Effects of Bauhinia forficata Tea on the Oxidative Damage Determined by Hyperglycemia in Human Erythrocytes In Vitro

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The chronic hyperglycemia determines a series of biochemical phenomena, which are involved in the genesis of the oxidative stress in diabetes mellitus. The aim of this study was to evaluate the effects of the Bauhinia forficata (BF) tea on the oxidative damage depicted by different glucose concentrations in human erythrocytes in vitro. The human blood samples (20mL) were collected from healthy volunteers in previously heparinized tubes, and thus centrifuged (10 minutes at 2000g) and washed twice with NaCl (0.9%). Samples of the washed erythrocytes were incubated with different glucose (0 to 500 mM) and/or tea concentrations (0.1 to 10mg/ml) and kept under stirring for 24 and/or 48 hours. After the incubation the samples were precipitated with trichloroacetic acid (TCA 40%) and centrifuged (10 minutes at 2000g) in order to obtain the supernatant (S1) that was used in the biochemical analysis. We observed a significant increase in the thiobarbituric acid reactive substances (TBA-RS) levels depicted by glucose (250 to 500 mM) after 24 hours and/or 48 hours of incubation (p≤0,05). The tea was able to reduce the TBA-RS levels after 24h but not after 48 hours. Furthermore, the highest glucose concentration tested (500mM) depicted a significant decrease in the non protein thiol (SH) groups levels (p≤0,05), and the tea at 1mg/ml was able to maintain the control (glucose at 5mM) -SH levels. In conclusion, the BF tea at 1mg/ml showed more satisfactory results to reduce the oxidative damage caused by hyperglycemia in human erythrocyte when tested in vitro.

Word Keys: Bauhinia forficata; Hyperglycemia; Oxidative damage
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