Phyto-Constitution of Methanolic Leaf Extract of Ficus Capensis and Its Biochemical, Haematological, and Toxicity Effects on Wistar Rats

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Abstract:

Statement of the Problem: Ficus capensis belongs to the Moraceae family and has been reported to possess various pharmacological properties. However, it is crucial to establish the toxicological profile of this important medicinal plant. Thus, this study investigates the phytoconstituents of methanolic leaf extract of Ficus capensis, and its biochemical, haematological, and toxicity effects using the Wistar rat model. Methodology: Twenty Wistar rats were obtained and then divided into four groups; Group 1 (control) received distilled water, while Groups 2, 3 and 4 orally received the graded doses (10, 100, and 1000 mg/kg, respectively) of the leaf extract for twenty-eight (28) days. All the animals were sacrificed after 28 days of treatment. The phytochemicals, proximate analysis, acute and sub-chronic toxicity were determined on crude leaf extract using standard procedures. Genotoxicity was determined by Comet Assay, biochemical assays (alanine transaminase, aspartate transaminase, alkaline phosphatase, total protein and total bilirubin) were performed using Randox kits, and haematological parameters were determined using automated haematology analyser. Findings: Phytochemical analysis showed the presence of tannin (21.47±0.01 mg), total phenol (148.89±0.04 mg), flavonoid (67.00±0.06 mg), alkaloid (1.06±0.00%), saponin (62.94±0.05 mg) and cardiac glycosides (4.60±0.00 mg) while proximate analysis showed 11.66% moisture, 13.50% ash, 7.80% lipid, 19.69% protein, 10.20% crude fibre, and 37.15% carbohydrates. No mortality or apparent signs of toxicity (up to 5000 mg/kg) was shown. The extract had no significant effect ($p>0.05$) on the biochemical and haematological parameters and the histology of the liver and kidney. The comet assay revealed no genetic damage at all doses administered, although the % tail DNA and tail moment at 100 and 1000 mg/kg were significantly different ($p<0.05$) from the control. Conclusion & Significance: Leaf extract of Ficus capensis contains bioactive compounds and no form of toxicity and can be used as an alternative source of therapy.