P0081
Paper Poster Session
Emerging and pre-emerging viruses

Dengue score, a simple and highly specific test for diagnosis of dengue infection

Sireethorn Nimitvilai*[1], Saharat Jarupongprapa[1], Kavita Jintanapramote[1]

[1]*Nakhonpathom Hospital, Internal Medicine, Nakhonpathom, Thailand*

Background: 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. Although several virologic and serologic testings can be used for diagnosis, there are not available to many healthcare settings in Thailand. Previous studies have attempted to identify simple clinical and laboratory features to distinguish dengue from other acute febrile illnesses (AFI), nevertheless produced inconclusive results. The objective of the study was to determine clinical predictors to discriminate dengue infection from other AFI.

Material/methods: All consecutive patients were prospectively enrolled at Nakhonpathom Hospital, a 670-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 physicians. Predictive factors for dengue infection were analysed.

Results: During study period, there were 155 patients. The mean age was 33.5 ± 17.1 years and 51% were female. Median duration of fever was 3 (range 1-7) days. The most presenting symptoms were fever (100%) and nausea/vomiting (52%). One hundred and thirteen (73%) and 42 (27%) patients had dengue and non-dengue infection, respectively. Patients with dengue were less likely to have cough at presentation (23% vs 41%, *p* 0.05), more commonly to have lower leucocyte (3.8 vs 6.1 x 10^3/mm^3, *p* < 0.001), platelet (102.6 vs 148.7 x 10^3/mm^3, *p* < 0.001), ESR (23.7 vs 33.4 mm/hr, p 0.05) and C-reactive protein (16.0 vs 37.4 mg/L, *p* 0.001) when compared to non-dengue patients. Multivariate analysis was performed by a stepwise logistic regression analysis. Four factors were associated with dengue; cough at presentation (OR 0.3, 95%CI 0.07-0.96, *p* 0.04), leucocyte < 4 x 10^3/mm^3 (OR 4.6, 95%CI 1.2-17.0, *p* 0.02), platelet < 100 x 10^3/mm^3 (OR 6.6, 95%CI 1.5-29.8, *p* 0.01) and ESR < 20 mm/hr (OR 3.3, 95%CI 1.01-12.3, *p* 0.05). The dengue score was calculated from (-1.3 x cough) + (1.5 x leucocyte < 4 x 10^3/mm^3) + (1.9 x platelet < 100 x 10^3/mm^3) + (1.2 x ESR < 20), when 1 used for the presence and 0 for the absence of each factors. This predictive score showed an area under the curve of 0.85 (95%CI 0.75-0.94). Using a cutoff ≥ 2, sensitivity, specificity, positive predictive value and negative predictive value in predicting dengue infection were 58.0%, 94.6%, 97.6 and 37.8, respectively.

Conclusions: Clinical presentation of dengue infection 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.