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Dengue Score

A Simple and Highly Specific Test for Diagnosis of Dengue Infection

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Introduction

-Dengue is the most important mosquito-borne viral infection that is widespread throughout the tropics.
-Early diagnosis and proper treatment were associated with favorable outcome.
-Virologic and serologic testings can be used for diagnosis, however there are not available to many healthcare settings in Thailand.
-Previous studies have identified simple clinical and laboratory features to distinguish dengue from other acute febrile illnessess (AFI), nevertheless produced inconclusive results.
-The objective of this study was to determine clinical predictors to discriminate dengue from other AFI.

Methods

-Prospective study was conducted at Nakhonpathom Hospital, a 760-bed tertiary care hospital in Thailand during August 1 and October 31, 2015.

-The inclusion criteria were adults who presented with acute fever clinically suspected to be dengue infection by attending physician.

-Predictive factors for dengue infection were analysed.

Results

-There were 155 patients.

-Mean age was 33.5 ± 17.1 yrs, 51% were female.

-113 patients (73%) had dengue, 42 (27%) had non-dengue.

-The most presenting symptoms were fever (100%) and nausea/vomiting (52%).

-The median duration of fever was 3 (range 1-7) days.

-Factors associated with dengue were shown (table1).

-Four factors were found to be associated with dengue by multivariate analysis (table2).

-Dengue score was calculated (when 1 was used for presence and 0 for absence of factor).

(-1.3xcough)
+ (1.5xWBC<4X10^3/mm^3)
+ (1.9xplatelet<100x10^3/mm^3)
+ (1.2xESR<20)

-A cutoff score ≥ 2, the best cutoff point for predicting dengue

-Sensitivity 58%, Specificity 95%, PPV 98%, NPV 38%.

Table1: Factors associated with dengue infection

Variables	No. (%) of patients		p-value
	Dengue (n=113)	Non-dengue (n=42)	
Age, yrs*	32.6 (6.9)	35.8 (17.6)	0.30
Female	59 (52)	20 (48)	0.59
Duration of fever, days** at presentation	3 (1-7)	3 (1-7)	0.19
Cough	26 (23)	17 (41)	0.05
Hematocrit	44.5	39.5	0.44
WBC, cellsx10^3/mm^3*	3.8 (1.9)	6.1 (3.5)	<0.001
Neutrophil%*	62.6 (14.6)	64.5 (16.5)	0.53
Lymphocyte% *	27.9 (12.0)	26.5 (13.1)	0.60
Platelet, cellsx10^3/mm^3*	102.6 (61.3)	148.7 (67.2)	<0.001
ESR, mm/hr*	23.7 (19.2)	33.4 (21.1)	0.05
C-reactive protein, mg/L*	16.0 (15.6)	37.4 (46.4)	0.001

*mean(SD) **median(range)

Table2: Multiple logistic regression of factors predicting dengue

Factors	Adjusted OR (95% CI)	Coefficient	p-value
Cough	0.3(0.1-0.9)	-1.3	0.04
WBC ≤ 4x10^3/mm^3	4.6(1.2-17.0)	1.5	0.02
Platelet ≤ 100x10^3/mm^3	6.6(1.5-29.8)	1.9	0.01
ESR ≤ 20 mm/hr	3.3(1.01-12.3)	1.2	0.05

Conclusion

-Clinical presentation of dengue was similar to other AFI.

-This prediction score provide a very high specificity and positive predictive value and can be used to diagnose dengue infection in resource-limited healthcare settings.