Effect of the Phaseolamin on Serum Biochemical Parameters in Non-Diabetic and Streptozotocin-Induced Diabetic Rats

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Phaseolamin is a glycoprotein extracted from seed of *Phaseolus vulgaris* that inhibit the activity of alpha-amylases. Phaseolamin has been marketed and prescribed to reduce glycemia and body weight in humans by blocking of carbohydrates digestion, although there are contradictions regarding its effectiveness. In this study, we evaluated the effects of commercial phaseolamin on the serum biochemical parameters in non-diabetic (ND) and streptozotocin-induced diabetic (D) rats. The animals received water (D e ND control groups), phaseolamin (500 mg/kg) (DP e NDP groups) and acarbose (25mg/kg) as a control drug (DA and NDA groups) through oral gavage daily for 43 days. Neither DP e NDP groups showed reductions in glycemia and body weight compared with controls. However, DP e NDP groups lower glycemic levels when compared before and after treatment. DP rats significantly increased serum uric acid ($P<0.01$), creatinine ($P<0.05$) and urea ($P<0.01$) levels compared to D rats. The level of the alkaline phosphatase (ALP) ($P<0.05$) significantly decreased in DP when compared to D rats. DA rats decreased aspartate aminotransferase (AST) ($P<0.05$), alanine aminotransferase (ALT) ($P<0.001$), triglyceride ($P<0.05$) levels and increased creatinine ($P<0.05$) levels. NDP similar to the NDA rats showed increased creatinine ($P<0.05$), urea ($P<0.01$) and ALT ($P<0.05$) levels while only NDP decreased triglyceride ($P<0.01$) level when compared to ND rats. In conclusion, the subcronical assay with this phaseolamin sample in streptozotocin-induced diabetic rats decreased glycemia without body weight alterations and may cause damage to renal and hepatic functions.

Keywords: diabetes, acarbose, phaseolamin, streptozotocin

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