

DETECTION OF DENGUE VIRUS IN PLATELETS ISOLATED FROM DENGUE PATIENTS

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Abstract. Though thrombocytopenia or dysfunction of platelets is common in dengue virus infection, the role of platelets has not been established. We enrolled 33 hospitalized children with serologically confirmed dengue virus infection. Blood specimens were collected during hospitalization. Platelets and plasma were isolated from the whole blood. Detection of dengue virus in plasma and platelets was carried out by RT-PCR with primers that can differentiate different dengue serotypes simultaneously, and by electron transmission microscopy (EM). Dengue viral RNA was detected in the platelets and plasma by conventional RT-PCR. A significantly higher percentage of dengue viral RNA was detected in platelets than in plasma ($p=0.03$). Platelets isolated 5 days after onset of fever were most likely positive for viral RNA. Concurrent infection or co-circulation with multiple dengue serotypes was observed in 12% of patients. Infrequently, negative-stranded dengue viral RNA was detected in platelets and in plasma. Importantly, EM confirmed the presence of dengue viral-like particles inside platelets prepared from dengue patients. Our findings suggest the presence of dengue virus in platelets may be associated with the dysfunction of platelets observed in dengue patients.

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