

Severe hypothermia in dengue

Anila Chandy

Department of Internal Medicine, Miot Hospital, Manapakkam, Chennai, India

Key words Dengue; hypothermia

Among the causes of hypothermia, the well-known ones are severe sepsis, hypothyroidism, adrenal insufficiency, head injury and exposure to severe cold. Dengue can also present with hypothermia when the platelet count starts to drop. This could signify an alarming sign and caution the clinicians to monitor the patient carefully. A study by Lee *et al*¹ showed that the causes of fatality other than dengue shock syndrome in patients with severe dengue were hypothermia, leukocytosis and bandemia. When studying dengue related deaths in Puerto Rico, Rigau-Pérez & Laufer² found that sudden shift from fever to hypothermia was an alarm signal for severe dengue and dengue-related death in those tested positive for dengue.

The signs of imminent shock in dengue, attributable to sudden and large volume of body fluid losses into the extravascular compartment, are intense and continuous abdominal pain, frequent vomiting, as well as a sudden decrease in temperature leading to hypothermia³.

It was suggested by Tomashek *et al*⁴ that signs of hypothermia be noted with alarm in places like Puerto Rico where several cases go unrecognized and treatment is delayed, causing a high case fatality. This is because dengue is considered a cause of fever and few are aware of hypothermia associated with it, which is one of the risk factors for mortality. In the present study, a case with hypothermia in severe dengue is presented.

Case report

A 62-yr old man presented with an episode of syncope and extreme fatigue for 5-days following an acute febrile illness. He had not been on any medication. On examination his heart rate was 48/min and blood pressure was 100/60 mmHg. There was no postural drop in blood pressure. His temperature was 91.8°F. His platelet count was found to be 28,000/mm³. Dengue IgG and NS1 antigens were positive and dengue IgM was negative. His abdominal ultrasound showed mild ascites and bilateral pleural effusion while his echocardiogram was normal. He was diagnosed to have dengue and was managed conservatively. By Day 2, his symptoms had improved and

he started feeling more energetic. His temperature had risen to 94.8°F and his heart rate rose to 64/min. By Day 3, his temperature was 98.6°F. His platelet count steadily rose over the next 4-days and this coincided with resolution of symptoms, normalizing of body temperature and heart rate. C-reactive protein (CRP) was normal and cultures of blood and urine were sterile indicating that there was no sepsis. Other causes of hypothermia like hypothyroidism and Addison's disease were ruled out.

DISCUSSION

Our patient presented with severe hypothermia and associated bradycardia which resulted in syncope. He was monitored closely in the ICU and managed conservatively with intravenous fluids and warm blankets. The patient's temperature and heart rate rose to normal by the Day 3 and this coincided with elevation in platelet count and symptomatic improvement. While dengue lab markers were positive, other causes of hypothermia like sepsis, hypothyroidism and adrenal insufficiency were ruled out.

In conclusion, dengue can present with severe hypothermia. Such patients may present a diagnostic dilemma. Therefore, a patient presenting with hypothermia and recent history of fever, it is necessary to evaluate him for dengue. Also, in a patient presenting with syncope due to sinus bradycardia, core body temperature evaluation is necessary.

ACKNOWLEDGEMENT

I would like to thank Dr Gayathri Purnima and Dr Hiranmayi Seshu for their advice and help with this manuscript. I would also like to thank Prof. Mohandas, Managing Director of MIOT Hospitals for his support.

REFERENCES

1. Lee, K, Liu JW, Yang KD. Fatal dengue hemorrhagic fever in adults: Emphasizing the evolutionary pre-fatal clinical and labo-

- ratory manifestations. *PLoS Negl Trop Dis* 2012; 6(2): e1532.
2. Rigau-Pérez JG, Laufer MK. Dengue-related deaths in Puerto Rico, 1992–1996: Diagnosis and clinical alarm signals. *Clin Infect Dis* 2006; 42(9): 1241–6.
 3. Martínez Torres E. Dengue. *Estudios Avanzados* 2008; 22(64): 33–52.
 4. Tomashek KM, Gregory CJ, Sánchez AR, Bartek MA, Rivera EJG, Hunsperger E, *et al.* Dengue deaths in Puerto Rico: Lessons learned from the 2007 epidemic. *PLoS Negl Trop Dis* 2012; 6(4): e1614.

Correspondence to: Dr Anila Chandy, Department of Internal Medicine, Miot Hospital, Manapakkam, Chennai–600 032, India.
E-mail: chandyanila@gmail.com

Received: 5 February 2014

Accepted in revised form: 17 February 2014