Studies of Coagulant, Hemolytic and Oxidative Stress Activities from Bothrops alternatus Snake Venom

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INTRODUCTION: The snakebite caused by *Bothrops alternatus*, popularly called "urutu cruzeiro", induce serious consequences in the human body. Among the biological activities triggered by *B. alternatus* snake venom are some toxic activities and moderate haemorrhagic and necrotizing effects. **OBJECTIVE:** The purpose of this study was to evaluate the coagulant, haemolytic and oxidative stress effects, caused by the *B. alternatus* snake venom against the human plasma, erythrocytes from the AB, A, B, and O blood groups and hemoglobin. **MATERIAL AND METHODS:** The coagulant activity against human citrated plasma by different amounts of snake crude venom (10, 5, 2.5, 1.25 µg) was evaluated according to Alvarado and Gutierrez (1988). The hemolytic activity of the crude ophidic venom (1000, 100, 10, 1 and 0.1 µg) was evaluated against human erythrocytes, in the presence of calcium, or in the presence of fatty acid or in the presence of both according Hubert et al (1997). The oxidant and antioxidant activities of crude venom (1000, 100, 10, 1 and 0.1 µg) were evaluated against hemoglobin or hemoglobin plus phenylhydrazine according Naoum et al (2004). **DISCUSSION AND RESULTS:** The coagulation time was dose dependent, as the ophidic venom concentration increases, decreases coagulation time. None of crude venom concentrations induce hemolysis in the absence or presence of calcium. However in the presence of calcium plus fatty acid the hemolysis rate reached 20%. No increase of methemoglobin formation after exposure of the hemoglobin against different quantities of the crude snake venom. Additionally the crude snake venom not protected the hemoglobin oxidation by phenylhydrazine. **CONCLUSION:** The crude venom of *Bothrops alternatus* snake presented indirect hemolytic effect and coagulant activity, but it did not show oxidant nor anti-oxidant effects.

Keywords: *Bothrops alternatus*, snake venom, biological effects

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