

Comparison of clinical, biochemical, imaging and outcome findings in Sri Lankan dengue and Covid patients

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Introduction:

Dengue and Covid may co-exist in tropical countries. Differentiation between dengue and Covid may be challenging due to the similarity of symptoms/signs and limited access to specific diagnostic tests in the two conditions.

Objectives:

We compared the clinical, biochemical, imaging and outcome characteristics of hospitalized dengue and Covid patients.

Materials & Methods:

The study was carried out at a single center in Colombo. Inclusion criteria for dengue patients were age more than 18 years with positive Dengue NS1 or IgM antibodies and for Covid was age more than 18 with a positive RT-PCR from a nasopharyngeal swab. The dengue cohort was studied from January 2018 to December 2020, and the Covid cohort from April 2020 to December 2021. Clinical, biochemical, imaging and outcome data were recorded and analyzed. A p value < 0.05 was considered statistically significant for all analyses.

Results:

- A total of 550 dengue and 410 Covid patients were analyzed. The mean (\pm SD) age of the dengue patients were significantly lower than Covid patients (43.3 \pm 7.8 vs. 59.6 \pm 8.2 years).
- The median length of hospital stay was significantly longer in Covid than dengue patients (13 vs. 7 days).
- A higher proportion of dengue patients had no co-morbidities when in compared to Covid patients (68.8% vs. 30.7%).
- Upper and lower respiratory tract symptoms and signs were common among Covid patients than dengue.
- Covid patients needed more ICU care and had a higher mortality rate. White cell and platelet counts, neutrophil: lymphocyte ratio and C-reactive protein levels were significantly lower in dengue patients.
- The chest radiograph was normal in most dengue patients and ultrasound scan abdomen was normal in most Covid patient.

Study population characteristics

Variable	Dengue [N =550]	COVID-19 [N =410]	P-value
Age in years (Mean \pm SD)	43.3 \pm 7.8	59.6 \pm 8.2	0.02
Gender, Male (n, %)	289(52.5)	226(55.2)	0.23
Length of hospital stay (Median ,IQR)	7(5-10)	13(11-16)	<0.001
Setting of care			
Ward	498(90.5)	316(77.1)	0.01
ICU	52(9.5)	94(22.9)	<0.001
White cell count (10 ⁹ /L) [Mean \pm SD]	2.1 \pm 0.9	5.73 \pm 1.1	<0.001
Platelet count (10 ⁹ /L) [Mean \pm SD]	89.7 \pm 8.9	151.2 \pm 15.3	<0.001
Lymphocyte count as a percentage (%) [Mean \pm SD]	43.2 \pm 5.3	19.8 \pm 4.4	<0.001
Outcome			
Recovered	546(99.2)	297(72.4)	0.001
Death	4(0.8)	113(27.6)	0.001

Conclusions:

Important differences were noted in some of the clinical, biochemical; imaging and outcome characteristics of patients with dengue or Covid. Clinicians being aware of these differences would aid in the appropriate clinical management of these conditions in regions where both coexist.