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ePoster Viewing
Malaria

DELAYED HAEMOLYSIS AFTER PARENTERAL ARTESUNATE THERAPY FOR SEVERE MALARIA IN A RETURNING CANADIAN TRAVELER.

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Background

Since 2010, the World Health Organization (WHO) has recommended the use of artemesinin derivatives as the first-line treatment for severe malaria. Despite the low prevalence of severe malaria in Canada, parenteral artesunate is available across the country through the Canadian Malaria Network (CMN) in collaboration with Health Canada's Special Access Program. Recently, reports have been published from Europe and Asia of delayed haemolytic anaemia attributed to artesunate. No such experience has previously been reported from North America where the same product is used in both the US and Canada.

Methods

Inpatient and outpatient medical records and all laboratory results were reviewed.

Results/Case Summary

A 44 year old male presented to the Emergency Department in Alberta, Canada, with high grade fever, marked jaundice and confusion 4 days after returning from working in Cameroon. He had not been taking malaria chemoprophylaxis. He was admitted to the intensive care unit for severe malaria and was treated with parenteral artesunate with doses at 12 h, 24 h and 48 h post admission (total of 9.6 mg/kg) followed by 3 days of oral atovaquone 1 g/proguanil 400 mg daily. The *P. falciparum* parasitaemia peaked at 12.3%.

His haemoglobin began to slowly drop immediately after his admission, but numerous red cell transfusions were not required until the nadir was reached at 68 g/L on day 15. Haemolysis markers were initially positive, presumably due to his acute malaria infection, with his presenting total bilirubin at 634 µmol/L and LDH peaking at 1369 U/L. On day 2, the haptoglobin was undetectable. It became detectable again day 8 of admission, but was again below the level of detection (<0.10 g/L, normal 0.30-2.00 g/L) on day 23 and remained undetectable even at 32 days post admission. It finally had normalized at six weeks post admission. Between day 15 and 28, the patient received a total of 11 units of packed red blood cells before haematological recovery, and by day 47 his haemoglobin was up to 98 g/L. Iron studies, vitamin B12 and folate stores were not tested until the patient's anaemia was found to be quite prolonged, but were all normal. There was also no history to suggest blood loss with extensive investigation for a source, including colonoscopy and abdominal CT reported negative.

Conclusion

Our patient had documented haemolysis which persisted much longer than would be expected on the basis of malaria alone. Evidence appears to be accumulating to support an association between intravenous artesunate and delayed haemolysis. The mechanism remains unclear. All patients receiving intravenous artesunate should have systematic follow up of haemoglobin levels up to 4 weeks post treatment in order to identify potentially serious degrees of anaemia and to better characterize the frequency of this phenomenon.