

**EFFECT OF SOLUBLE FIBER ON HYPERTRIGLYCERIDEMIA AND IMMUNE
PROFILE IN HIV-POSITIVE INDIVIDUALS UNDERGOING HIGHLY ACTIVE
ANTIRETROVIRAL THERAPY**

Thesis: J. Geraix submitted this thesis for her Doctorate in Health Sciences at the Department of Tropical Diseases, Botucatu Medical School, São Paulo State University, Botucatu, São Paulo State, Brazil, 2007.

Advisor: Professor Paulo Câmara Marques Pereira.

ABSTRACT: The advent of highly active antiretroviral therapy (HAART), since 1996, represented a profound impact on the natural history of HIV-infection by promoting important and sustainable viral replication suppression and increasing survival and quality of life among seropositive patients. Nonetheless, antiretroviral therapy has been observed to be accompanied by metabolic alterations such as dyslipidemia, especially hypertriglyceridemia, insulin resistance, hyperglycemia and lipodystrophy (body fat redistribution). Epidemiological studies have demonstrated a correlation between high triglyceride (TG) levels and higher incidence of coronary artery disease (CAD). Some investigators suggest dietary intervention as part of hyperlipidemia treatment, including an increase in soluble fiber intake (10-25g/day). Whereas some studies have demonstrated that both cholesterol and serum triglyceride levels decrease with the use of food fiber, others have shown just a serum triglyceride decrease, and others failed to observe any alteration in lipid metabolism. The purpose of this study was to assess the effect of soluble fiber[®] (partially hydrolyzed guar gum) supplementation on hypertriglyceridemia and immune profile in HIV-positive individuals on HAART. Nineteen HIV-positive individuals with hypertriglyceridemia (serum levels ≥ 150 to < 500 mg/dl) were studied. Of these individuals, 63.16% were males and 36.84% females, with mean age of 43.52 ± 9.22 years. These individuals had been on the same HAART regimen for at least six months, had no change in therapy during the study and received 20g/day of soluble fiber for four months at pre-established times. Clinical-nutritional, biochemical (total

proteins, albumin, globulin, total cholesterol, LDL-c, HDL-c, TG, TG/HDL-c and LDL-c/HDL-c), hematimetric (hemoglobin, hematocrit and total lymphocytes), and immunologic (lymphocytes T CD4⁺, T CD8⁺; T CD4⁺/CD8⁺ ratio, viral load, TNF- α and IL-6) parameters were assessed in all patients at three time points (M0: pretreatment, M1: 30 days, and M2: four months after intervention). Significance level was set at 5% for all data statistically analyzed. Serum TG and TG/HDL-c ratio reduction was observed at all time points, but statistical significance was found just at M0 and M2. The remaining biochemical, hematimetric and immunologic parameters (lymphocytes T CD4⁺, T CD8⁺; T CD4⁺/CD8⁺ ratio, and viral load) showed no significant difference at all times. Regarding serum cytokines, TNF- α and IL-6 significantly decreased between M0 and M2, and only IL-6 reduced between M1 and M2. The data collected show that dietary and anthropometric parameters remained unchanged excluding potential confounding factors related with the effect of fiber supplementation on serum TG, TNF- α and IL-6. Thus, soluble fiber[®] contributed to an important reduction in hypertriglyceridemia and in the serum levels of the proinflammatory cytokines TNF- α and IL-6 in HIV-seropositive individuals on HAART. In addition, soluble fiber[®] might have minimized the process of atherosclerosis in these individuals, given that elevated serum levels of TG, TNF- α and IL-6 have been associated with the development of these lesions.

KEY WORDS: soluble fiber, HIV/AIDS, hypertriglyceridemia, cytokines.

CORRESPONDENCE TO:

JULIANA GERAIX, Departamento de Doenças Tropicais, Faculdade de Medicina de Botucatu, UNESP, 18618-000, Botucatu, SP, Brasil. Phone: + 55 14 3882 6212. Email: jugeraix@yahoo.com.br.