Effects of the Mikania Glomerata Tea on the Oxidative Damage Caused by Sodium Nitroprusside in Human Blood in vitro

Puntel, B.¹, Bianchini, M.C.²; Leal, C.Q.²; Fernandes, A.C.²; Puntel, G.O.²; Puntel, R.L.²; Folmer, V.²; Soares, F. A. A.¹

¹ Universidade Federal de Santa Maria – UFSM – Departamento de Química;
² Universidade Federal do Pampa – UNIPAMPA;

Medicinal plants are usually used to treat many human diseases. In Brazil, Mikania glomerata, popularly known as guaco, is widely used in popular medicine due to its well known pharmacological properties. The aim of this study was to evaluate the effects of the Mikania glomerata tea on the oxidative damage caused by sodium nitroprusside (SNP) in human blood in vitro. The tea used was prepared with dried leaves, which were left in boiling water for twenty minutes. Before each analysis, a fresh tea was prepared. The human blood was collected (10mL) from healthy volunteers in tubes previously heparinized and kept under stirring until the experiments. Samples of the human blood were kept under stirring in small sample tubes with different concentrations of the tea and different concentrations of sodium nitroprusside (SNP) for two or four hours. After the incubation period the levels of non-protein sulfhydryl groups (-SH) and thiobarbituric acid reactive species (TBARS) were determined as indicators of the oxidative damage induced by SNP and the possible antioxidant effects of the tea. In general, our results show that the tea reduced the oxidative damage caused by SNP in the human blood in vitro, especially in its intermediate concentrations (10-50ug). These results may be related to the tea potential to interact with metals (chelating properties) and also to interfere in the formation of reactive species derived from nitric oxide (NO). However, it’s necessary more studies to elucidate the antioxidant potential of the tea, as well as its probable mechanism of action.

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