Proceedings of the Nutrition Society (2008), **67 (OCE)**, E73 doi:10.1017/S0029665108006824

1st International Immunonutrition Workshop, Valencia, 3–5 October 2007, Valencia, Spain

Selenium deficiency in adults infected with HIV in the era of highly-active antiretroviral therapy

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The introduction of highly-active antiretroviral therapy (HAART) has produced a minor incidence of malnutrition and an improvement in the survival and immunological functions of patients infected with HIV. On the other hand, there are still reports of micronutrient deficiency in the early stage of the disease[1,2,3]. Se is particularly relevant in HIV because it may modulates immune cells[1,2,3]. The aim of the present study was to evaluate Se status in adults infected with HIV. The cross-sectional study included fifty-one adults infected with HIV: 72.5% males; mean age 37.1 (SD 6.9) years; 80.4% under HAART treatment; median CD_4 count 426 (20–1029) cells/mm^3; median viral load <50 (<50-273000) copies/ml. Samples of whole blood were collected from fasting patients. Plasma Se was determined in haemolysis-free plasma by flame atomic absorption spectrometry. A calibration curve was established using commercial standards. Reference values were taken from the literature (60–160 μg/l)[4–6]. The Ethics Committee of the University of Buenos Aires approved the study. All participants gave informed consent before recruitment. Statistical analysis was by Student's *t* test, with significance at $P<0.05$, using SPSS version 13.0 (SPSS, Chicago, IL, USA). Although nutritional status evaluated by BMI was adequate (median 24.02 (interquartile range 22.3–25.5) kg/m^2), 82.4% of the patients presented with Se below reference levels (median 42.4 (SD 17.9; 95% CI 37.5, 47.3) μg). Plasma Se levels were not significantly different between subjects grouped according to the stage of the disease (HIV or AIDS); the same outcome was observed with and without HAART ($P=0.35$ and $P=0.83$ respectively). The results showed a high proportion of patients with Se deficiency, which could reduce the number of immune cells and/or their function. These results are in agreement with a previous study performed in children[7]. Supplementation with Se may delay the development of the disease and may improve the prospects of survival and quality of life.

The research was partially supported by University of Buenos Aires (Grant B-060).

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