
To the Editors:

A case of self-limiting Coomb's negative haemolytic anaemia following dengue shock syndrome

In addition to dengue haemorrhagic fever and dengue shock syndrome, involvement of other organ systems has been reported in dengue fever. Hepatic dysfunction and neurological manifestations are common [1,2]. We report a patient who developed a self-limiting Coomb's negative haemolytic anaemia following dengue shock syndrome.

A 27-year old woman who was clinically diagnosed to have dengue fever developed shock (dengue shock syndrome) 12 h after admission to hospital. She was transferred to the intensive care unit and resuscitated. On the sixth day after admission dengue IgM antibodies became positive. She recovered and her haemoglobin was 12 g/dL and platelet count was $140 \times 10^9/L$ on the seventh day. During the next 2 days she became increasingly pale without evidence of haemorrhage and developed icterus. The haemoglobin had dropped to 6 g/dL. The following investigations were done: platelet count $205 \times 10^9/L$, blood picture normochromic normocytic red cells with marked red cell agglutination, reticulocyte count 8.2%, white cell count $6.4 \times 10^9/L$, total bilirubin 168.9 $\mu\text{mol/L}$ (indirect fraction 100 $\mu\text{mol/L}$), ESR 98 mm in the first hour, direct and indirect Coomb's tests repeatedly negative. Her prothrombin time/INR, partial thromboplastin time, C-reactive protein and D-dimer levels were normal. Liver enzymes were mildly elevated (SGPT=56 U/L and SGOT=94 U/L). *Mycoplasma pneumoniae*, Epstein-Barr IgM and IgG antibodies, antinuclear factor and anti-dsDNA antibodies were negative. Chest x-ray, abdominal ultrasound scan, blood urea, serum electrolytes and serum creatinine were also normal.

She recovered spontaneously and her haemoglobin was 10.2 g/dL when she was discharged from the hospital 6 days after haemolysis was first detected. Two weeks after admission dengue antibodies showed an IgG titre of

more than 2560, confirming recent secondary dengue infection. At follow up she was asymptomatic and had normal haematological and biochemical parameters.

This patient had a self-limiting haemolytic anaemia 6 days after dengue shock syndrome. An extensive literature survey did not reveal previous reports of such an association. We have excluded, as far as possible, other likely causes of haemolysis. The mechanism of the haemolytic anaemia is not clear. Cold-type autoimmune haemolytic anaemia is a recognised complication of certain infections, characterised by destruction of antibody-coated red blood cells. The mechanism that initiates production of autoantibodies remains unclear. Regulatory cytokines are thought to play an important role, and activation of immunoregulatory T lymphocyte subsets has been observed in dengue infection [3]. In our patient, an immune mechanism was considered because of delay between the infection and onset of haemolysis. Furthermore, her blood film was suggestive of a cold-type autoimmune haemolysis. However, the Coomb's test was repeatedly negative. Coomb's negative autoimmune haemolytic anaemia is known to occur when haemolysis is caused solely by IgA antibodies [4]. We checked only IgM and IgG antibodies and had no facilities to test for IgA antibodies.

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