Summary

The present work aims to detect the possible beneficial role of antioxidant Quercetin in diabetic rats respecting fasting blood glucose level, lipid profile (TC, HDL-c, LDL-c and TG) and insulin hormone level. This study was done on adult albino male rats. These rats were classified into 3 main groups:

1. Group I (control group):

This group received only a vehicle of saline by intraperitoneal injection.

2. Group II (diabetic control group):

Diabetes was induced by a single injection of alloxan in a dose of 160 mg/kg/i.p.

3. Group III (Quercetin treated group):

This group was received Quercetin. According to the regimen of Quercetin it was subdivided 3 subgroups:

a. Subgroup III A: This subgroup was treated with Quercetin for one week before diabetes induction. According to the dose of Quercetin used it was divided into 2 groups:

Group IIIA1: It was injected by 50 mg/kg/i.p

Group IIIA2: It was injected by 25 mg/kg/i.p

b. Subgroup III B: This subgroup was treated with Quercetin for one week after diabetes induction. According to the dose of Quercetin used it was divided into 2 groups:

Group IIIB1: It was injected by 50 mg/kg/i.p

Group IIIB2: It was injected by 25 mg/kg/i.p

c. Subgroup III C: This subgroup was treated with Quercetin for3 days before and one week after diabetes induction. According to the dose of Quercetin used it was divided into 2 groups:

Group IIIC1: It was injected by 50 mg/kg/i.p

Group IIIC2: It was injected by 25 mg/kg/i.p

In the present study, we have proved the diabetic effect of alloxan when used in a dose of 160 mg/kg/i.p. That was proved by measurement of blood glucose by glucometer using tail vein blood sample. Also, we have concluded the protective effect of Quercetin when used before diabetes induction. Furthermore using of Quercetin before and after diabetes induction has proved protective effects. In conditions, FBG and lipid profile levels have decreased while; the level of insulin hormone is increased. Quercetin injection after diabetes has established has proved non beneficial effects.

Conclusion

Quercetin antioxidant which present normally in many fruits and vegetables has a protective role in diabetic rats especially if used before diabetes has established. So, it is favorable in clinical field to recommend usage of the natural sources of this antioxidant especially to people of high risk incidence to diabetes.