**INTRODUCTION:** Streptozotocin (STZ) is a common drug used to experimentally induce *Diabetes mellitus* (DM). STZ toxicity is known to be directed to pancreatic β-cells and results in a reduced synthesis of insulin and hyperglycemia. But studies indicate that STZ toxicity is also directed to other tissues. *Bauhinia forficata* (BF) is a medicinal plant widely used for DM treatment and this study was conducted to evaluate effects of BF tea over morphological changes 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 were treated for six weeks and after were killed and had their tissues (brain, kidney and liver) removed for histological analysis. **RESULTS AND DISCUSSION:** Liver of STZ-treated animals presented a significant increase in hepatocyte area, which was decreased by BF tea treatment (p <0.05). In kidney, STZ determined a significant increase in both renal corpuscular and subcapsular space area, which were decreased by BF tea treatment (p <0.05). Moreover, the numbers of cellular nuclei were significantly decreased in brain tissue of STZ-treated animals, and the treatment with BF tea was not effective in protecting against this. BF tea treatment without STZ intoxication did not determine anyone histological differences in comparison to untreated control. Similar to our results, others studies also described histological changes in organs of STZ-treated mice. However, there not are other studies that have evaluated the effects of BF in morphological damage STZ induced. **CONCLUSIONS:** BF tea, as popularly used, was effective in reducing morphological damage induced by STZ in mice.

**Key Words:** Streptozotocin; *Bauhinia forficata*; Morphological damage.

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