MATE TEA DOES NOT REVERSE PULMONARY DAMAGE CAUSED BY EMPHYSEMA IN MICE

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Introduction: Chronic Obstructive Pulmonary Disease (COPD) represents the major cause of respiratory failure today, and pulmonary emphysema is the most severe manifestation. Pro-oxidative conditions have close involvement on emphysema pathogenesis and studies with administration of antioxidants, as *Ilex paraguariensis*, have shown beneficial effects in minimize the establishment of the disease. However, little efforts have been made in search for strategies capable in repair pulmonary damage already established.

Objective: To evaluate mate tea (*Ilex paraguariensis*) as a therapeutic strategy in murine emphysema.

Methods: Male mice C57BL/6 with 8 weeks were subjected to a single intranasal instillation of porcine pancreatic elastase (PPE - 3U/15μL) to induce emphysema. Control group received only saline. Twenty one days after PPE instillation, animals were divided in two groups: PPE not treated, that consumed tap water, and PPE+MATE, that consumed mate tea (10g/kg/dia) along 21 days. On day 43 the animals were euthanized and parameters of oxidative stress, inflammation and histology were evaluated.

Results: It was observed an increase on levels of TBARS in PPE and PPE+MATE groups when compared to control group, showing an increase in lipid damage. Additionally, there was a decrease in GSH/GSSG ratio in PPE and PPE+MATE groups. TNF-α and KC pro-inflammatory cytokines were increased in both PPE-instilled groups, showing that mate tea also does not revert the inflammatory component on emphysema. Histological analysis showed typical alveolar enlargement in PPE group, which remained in PPE+MATE group when compared to control group. Histological analyses of elastic and collagen fibers are ongoing. The antioxidant enzymes catalase, superoxide dismutase and glutathione S-transferase did not change significantly, even as myeloperoxidase and nitrite levels.

Conclusion: These results suggest that the late treatment with mate tea is not effective in repair the tissue damage highlighted on emphysema induced by elastase, being unable in modulate the antioxidant defenses and pro-inflammatory cytokines.

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