

SUMMARY

The Protective Effect of RSV on Genotoxic Damage in Streptozotocin Induced Diabetic Rats

Resveratrol (RSV) is assumed to possess many health beneficial effects. Diabetic oxidative stress induce DNA damage. The aim of this thesis was to analyze the preventive effect of RSV in experimentally induced DNA damage in diabetic rats compared to non diabetic rats. Adult Wistar-Albino male rats were used. Five group established as follows, control negative group (non-diabetic rats, n=9), control positive group (diabetic rats, n=6), RSV 5mg/kg (n=6), 25mg/kg (n=6) and 50 mg/kg (n=6) groups (diabetic rats with RSV applied by oral gavage during 45 days). In order to induce diabetes mellitus single dose of 50 mg/kg streptozotocin was intraperitoneally injected. Rats having blood glucose levels higher than 200 mg/dL were considered as diabetic. Body weight was decreased in diabetic rats compared to non-diabetic rats ($P<0,001$). Total antioxidant status was higher in RSV 5 mg/kg group ($P=0,003$) but not significant in 25 and 50 mg/kg RSV groups ($P=0,662$ and $P=0.969$, respectively) according to control negative group. RSV did not affected blood glucose level. Total oxidant status was not significant among groups. Genetic damage index (GDI) was different among RSV, control positive and control negative groups ($P<0,001$). RSV groups were able to diminish GDI according to control positive group ($P<0,001$). Although, there was also significant difference with control negative group ($P<0,001$) but RSV was not able to diminish GDI levels to control positive group. Among RSV groups, GDI was not significant between 25 and 50 mg/kg RSV groups but it was different between 5 and 50 mg/kg RSV groups and GDI values were better for 50 mg/kg RSV group. These results suggest that RSV may diminish DNA damage in diabetic rats.

Key words; RSV, streptozotocin, DNA damage, diabetes mellitus