HOSPITALIZED DENGUE CASES FROM SEVEN MAJOR HOSPITALS IN INDONESIA, 2013-2015

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BACKGROUND

Since the etiologies of fever have not been completely identified in the majority of hospitalized patients admitted with fever, a study is currently conducted in seven major cities in Indonesia. Based on the clinical diagnoses, dengue and typhoid fever are the most prevalent. To evaluate the accuracy of the clinical diagnoses and to determine the epidemiology of dengue in each city, a spin-off dengue study is conducted.

METHODS

Acute and convalescent specimens from all hospitalized subjects with fever were tested by ELISA IgM and IgG antibodies assays. The acute specimens from subjects with detected IgM antibodies, and/or increasing IgG antibodies subjects and/or, subjects with clinical diagnosis dengue, unspecified fever or viral infections, are further tested for NS1 dengue virus (DENV) antigen and DENV RT-PCR assays. A number of all DENV amplicons from all sites are being sequenced at the envelope region and compared.

RESULTS

Until today, 1269 subjects, 534 children < 18 years old and 735 adults have been enrolled into this study. DENV diagnostic assays have been performed in acute and convalescent specimens from 260 subjects. Prior to hospitalization, 228 (88.4%) subjects showed evidence of previous dengue infection. Acute dengue was confirmed in 93 (35.8%) subjects, 71(76.3%) are secondary infections. No fatalities were reported. Sequencing analysis is underway.

