

Protective role of *Zingiber officinale* to curb visceral obesity induced by monosodium glutamate on neonatal Wistar rats

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Background: In light of the lack of thriving weight-loss treatments and the public-health implications of the obesity pandemic, the development of safe and effective drugs should be a main concern.

Aim: The present study was planned to evaluate the alcoholic extract of *Zingiber officinale* on monosodium glutamate (MSG; ajinomoto)-induced visceral obesity in neonatal (pups) Wistar rats.

Materials and Methods: The Wistar rats were administered subcutaneously with MSG (4 g/kg b.w.) from day 2 to 14 after birth, on alternate days. After attaining six-weeks of age, MSG-treated rats were treated with alcoholic extract of *Zingiber officinale* (200 and 400 g/kg b.w., orally) or orlistat (10 mg/kg b.w., orally) for 28 days, respectively. Biochemical investigations were done on day 29 apart from weekly body weight assessment.

Results: Alcoholic extract of *Zingiber officinale* produced significant reduction in serum leptin, insulin, glucose, total cholesterol (TC), triglycerides (TGs), lactate dehydrogenase (LDH) levels, and elevation in serum high density lipoprotein cholesterol (HDL-C) levels.

Conclusion: Results were comparable positive control drug orlistat, a standard anti-obesity drug, and provide clear evidence that the alcoholic extract of *Zingiber officinale* treatment offered significant protection against MSG-induced obesity.

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