therapy (ACT) against *Plasmodium falciparum* (PF) malaria to ensure high cure rates and prevent development of resistance against artemisinin compounds. However, resistance to artemisinins has emerged in Thai-Cambodian and Thai-Myanmar border. Signs of resistance to the ACT - artesunate sulfadoxine pyrimethamine in PF has been observed in north-eastern states of India. There have been two case reports of artesunate resistance in India, occurring in Kolkata and Mumbai. We describe four cases of suspected artesunate-resistant malaria, of which three survived and one case died. These four cases were encountered over 5-month period, and all were from Andhra Pradesh-Orissa border province.

CASE REPORTS

Case 1

A 13-month-old male child from Koraput district, Orissa, was diagnosed to have malaria with smear positive for PF. He was treated with a 3-day course of oral artesunate-SP. In view of persistent fever and failure of parasite clearance after 3 days, he was administered second course of 3 days oral artesunate-SP. He was referred to our hospital in view of severe anemia and persistence of ring forms of PF in blood smear. He was started on parenteral quinine along with clindamycin and a dose of primaquine was administered. Serial peripheral smears were performed which showed parasitological clearance after 48 h of initiating therapy.

Case 2

An 8-year-old female child from Vizianagaram district, Andhra Pradesh, was admitted with fever for 10 days. PF rapid diagnostic test (RDT) was positive. She received injection artesunate for 3 days and SP was administered on day 2. In view of anemia and persistence of fever, she was referred to our hospital. Her peripheral smear confirmed ring forms of PF. Sickling test was negative. Probable artesunate resistance was suspected. Similar treatment with quinine, clindamycin, and primaquine was given. Smear after 72 h and on 28th day was negative for malarial parasites.

Case 3

A 12-year-old female child hailing from Visakhapatnam district, Andhra Pradesh, was admitted at the referral hospital for fever and icterus. She was started on intravenous (IV) artesunate, clindamycin treatment as RDT was positive for both PF and *Plasmodium vivax* malaria. She was referred after 3 days of treatment as she developed respiratory distress, hypotension,

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Akunuri, et al.: Early treatment failure of malaria after artesunate

References

1. Guidelines for the Treatment of Malaria. 2nd ed. World Health Organization; South-East Asia, 2010. ISBN: 9789241547925.

2. Miotto O, Almagro-Garcia J, Manske M, Macinnis B, Campino S, Rockett KA, et al. Multiple populations of artemisinin-resistant Plasmodium falciparum in Cambodia. Nat Genet 2013;45:648-55.

3. Dondorp AM, Nosten F, Yi P, Das D, Phyo AP, Tarning J, et al. Artemisinin resistance in Plasmodium falciparum malaria. N Engl J Med 2009;361:455-67.

4. Directorate of National Vector Borne Disease Control Programme Directorate General of Health Services Ministry of Health & Family Welfare Government of India. Operational Manual for Malaria Elimination in India. New Delhi; 2016.

5. Bhattacharyya N, Mukherjee H, Bose D, Roy S, Das S, Tripathy S, et al. Clinical case of artesunate resistant Plasmodium falciparum malaria in Kolkata: A first report. J Trop Dis 2014;2:128.

6. Gogtay NJ, Kadam VS, Karnad DR, Kanbur A, Kamtekar KD, Kshirsagar NA. Probable resistance to parenteral artemether in Plasmodium falciparum: Case reports from Mumbai (Bombay), India. Ann Trop Med Parasitol 2000;94:519-20.

7. Ashley EA, Dhorda M, Fairhurst RM, Amarantunga C, Lim P, Suon S, et al. Spread of artemisinin resistance in Plasmodium falciparum malaria. N Engl J Med 2014;371:411-23.

8. World Health Organisation. Artemisinin and artemisinin-based combination therapy resistance. Global Malaria Programme. Geneva; 2016.