Taurine as a Prevention of Hypertension and Increase of Exercise Performance in Fructose-Induced Hypertensive Rat Model

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Introduction: Taurine as a dietary supplement represents a potential new therapeutic agent to reduce the cardiovascular burden from subject under risk of hypertension that obviously decreases performance in exercise and sports. The aim of this study was to evaluate the supplementation of taurine as a prevention of hypertension and increase of exercise performance by multilateral factors in fructose-induced hypertensive rat model.

Materials and Methods: A total of 60 Sprague-Dawley rats, 5-6 weeks of age and 125-140 G weight, were divided four groups, each group contains 15 rats. One group kept control; the rest three groups were fed 35% fructose mixed with commercial chow besides 5% fructose, 1% NaCl, and 0.2% KCl in drinking water for four weeks. Among three groups one kept fructose fed sedentary (F), one group was given exercise (FE) and the other group was given 2% taurine supplement with drinking water along with exercise (FET). At the end of four weeks trial invasive blood pressure, blood ions, total magnesium in plasma and RBC, plasma biochemistry profiles and exercise performance were examined.

Results: Arterial blood pressure was significantly higher in rats fed with high fructose diet and exercise performance was decreased markedly in fructose fed sedentary group. Exercise did not completely prevent the development of hypertension but significantly prevented fructose induced hypertension in FE group also decreased exercise performance. Taurine supplementation in FET group completely prevented the fructose induced hypertension development also increased exercise performance significantly. Evaluation the data of this study indicated that taurine supplementation has multiple beneficial effects like ionic balance, proper maintenance of plasma biochemical status that served as antihypertensive & increased performance acting as antifatigue in regular exercised rat.

Conclusion: Taurine might be successful nutritional supplement as a prevention of hypertension as well as increase efforts in sports and exercise by maintaining ionic balance and plasma biochemical stability.

References

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