

2nd International Conference on **Epidemiology & Evolutionary Genetics**

August 18-19, 2014 DoubleTree by Hilton Beijing, China

Ameliorative effect of kaempferol a flavonoid against streptozotocin-generated oxidative stress induced diabetic rats

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The aim of present study was designed to investigate the antioxidant potential of kaempferol in streptozotocin (STZ) induced diabetic rats and to study oxidative stress and antioxidant status. Diabetes was induced in adult male albino Wistar strain, weighing 180-200 g by a single intraperitoneal injection of streptozotocin (40 mg/kg of body weight (BW)). The diabetic rats showed increased plasma glucose and decreased insulin levels and upon treatment with kaempferol showed significantly decreased plasma glucose and increased insulin levels. A significant increase in the levels of thiobarbituric acid reactive substances (TBARS), lipid hydroperoxides (LOOH) and conjugated dienes (CD) were observed in diabetic rat while treated with kaempferol the above lipid peroxidative markers were reverted to near normalcy. The level of non-enzymic antioxidants vitamin C, vitamin E and reduced glutathione (GSH) were significantly decreased in diabetic rats. Oral administration of kaempferol to diabetic rats shows that the levels of non-enzymatic antioxidants back towards the normal levels when compared to diabetic control rats. The activity of enzymatic antioxidants superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPx) and Glutathione-S-transferase (GST) were significantly decreased in diabetic rats and treatment with kaempferol the above enzymatic antioxidants activity were significantly increased. Kaempferol is having a good antioxidant property, as evidenced by increased antioxidant status and decreased lipid peroxidation, which protects the risk of diabetic complications.

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