Abstract

Introduction: The -lipoic acid (ALA) has been used as a treatment to reduce oxidative damage in Systemic Arterial Hypertension (SAH), but there are no in vivo studies reporting the effect of its mechanism of action on iron metabolism. Objective: To evaluate the antioxidant effect of -lipoic acid on Blood cell count (CBC) and iron metabolism in hypertensive subjects with or without anemia.

Method: Double-blind, randomized, placebo-controlled clinical trial. The sample consisted of 60 hypertensive patients that were randomly divided into treatment group (n = 32), receiving 600 mg / day of ALA for twelve weeks and control group (n = 28), receiving placebo for the same period. Blood cell count, serum iron, ferritin, Latent Iron-Binding Capacity (LIBC), Total Iron-Binding Capacity (TIBC), Transferrin Saturation Index (TSI) and transferrin were assessed before and after intervention. To assess changes between groups, the Student t-test and ANOVA were used, adopting a significance level of 5%.

Results: After intervention, ALA supplementation showed a statistically significant (p < 0.05) association with the reduction of total leukocytes, increase in the number of neutrophils and reductions in the serum levels of iron and TSI.

Conclusion: Oral administration of ALA as a therapeutic adjuvant changes the hematologic response of white blood cells and reduces the absorption of iron. It is observed that the mechanism of metals chelation by lipoic acid may be responsible for these changes and, consequently, could trigger a condition of iron deficiency anemia in hypertensive individuals.

Keywords
Lipoic Acid, Iron, Hypertension, Anemia.