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Effect of long term administration of the novel preparation, Sudarshana Syrup on blood parameters of Wistar rats

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Sudarshana Powder (SP) is an Ayurvedic preparation, which is extensively used in Sri Lanka. This contains 53 ingredients with *Andrographis paniculata* (Burm. F.) Nees being the main component (50%). The extreme bitterness of this powder reduces the patient compliance and administration to children is difficult. Therefore, this powder was developed into a user-friendly standard Ayurveda syrup. The effects of long-term administration of the novel formulation, Sudarshana Syrup (SS) on some biochemical indices such as body weight, liver function, renal function and blood parameters were studied in adult albino Wistar rats.

Rats were divided into three groups (n = 6). Each group was orally administered a single dose/day of SS (5.6 ml/kg), SP (0.78 g/kg) and distilled water (control) respectively, for 42 consecutive days. Dosages of test drugs were determined by calculating the dose per rat equivalent to a normal adult human dosage proportionate to the body weight of a standard 60 kg. At the end of the study period, blood was collected for biochemical, haematological analyses and liver, heart and kidneys were harvested for histopathological studies.

The results of the study showed no signs of toxicity or general behavioral changes or mortality. The results of liver function tests of control, SP and SS indicated alkaline phosphatase 131.85 ± 2.91 , 136 ± 3.91 , 133.51 ± 2.25 IU/L, alanine aminotransferase: 85.97 ± 1.81 , 84.07 ± 1.86 , 85.17 ± 1.43 IU/L, aspartate aminotransferase: 31.5 ± 0.62 , 32.92 ± 1.31 , 34.01 ± 1.76 IU/L and gamma-glutamyl transferase: 4.21 ± 0.61 , 4.37 ± 0.43 , 4.07 ± 0.43 IU/L respectively. The renal function profile of control, SP and SS showed creatinine: 0.62 ± 0.02 , 0.67 ± 0.01 , 0.67 ± 0.02 mg/dl, and urea: 32.57 ± 1.49 , 32.11 ± 1.77 , 33.25 ± 1.02 mg/dl respectively. Haematological evaluation of control, SP and SS indicated; hemoglobin: 14.28 ± 0.10 , 14.02 ± 2.47 and 14.08 ± 0.18 g/dl. No significant ($p > 0.05$) changes were observed in the treated animals compared to the control group in relation to above parameters. No significant changes ($p > 0.05$) were observed in the body weights, food intake and water consumption between treated and control animals. Histopathological studies revealed no significant ($p > 0.05$) changes in the liver, heart and kidney tissues. The



experimental results suggest that the novel formulation, Sudarshana Syrup is potentially safe for chronic administration in rats.

Keywords: Chronic toxicity, histopathological studies, Sudarshana Syrup, Wistar rats

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