



**IMMUNOGLOBULIN-G ANTI-*Toxoplasma gondii* ANTIBODIES
CONCENTRATION IN PERIPHERAL BLOOD SAMPLES AMONG MALE
COMMERCIAL SEX WORKER IN SURAKARTA**

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ABSTRACT

Primary prevention of *Toxoplasma gondii* (*T. gondii*) infection among high risk-community of HIV transmission is very essential. The goal of the study was as preliminary study to quantify Immunoglobulin-G (IgG) anti-*T. gondii* protein concentration in peripheral blood samples among male CSW in Surakarta, Indonesia. In cross sectional study, peripheral blood samples of thirty male CSW in Surakarta were collected, and determined for IgG anti-*T. gondii* using commercial enzyme-linked immunosorbent assay (ELISA) kit. Then we conducted three statistical modeling approach using simple linear regression model, to predict the IgG protein concentration (Y) from each IgG index measurement (X). IgG index measurement was determined by dividing samples optical density (O.D) and cut-off calibrator O.D (O.D was measured in spectrophotometer). The models were $Y_1 = 21.3 \cdot X_1 - 4.3$ (for the range between 0.2 to 1.7 of IgG index), $Y_2 = 85.0 \cdot X_2 - 112.5$ (between 1.7 to 2.5 of IgG index), and $Y_3 = 666.7 \cdot X_3 - 1566.7$ (for more than 2.5 of IgG index). Pearson correlation analysis was used to measure relationship between IgG antibodies concentration and age ($p < 0.05$ was considered as significant). All data analysis was done using STATA® 12 statistical software and Python® 3.3 programming software. The result showed that by fitting linear regression model, we found high titer (more than 300 IU/ml) of IgG anti-*T. gondii* among 20% of male CSW. About 13.33% of them had moderate titer 100 – 300 IU/ml of IgG antibodies, and 66.67% of them had less than 100 IU/ml of IgG antibodies titer. There was mild negative correlation between IgG antibodies titers with age, but it was not significant. The present study was the first finding reported IgG anti-*T. gondii* concentration status among male commercial sex worker in Indonesia, indicating of a need more public health promotion for primary prevention of toxoplasmosis among this community.

Key words: Immunoglobulin-G concentration, *Toxoplasma gondii*, Male commercial sex worker, Indonesia, Linear regression