Proportion of dengue
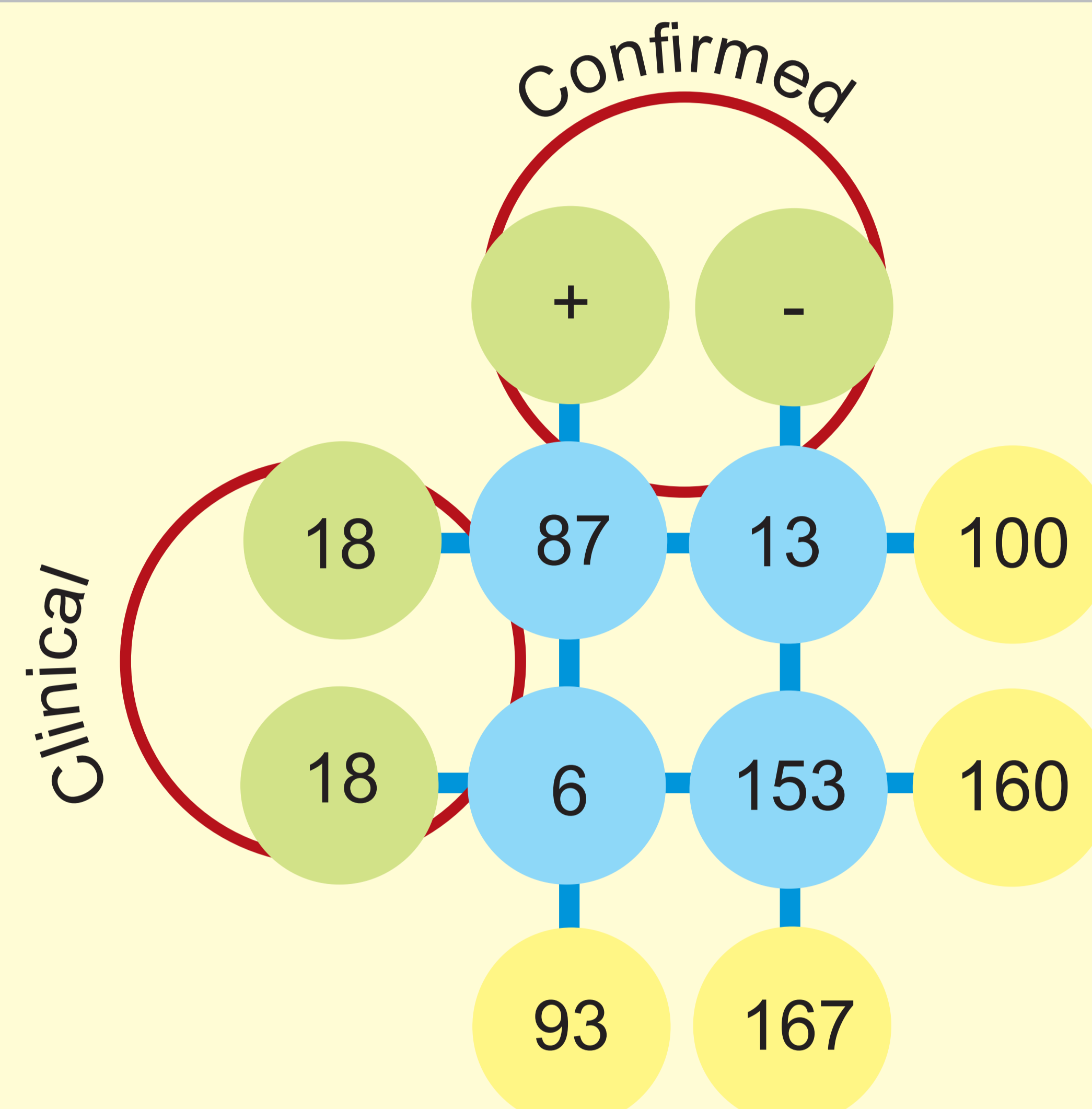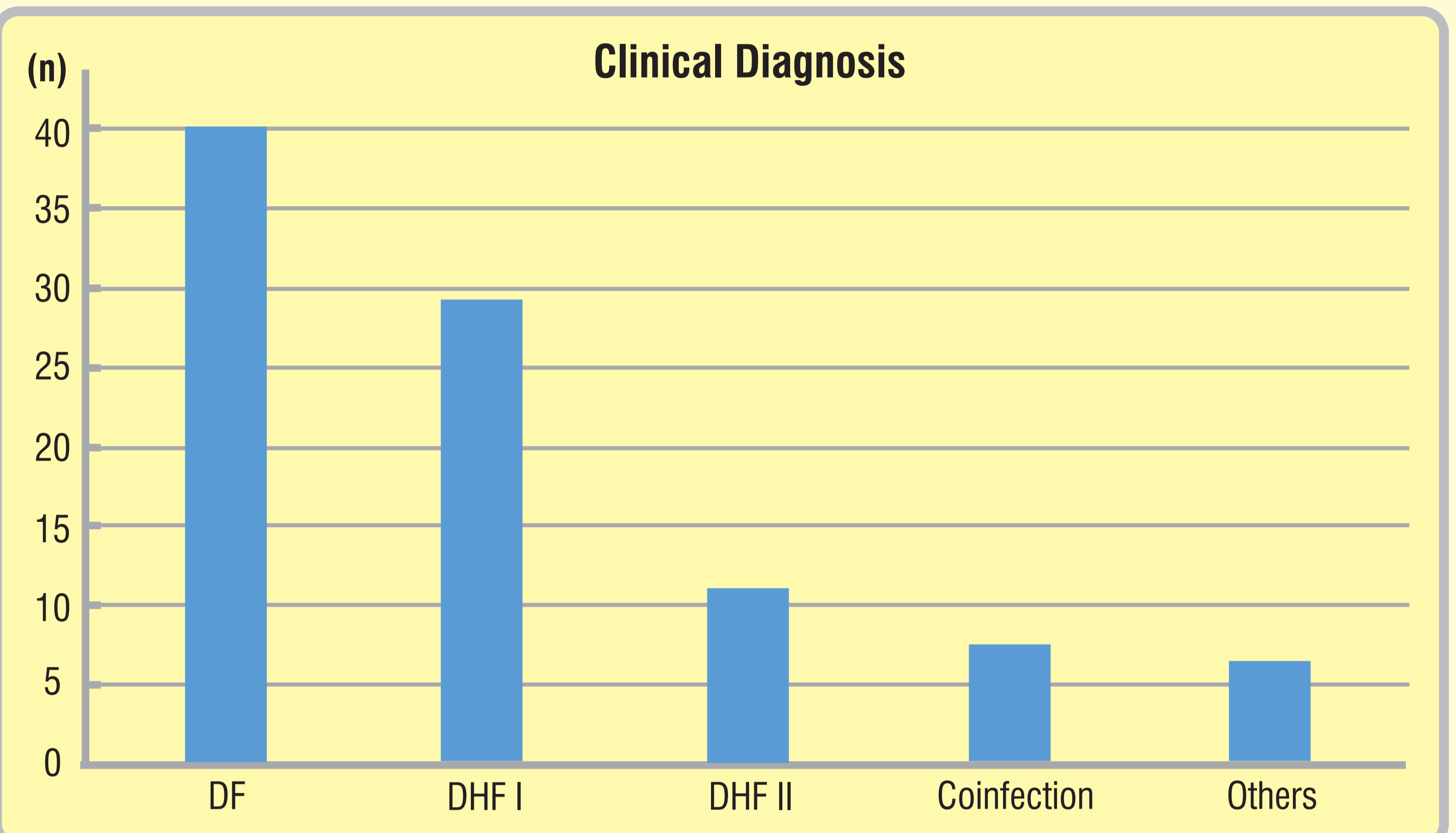
By Sites

