

Role of dietary *Curcuma longa* in combination with *Emblca officinalis* in the management of diabetic dyslipidemia

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Diabetes is a metabolic disorder of multiple aetiology. It is also a potent risk factor for cardiovascular diseases. It is characterized by chronic hyperglycemia associated with elevated plasma free fatty acids and an enhanced generation of free radicals. Increasing evidence suggests that this hyperglycemia is responsible for a disturbance in the production and clearance of plasma lipoproteins leading to increasing cases of dyslipidemia in diabetics. A new way to combat heart diseases by diabetic control is fast emerging. This experiment aimed at studying the role of including specific plant nutrients in the diet of diabetic mice to assess the effect if any, on diabetic dyslipidemia of the experimental group. Streptozotocin (200 mg/kg/b.w) induced mice were put on herbal diet supplements for a period extending 4 weeks following which biochemical assessment of the plasma glucose, total cholesterol and triglycerides from the blood samples of the treatment subjected mice was done. The diabetic mice were separated into 4 groups of 10 each and were provided with normal food and water supply. Two groups of mice were selected for administration of aq. extract of dried rhizome powder of *Curcuma longa* (200mg/kg/b.w.) and aq. extract of dried fruit powder of *Emblca officinalis* (200 mg/kg/b.w.) separately. To the third group a combined aq. mixture of *C. longa* and *E. officinalis* extract in the ratio of 1:1 was administered. The fourth group was on food and water as water was the vehicle used for administration of the plant extracts. Diabetic mice with an average fasting sugar of 335 ± 0.343 , showed marked decrease in plasma glucose, total cholesterol and triglycerides following the herbal treatment for 4 weeks. The response was, however, noticeable only towards the middle of the second week of treatment. The response was maximum in the group receiving combination treatment and was lesser in the group on pure *C. longa* extract. The group receiving only *E. officinalis* treatment showed the least amelioration. The results of this experiment show that the hypoglycemic effect and hypolipidemic capacity of dietary *C. longa* is definitely enhanced when supplemented with *E. officinalis*. These plant nutrients if necessarily incorporated into our daily diet regimen will be very beneficial in the overall management of diabetes and related vascular damage.

Biography

Tuhin Rashmi has been a gold medalist in her undergraduate programme and has completed her Ph.D in Biochemistry from Patna University. She is an Assistant Professor at Amity Institute of Biotechnology at Amity University Uttar Pradesh, which has been ranked as the top private university in the country.

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