Dissertation Abstract

Effects of aqueous and hydroalcoholic extracts and ultra-highly diluted solutions of *Palicourea marcgravii* (Rubiaceae) in rats

Luiz Figueira Pinto (PhD)
Advisor: Paulo Fernando de Vargas Peixoto
Federal Rural University of Rio de Janeiro, RJ, Brazil

**ABSTRACT**

*Palicourea marcgravii* (*Pm*) is the most important toxic plant in Brazil. It is responsible for about half of all bovine deaths by natural poisoning in the country. The poisoning has a hyperacute evolution resulting in sudden death, which is attributed to the monofluoroacetic acid. This substance has high toxicity to several mammals, including humans. The homeopathic therapeutics uses ultra-highly diluted and dynamized solutions and there is enough evidence to investigate them as possible protection against poisonings. The aims of the present work were to compare the toxic effects of aqueous (AE) and hydroalcoholic (mother tincture - MT) extracts of *Pm* in rats, evaluate the effects of ultra-highly diluted and dynamized solutions (*Pm* 6CH and *Pm* 30CH) over the development of tolerance to the toxic effects of *Pm* and evaluate clinical, necroscopic and histopathological alterations in non-intoxicated rats treated with these solutions. AE and MT groups were formed of 10 animals each which received the extract in doses of 0.4g/kg, 0.8g/kg, 2g/kg and 4g/kg, intragastrically. The UD6EA and UD30EA groups were formed of five rats each, which received respectively 1 mL of *Pm* 6CH e *Pm* 30CH solutions, by oral route, three times a day, for eight days. Then, they were intoxicated with 2g/kg of *Pm* aqueous extract, intragastrically and received the correspondent ultra-highly diluted and dynamized preparations hourly until death. The UD6 and UD30 groups were formed of five rats each and received respectively 1 mL of *Pm* 6CH and *Pm* 30CH, orally, three times a day for 63 days. The animals were evaluated using clinical parameters, including the direct observation of their behavior at the open field and at the elevated plus-maze, and the study of the macro and microscopic lesions. Hyperacute death occurred after administration of the doses of 0.4g/kg, 0.8g/kg, 2g/kg e 4g/kg. In the AE group, prostration and nervous hyperexcitability followed or not by convulsive crisis were observed. In the MT group, the animals presented marked nervous depression without convulsion. Hepatic congestion and evidence of cardiac dilation were observed in the necropsy. Hydropic vacuolar degeneration of the renal distal convoluted tubules and congestion of several organs were observed in the histopathological examination. The latencies for the emergence of the first clinical signs, the convulsions and death occurrence were different in the animals of groups AE1 (*Pm* 2g/kg), UD6EA and UD30EA, but was considered inadequate the animals amount. Groups UD6 and UD30 did not show any clinical, behavioral, necroscopic or histopathological differences when compared to the control group. The conclusions were that the aqueous extract causes nervous excitability and convulsions while the mother tincture causes nervous depression. There is cumulative effect of the toxic substances present in the plant, and there is not evidence that the ultra-highly diluted and dynamized preparation increases the tolerance to *Pm* intoxication.

**Keywords:** *Palicourea marcgravii*, ultra-highly diluted, monofluoroacetic acid.