Ficus Carica Prevents Oxidative Stress in Kidney Rats Induced by Chronic Intermittent Hypoxia

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Abstract

Purpose: This study aims to determine puree of *Ficus carica* (PFC) as a source of exogenous antioxidants in protecting the kidneys of rats induced by chronic intermittent hypoxia (CIH)

Methodology/approach: Rats induced by CIH a 4-hour hypoxia cycle in hypoxia chambers (10% oxygen and 90% nitrogen) and puree *Ficus carica* (PFC) administration. Twenty-four *Sprague-Dawley* rats were randomized into 6 groups (n=4): neutral control (NC) group, chronic intermittent hypoxia (CIH) group, CIH and vitamin E (CIH-E) group, and three PFC intervention groups with different doses (CIHF-1.25; CIHF-2.5; CIHF 5.0) ml/200gBW/d. Serum urea, creatinine levels, Malondialdehyde (MDA), and superoxide dismutase (SOD) levels of the kidney were assessed.

Results/findings: The levels of MDA, SOD, and SOD/MDA ratio of the kidney showed significant differences in the CIHF-5.0 group compared to the negative control. Urea serum was lower in the CIHF-5,0 group and creatinine serum in the CIHF 2,5 group. Urea and creatinine serum had a significant difference compared to the negative control group.

Limitations: This study did not explore the specific bioactive compounds in *Ficus carica* that can influence several parameters in the kidney. In general, this study showed that *Ficus carica* intervention was better than administering Vitamin E.

Contribution: This study contributes to the development of science, particularly preventative medicine, by employing antioxidant chemicals in *Ficus carica* to mitigate the effects of chronic hypoxia.

Novelty: There has never been any research into the use of functional foods derived from Ficus carica to alleviate the effects of chronic hypoxia on the kidney organ.

Keywords: *Ficus carica, chronic intermittent hypoxia, kidney, oxidative stress*