ABSTRACT

Effects of Probiotic and Vitamin B1, B6, B12 Suplementation on Plasma Interferon-γ andImmunoglobulin-G Levels in Tuberculosis Patient During Intensive Phase of Therapy

Background : Cellular and humoral immune responses have been shown to play key roles in the pathogenesis of tuberculosis infection. A pro-inflammatory cytokine, IFN-γ, is critical to increase microbicidal activity of phagocytes, while IgG affects the outcome of infection through bacterial opsonization and granuloma formation. Probiotics and vitamin B were known to increase T lymphocyte proliferation, mononuclear phagocyte, and the activity of NK cell.
Objectives : To analyzethe effects of probiotic and vitamin B1, B6, B12 suplementation on plasma interferon- γ and IgG levels in tuberculosis patient during intensive phase of therapy.
Methods : A pre post test randomized control by time series group designwas conducted from December 2016 to February 2017 and was approved by the ethical comittee of Airlangga University Hospital Surabaya. Plasma IFN-γ and IgG levels were measured before, after one month, and after two month of therapy by using the ELISA method.
Results : A total of 22 patients in the intensive phase of tuberculosis therapy from Airlangga University Hospital and Community Health Centers in Surabaya were included and divided into two groups, 11 patients in the suplementation group and 11 patients in the control group. Plasma IFN-γ levels tend to increase in the first month (p=0.241 vs p=0.445) then decreased in the second month (p=0.007 vs p=0.859) in the suplementation and control group, respectively. The decrease of IFN-γ levels in the second month was significantly higher in the suplementation group than in control group (p=0.004). Plasma IgG levels tend to increase in the first month (p=0.229 vs p=0.058) and tend to decrease after two months (p=0.489 vs p=0.249) in the suplementation and control group.
Conclusions : IFN-γ levels tend to increase in the first month and decrease significantly after two months of therapy. Probiotic and vitamin B1 B6 B12 has no effects on plasma IgG levels. These results showed the promising effect of probiotics and vitamin B1, B6, B12 during the intensive phase of tuberculosis therapy.

Keywords : Inteferon-γ, immunoglobulin-G, probiotic, tuberculosis, vitamin B