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### ***In vivo* sub chronic nephrotoxicity induced by hybrid type star fruit (*Averrhoa carambola*) juice**

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*Averrhoea carambola* (star fruit) is a popular fruit with high nutritive value. Between two available varieties, fresh juice of hybrid type fruit is more attractive due to its sweet taste, compared to the sour tasted wild type. However, due to the high content of oxalic acid and presence of a neurotoxic compound called caramboxin, star fruits are considered as a risk factor for development of nephrotoxicity in consumers. Therefore, the present study was designed to evaluate sub chronic toxic effects induced by continuous consumption of hybrid type star fruit juice in Wistar rats. Ethical clearance was obtained from the Ethics Review Committee of University of Sri Jayewardenepura. Fresh juice (2 ml) of semi-ripened hybrid type star fruits were fed orally to the test group of male Wistar rats (n=6), while the control group was fed with 2 ml of distilled water. After treating for 90 consecutive days, blood and urine were collected and subjected to biochemical, haematological and urine analysis. The harvested kidneys were observed for histopathological changes on H and E stained sections. Blood parameters such as red blood cell, total white blood cell, monocyte, granulocyte, lymphocyte and platelet counts and values of haematocrit, haemoglobin level, mean corpuscular volume, mean corpuscular hemoglobin, mean corpuscular hemoglobin concentration and red cell distribution width showed no significant ( $p>0.05$ ) difference between the two groups. Blood cells also did not exhibit any abnormal morphology on the blood picture. The volume, glucose, protein, pH and specific gravity in urine samples did not indicate any difference between the two groups. Although serum urea, AST and ALT levels did not show a significant change, serum creatinine level exhibited a significant increase ( $p=0.004$ ) in the test group compared to the control group. In kidney histology, abnormal features such as renal tubules dilation, flattening of lining cells of renal tubules, neutrophil infiltration and interstitial edema were prominent in the test group. The results of the present study suggest that continuous consumption of hybrid type star fruit does not develop an anemic condition or liver damage. However, increased serum creatinine level and histopathological observations of renal tissue revealed that there are nephrotoxic changes.

**Keywords:** *Averrhoea carambola*, nephrotoxicity, hybrid type, star fruit

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