Bauhinia forficata Tea Reduces Oxidative Damage in Different Tissues of Mice Intoxicated by Streptozotocin

Salgueiro, A.C.F.¹; Leal, C.Q.¹; Bianchini, M.C.¹; Prado, I.O¹; Puntel, G.O²; Puntel, R.L¹; Folmer, V¹

¹ Programa de Pós-Graduação em Bioquímica, Universidade Federal do Pampa, Campus Uruguaiana, RS, Brazil. ² Departamento de Morfologia, Universidade Federal de Santa Maria, RS, Brazil.

INTRODUCTION: Streptozotocin (STZ) is a drug used to induce Diabetes mellitus (DM) in experimental animals. STZ triggers hyperglycemia by destruction of pancreatic β-cells. Furthermore, studies indicate that STZ toxicity is also directed to other tissues by increasing in reactive oxygen species (ROS) production, leading to oxidative stress. Bauhinia forficata (BF) is a medicinal plant widely used for DM treatment and this study was conducted to evaluate effects of BF tea over oxidative damage in different tissues of mice intoxicated by STZ. MATERIAL AND METHODS: Male mice received or not a single STZ dose (100mg/kg i.p.) and part them was treated with BF tea (1mg/mL) in drinking water. Mice treated with BF tea and also STZ were divided in two groups named pre-treated (started drinking BF tea two weeks before STZ injection) and post-treated. After STZ injection both this groups were treated for six weeks and after were killed and had their tissues (blood, brain, kidney and liver) removed for biochemical analysis. RESULTS AND DISCUSSION: Both pre and post-treatment with BF tea were effective to reduce weight loss (p <0.05), while only pre-treatment reduced the hyperglycemia triggered by STZ (p <0.05). Both pre and post-treatment reduced oxidative damage observed by increases in TBA-RS and DCF-RS levels and decreases in reactivation index of δ-ALA-D enzyme in liver, kidney and brain of STZ mice (p <0.05). Furthermore, both pre and post-treatment reduced to control levels the compensatory increase in non-enzymatic and enzymatic antioxidant levels determined by STZ intoxication (p <0.05). In general, BF tea was able to protect against oxidative damage triggered by STZ intoxication, an effect that could be assigned to the antioxidant effects of this medicinal plant, previously demonstrated in others studies. CONCLUSIONS: BF tea, as popularly used, was effective in reducing oxidative damage induced by STZ in mice.

Key Words: Streptozotocin; Bauhinia forficata; Oxidative damage.

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