

Keywords: CD4 T lymphocytes; HIV/AIDS patient; Zinc supplementation

Introduction

Unit Perawatan Intermediet dan Penyakit Infeksi (UPIPI) Dr. Soetomo hospital, Surabaya is one place where various components of Governmental Organization (GO) and Non-Governmental Organization (NGO) integrated in order for comprehensive management of people with HIV / AIDS through support, care, and treatment. The numbers of people with HIV / AIDS who came and treated in UPIPI in 2010 are 3.580 people. When compared with data in 2010, the number of people with HIV / AIDS in the mid of 2011 increased by 15.90% to 4.148 people [1].

People with HIV infection and AIDS requires nutrients that contain macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins and minerals) in sufficient amount because HIV/AIDS will affect their nutritional status and immune system [2-4]. Macronutrient and micronutrient-based nutrients are given in UPIPI. HIV infection affect suppress of CD4 T lymphocytes both the quantity and quality. CD4 count is key to the health of the immune system in patients with HIV / AIDS. The lower the number, the greater the damage, that is caused by HIV [5].

In the nutrition management, supplementation of macro and micro nutrients are important to be optimized. Micronutrient absolutely necessary for people with HIV / AIDS in order to build strong immune system in facing the emergence of opportunistic infections [6,7]. Zinc is a micronutrient that is essential in growth period, before and after birth, as well as to the speed of cellular changes in body tissues such as in immune and digestive system [8]. According to Barasi [9] zinc is important for development of various cellular components in the immune system, particularly T lymphocytes and cells activity that include chemotaxis, phagocytic activity and oxidative bursts.

In a study in Italy with zinc supplementation (200 mg per day) for 1

month can reduce incidence of opportunistic infections, can maintain the stability of weight and increasing CD4 count of AIDS patients who received ARVs therapy. In another study, supplementation with zinc sulphate 0.45 mg / kg / day for 10 weeks can increase CD4 cells significantly [10].

From the studies above, zinc is known to have a role in increasing CD4 counts in HIV / AIDS patient because zinc is a component that can affect various genes for transcription, particularly genes that guide immune system and important for development of non-specific immunity and cell mediated immunity (especially CD4 cell).

This research was conducted to study the effect of zinc sulfate as micronutrient elements and analyzing the number of CD4 T

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lymphocytes in HIV / AIDS patients in UPIPI, Dr. Soetomo Hospital after intervention with zinc sulphate.

V. There is no difference of CD4 count in treatment and control group, which mean that the difference of CD4 count in treatment group was not greater than the difference in control group.

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