

## An investigation of toxicity of *Trichosanthes cucumerina*

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*Trichosanthes cucumerina* (S. dummella; F. cucurbitaceae) is a medicinal plant used traditionally in Sri Lanka as a remedy for diabetes, fever, acute bronchitis, boils, sores, etc. To date, no attempts have been made to evaluate whether the plant has any toxic effects. Therefore, the objective of this study was to determine whether a decoction prepared from aerial parts of *T. cucumerina* (TCD) has any toxic effects. ICR mice (6 weeks; weight 35 – 40g) were used as the experimental model.

Short term and a long term toxicity studies were carried out. In the short term toxicity study, mice were randomly divided into 2 equal groups (n = 12/group). Group 1 (test group) received the TCD at a dose correspondence to the normal human therapeutic dose (1.5 g/kg/mouse/day) and group 2 (control group) received 1 ml of distilled water/ mouse/day for 14 consecutive days. In the long term toxicity study, the same treatment procedure was followed as in the short term toxicity study up to 42 consecutive days.

In both studies, mice were checked twice daily for overt signs of toxicity such as salivation, diarrhoea, fur erection etc. Average food and water intake was determined weekly for each group. The consistency of faeces and colour of urine were noted daily. Further, liver and kidney functions and haematological parameters (red blood cell counts, white blood cell counts, packed cell volume and hemoglobin concentration) were assessed. Liver function was assessed by estimation of serum levels of alanine transaminase, aspartate transaminase and alkaline phosphatase. Renal toxicity was determined by estimation of serum urea and creatinine levels. In the long term toxicity study, effect of TCD on histology of main body organs (heart, liver, kidney, spleen, intestine) were also assessed by microscopic examination of haematoxylin/eosin stained sections of these organs.

LD<sub>50</sub> of TCD was also determined by administration of several doses (3, 6, 12, 15 & 30 g/kg body weight) in mice (n = 10/group). Each dose was given once and the number of deaths and any apparent toxic effects such as salivation, diarrhoea, fur erection etc were noted up to 7 days.

No toxic effects or treatment related deaths were observed in the short term and long term toxicity studies. Food and water intakes were normal. The consistency of faeces and color of urine remained similar to that of respective controls. Further, the therapeutic dose of TCD did not have any significant effect (P>0.05) on kidney or liver function nor the haematological parameters and the histology of major body organs in ICR mice. In the LD<sub>50</sub> study, no deaths or toxic effects were observed. The overall results suggest that TCD at a dose corresponding to the human therapeutic dose does not produce any significant toxic effects in ICR mice.

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