

ABSTRACT

Background: Leprosy reaction is an acute episodes that occurred in the chronic clinical process of leprosy. Leprosy reaction could make damage to the cells because of the oxidative stress process. Previous studies showed increasing oxidant levels in leprosy reaction patient. Malondialdehyde (MDA) is one of the biomarker of oxidative stress that plays important role in pathogenesis of leprosy and leprosy reaction.

Purpose: To measure plasma levels of MDA in leprosy reaction patient and leprosy without reaction in Dermato Venereology outpatient clinic in Dr. Soetomo general hospital Surabaya.

Methods: This study was a descriptive observational study, with 27 leprosy patients in Dermato Venereology outpatient clinic Dr. Soetomo general hospital and 27 age-sex matched controls (nonleprosy subjects) that qualify inclusion and exclusion criteria. Plasma MDA was measured in both groups using ELISA.

Results: Mean plasma MDA in leprosy patient are $572,53 \pm 333,04$ ng/mL and $705,31 \pm 187,23$ ng/mL in control groups. Mean plasma MDA in leprosy patient without reaction are $632,26 \pm 352,28$ ng/mL, mean plasma MDA in leprosy patient with type 1 reaction are $479,6 \pm 120,76$ ng/mL, and mean plasma MDA in leprosy patient with type 2 reaction are $490,67 \pm 69,33$ ng/mL. Mean plasma MDA in paucibacillary leprosy patient are $318,26 \pm 97,58$ ng/mL, and mean plasma MDA in multibacillary leprosy patient are $630,31 \pm 280,27$ ng/mL.

Conclusions: Mean plasma MDA in control groups is higher than leprosy patient, mean plasma MDA in leprosy without reaction is higher than leprosy reaction. There is a trend increasing of MDA toward lepromatous type, and need further research to reveal the role exogenous antioxidant in leprosy patient.

Keywords: leprosy, malondialdehyde, antioxidant