Concurrent dengue fever and bacterial septicemia during the 2008 dengue outbreak in Delhi

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There have been reports of unusual clinical presentations associated with dengue virus infection with sporadic reports of cardiac involvement\(^1\), altered consciousness with electroencephalographic changes\(^2\) and liver pathology\(^3\). During 2008, there was a sudden spurt in dengue cases in the Indian Capital, Delhi, and its adjoining areas\(^4\). We found concurrent dengue virus infection and bacterial septicemia in three hospitalized cases at Sant Parmanand Hospital, a 140-bedded tertiary-care hospital catering to the population of Delhi and adjoining townships.

During the period September to November 2008, 125 suspected cases of dengue were hospitalized. Of these, 114 were confirmed cases of dengue; three of them were also blood culture positive: two *Staphylococcus aureus* and one *Salmonella typhi*/paratyphi A, B group. *S. aureus* was isolated from two females, aged 28 and 30 years. The female patient, aged 30 years, platelet count 0.98x10^3/µl, total leukocyte count 9600/mm^3, positive for anti-dengue virus IgG and IgM, was not on hand for any antibiotic treatment. The other female, with platelet count 0.22x10^3/µl, leukocyte count 2000/mm^3, positive for anti-dengue virus IgM, was prescribed parenteral amoxicillin-clavulanic acid during hospitalization and ofloxacin during her convalescence.

The *S. typhi*/paratyphi group A, B was isolated from a 30-year-old male, platelet count 0.38x10^3/µl, total leukocyte count 2500/mm^3, and positive for anti-dengue virus IgG and IgM. Isolate was susceptible to amoxicillin-clavulanic acid, amikacin, piperacillin, ceftriaxone, cefepime, aztreonam, chloramphenicol and tetracycline, but resistant to ampicillin-sulbactam, ceftazidime, cefaclor, cefotaxime, cefetriaxone, cefuroxime and trimethoprim-sulphamethoxazole. The patient responded to parenteral amoxicillin-clavulanic acid and amikacin.

Reports on concurrent bacterial infections have been meagre, with not many dengue patients with concurrent typhoid fever\(^5\). Among 5000 cases with symptomatic dengue infection during an outbreak in Taiwan, China, there were only seven cases with becteremia at Chang Gung Memorial Hospital, Kaohsiung, in southern Taiwan\(^6\). Furthermore, during the 1990s, only one of the 19 serologically confirmed infants at Chon Buri Regional Hospital, Thailand, had *Staphylococcus aureus* sepsis, who recovered with appropriate management and treatment\(^7\).
Dengue patients, upon a significant disease resolution, would by and large be asymptomatic with normal platelet count and haematocrit values during a short hospital stay. The involvement of several organs\(^1\) would imply a prolonged stay. There are not many reports on concurrent dengue infection and septicemias, which is really not all that odd. Initial symptoms of fever would camouflage any septicemia. Dengue outbreaks are known to overwhelm the limited outpatient and inpatient facilities available in hospitals in countries like India. Furthermore, during such episodes, the medical personnel there are overworked and completely exhausted\(^8\).

The recommended essential laboratory investigations during a dengue outbreak include prothrombin time, partial thromboplastin time, thrombin time, electrolytes and liver function tests\(^8\). Addition of blood culture would be desirable for detection and treatment of any concurrent septicemia.

References


