

**ABSTRACT**

**Background:** World-widely, as well as in Indonesia, morbidities and mortalities due to Dengue virus infection remain high. Surabaya is one of DHF endemic city in Indonesia. Many host (human) aspects contributing to Dengue infection severity including ethnicity. Indonesia has a variety of ethnicity therefore the purpose of this study was to analyze risk factors for dengue infection severity on Javanese, Chinese other ethnicity in Surabaya.

**Method:** This was a cross-sectional study with consecutive sampling of DHF/DF patients aged over 12 years hospitalized in three private hospitals in Surabaya. Data collection was conducted from March 20, 2013 to May 20, 2013 with a sample size of 95 patients

**Result:** The results showed that Chinese was the ethnic group with the most severe dengue infection profiles assessed using the criteria of WHO (82.1%) and bleeding symptom, highest haemoglobine concentration ( $15.62 \pm 1.70$  g/dl), highest PCV concentration ( $44.90 \pm 4.23\%$ ) and lowest platelet counts ( $31.42 \pm 22.05 \times 10^3 \mu\text{l}$ ), however, the lowest leukocyte counts were of other ethnicities ( $2.12 \pm 1.53 \times 10^3 \mu\text{l}$ ). The results of logistic regressions showed the influence of male sex (p: 0.000), Chinese ethnicity (p: 0.038), and less drinking water consumption (p: 0.017) on dengue infection severity based on Hb increase hemoconcentration. Male sex (p: 0.000) and obesity (p: 0.020) influenced the severity of dengue infection based on PCV increase hemoconcentration.

**Conclusion:** Chinese was the ethnic with mostly at risk of severe clinical and laboratory symptoms when infected with dengue virus. Dengue infection among males, Chinese, and less water drinking consumption were more likely to become severe Dengue infection based on Hb increase hemoconcentration. Dengue infection among males and obese were likely to become severe Dengue infection based on PCV increase hemoconcentration

**Keywords:** Dengue infection severity, ethnicity, BMI, HLA-A\*24, ABO blood type, severity prevention practices.

**DAFTAR SINGKATAN**

ADE	: <i>Antibody Dependent Enhancement</i>
AST	: <i>Aspartate Amino Transferase</i>
ALT	: <i>Alanine Amino Transferase</i>
BMI	: <i>Body Mass Index</i>
CD 4	: <i>Cluster of Differentiation 4</i>
CD 8	: <i>Cluster of Differentiation 8</i>
CTL	: <i>Cytotoxic T Lymphocyte</i>
DBD	: <i>Demam Berdarah Dengue</i>
DD	: <i>Demam Dengue</i>
DNA	: <i>Deoxyribo Nucleic Acid</i>
DHF	: <i>Dengue Haemorrhagic Fever</i>
DSS	: <i>Dengue Shock Syndrome</i>
DEN 1-4	: <i>Dengue 1 – 4</i>
FcγII	: <i>Factor crystalized Gamma receptor II</i>
Hb	: <i>Haemoglobine</i>
Hct	: <i>Haematocrit</i>
HLA	: <i>Human Leukocyte Antigen</i>
HPA	: <i>Human Platelet Antigen</i>
IL-2	: <i>Interleukin -2</i>
IMT	: <i>Indeks Massa Tubuh</i>
Ig G	: <i>Immunoglobulin G</i>
IFN-γ	: <i>Gamma Interferron</i>
MBL	: <i>Mannose Binding Lectin</i>
MHC	: <i>Major Histocompatibility Complex</i>
NK cell	: <i>Natural Killer Cell</i>
PCR	: <i>Polymerase Chain Reaction</i>
PCV	: <i>Packed Cell Volume</i>
SPSS	: <i>Statistic Program of Social Science</i>
TCR	: <i>T Cell Receptor</i>
TNF-α	: <i>Tumour Necrosis factor alpha</i>
Th	: <i>T helper</i>
WHO	: <i>World Health Organization</i>