

A Multicenter Study of Clinical Presentations and Predictive Factors for Severe Manifestation of Dengue in Adults



Poster 592

Saranya Tempraserttrudee, MD,¹ Vipa Thanachartwet, MD,² Varunee Desakorn, MPH, MSc², Jiraporn Keatkla, BSc³, Wasun Chantratita, PhD,³
Sasisopin Kiertiburanakul, MD, MHS¹ (e-mail: sasisopin.kie@mahidol.ac.th)

¹Department of Medicine, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand, ²Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand, ³Department of Pathology, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand

Background

- Dengue is the most rapidly spreading vector-borne viral disease in human
- Characteristics of dengue viral infection have changed over the years, with progressive shift in age-distribution towards older children and adults
- Clinical presentations of dengue in adult patients are atypical and had more severity than children

Objectives

- Determine clinical presentations of adults with dengue
- Identify the predictive factors for severe manifestation of dengue

Methods

- Retrospective cohort study
- Adults with dengue confirmed by positive NS1 antigen
- Receiving treatment at Ramathibodi Hospital and Hospital for Tropical Diseases between January 2013 and July 2015
- Logistic regression analysis was used to determine predictive factors for severe manifestation of dengue

Results

- 357 patients were enrolled and 45.4% patients were males
- Median (IQR) age: 27.9 (21.8-43.5) years
- Fever (99.7%) was the most common presentation with median duration of 3 (2-4) days
- Other presentations included myalgia (62.1%), headache (52.7%) and nausea/vomiting (50.7%)

Severe manifestation of dengue (WHO 1997)

Dengue hemorrhagic fever	Dengue shock syndrome
Fever and 4 of the following	DHF and 4 of the following
1. Fever	1. Rapid and weak pulse
2. Hemorrhagic tendencies (positive tourniquet test, petechiae/ecchymoses purpura, bleeding from the mucosa, hematemesis/melena)	2. Narrow pulse pressure (<20 mmHg)
3. Thrombocytopenia	3. Hypotension for age
4. Evidence of plasma leakage	4. Cold, clammy skin and restlessness
- A rise in the hematocrit (Hct) \geq 20%	
- A drop Hct following volume – replacement treatment \geq 20%	
- Sign of plasma leakage such as pleural effusion, ascites, hypoproteinemia	

Comparisons of baseline characteristics, clinical manifestations and laboratory investigations are shown

Characteristics	Non-severe dengue (N = 282)	Severe dengue (N = 67)	P-value
Gender, n (%)			0.435
Male	124 (44.0)	33 (49.2)	
Female	158 (56.0)	34 (50.8)	
Median (IQR) age, years	26.5 (21.7-39.7)	34.5 (24.0-53.0)	0.003
Underlying comorbidity, n (%)	33 (11.7)	19 (28.4)	0.001

Conclusions

- Severe manifestation of dengue was observed in 20%
- Main presentations were fever, headache and myalgia
- Low levels of platelet counts and serum albumin were predictive factor for severe manifestation of dengue
- These factors may help healthcare providers do monitoring and early detect patients who will develop severe dengue

Clinical manifestations, n (%)	Non-severe dengue (N = 282)	Severe dengue (N = 67)	P-value
Fever	282 (100)	66 (98.5)	0.192
Myalgia	177 (62.8)	38 (56.7)	0.360
Headache	151 (53.5)	31 (46.3)	0.284
Nausea/vomiting	143 (50.7)	37 (55.2)	0.506
Diarrhea	56 (19.9)	11 (16.4)	0.520
Cough	46 (16.3)	15 (22.4)	0.239
Abdominal pain	47 (16.7)	13 (19.4)	0.594
Petechiae	18 (6.4)	10 (14.9)	0.021
Maculopapular rash	23 (8.1)	1 (1.4)	0.050
Hepatomegaly	8 (2.8)	6 (9.0)	0.022
Bleeding per gum	9 (3.1)	4 (5.9)	0.280
Alteration of consciousness	0 (0)	2 (3)	0.036
Had complication(s)**	9 (4.9)	7 (18.4)	0.003

Laboratory investigations	Non-severe dengue (N = 282)	Severe dengue (N = 67)	P-value
Median (IQR) WBC,/cumm	3595 (2570-4655)	3350 (2270-5310)	0.889
Median (IQR) PMN, %	63 (52-73)	59 (43-71)	0.056
Median (IQR) lymphocyte, %	23 (15-31.9)	24 (17-37)	0.262
Median (IQR) hematocrit, %	40.8 (37.6-43.4)	42 (38.3-45.3)	0.051
Median (IQR) platelet, x 10 ³ /cumm	137 (93.5-172.5)	57 (37-76)	<0.001
Median (IQR) ALT, U/L	57.5 (32-100)	129 (62-237)	<0.001
Median (IQR) albumin, g/L	4 (3.6-4.2)	3.4 (3.2-3.8)	<0.001
Median (IQR) creatinine, mg/dl	0.8 (0.7-1.0)	0.9 (0.6-1.2)	0.102

- Multivariate logistic regression analysis showed that platelet counts <100 x 10³/cumm (OR 12.99, 95% CI 3.11-54.18, p <0.001) and serum albumin <3.5 g/L (OR 8.99; 95% CI 2.53-31.88, p=0.001) were predictive factors of severe dengue