28.6% BANDUNG → 51.9% DENPASAR, BALI

By Age Categories

47/102 **29.5% children**

46/156 **46.1% adult**

Serotype Distribution

DEN-1, DEN-2, DEN-3	DEN-1 = 20
Bandung, Surabaya	DEN-2 = 2
	DEN-3 = 15

DEN-1, DEN-3
Denpasar(Bali), Makassar, Semarang

One subject was infected by two serotypes (DENV-2 and DENV-3).

DEN-1 only
Jakarta, Yogyakarta

Clinical Diagnosis bar chart (DF, DHF I, DHF II, Coinfection, Others)

Confirmed / Clinical diagram: 18, 87, 13, 100 / 18, 6, 153, 160 / 93, 167

Descriptions	N
Clinical(+), Ns1(+), Serology(+), PCR(+)	29
Clinical(+), NS1(+), Serology(+), PCR(-)	36
Clinical(+), NS1(-), Serology(+), PCR(+)	5
Clinical(+), NS1(-), Serology(+), PCR(-)	17
Clinical(-), Ns1(+), Serology(+), PCR(+)	3
Clinical(-), Ns1(-), Serology(+), PCR(-)	3
Clinical(+), Ns1(-), Serology(-), PCR(-)	18
Clinical(-), Ns1(-), Serology(-), PCR(-)	149

Age/ Gender	Dengue confirmed by		Clinical Diagnosis	Hematology Counts (Ht%,Leuko,PLT,%Lymp, Abs Lymp)	Signs/ Symptoms*
	Serology	Ns1 & Serotype			
10F	IgM(+) IgG ↗	32; DENV-2 & 3	Typhoid Fever (tubex 8)	42/2,000/134,000/37/740	2,10,11,12,16
12M	IgM(+) IgG ↗	NEG	Typhoid Fever (tubex 6)	36/6,600/99,000/36/480	1,8,9,11,14
8M	IgM(+) IgG ↗	27; DENV-3	Metabolic encephalophaty Drug Induced Hepatitis	33/16,000/206,000/3/480	4,5,12
55F	IgM(+) IgG Not ↗ 0.3 to 4.8	NEG	Typhoid Fever (tubex 7)	37.6/5,800/196,000/13.9/806	11,15
8M	IgM(+) IgG ↗	26; DENV-3	Typhoid Fever (tubex 4)	36.7/10,100/320,600/24/2424	1,3,6,7,9,11,12,15
15F	IgM(-) IgG ↗	NEG	UTI (*E. faecalis*)	35.4/7,400/243,000/8.7/644	11,12,13,14

* 1. Annorexia; 2. Chills; 3. Lethargy; 4. Headache; 5. Consciousness; 6. Dizzy; 7. Cough; 8. Constipation; 9. Abdominal Pain; 10. Diarrhea; 11. Nausea; 12. Vomitting; 13. Flank phin; 14. Disuria; 15. Arthralgia/ Myalgia; 16. Skin rash

CONCLUSION

Dengue was the most important cause of fever in hospitalized patients, especially in children in all the major cities in Indonesia. DENV-1 and DENV-3 were the predominant serotypes during 2013-2015. Rapid diagnostic tests that can accurately distinguish between systemic infections during acute illness are really needed.