

Ghrelin, Obestatin and Ghrelin/Obestatin Ratio: A Postprandial Study in Healthy Subjects of Normal Weight

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Abstract : Introduction: The role of ghrelin and obestatin in appetite regulation has been investigated. However, data on ghrelin and obestatin changes after food ingestion are negligible. Objective: We aimed at assessing the appetite-regulating hormones, ghrelin, and obestatin, and furthermore calculate ghrelin/obestatin ratio in healthy normal-weight subjects after consumption of raisins. This survey is a comparative study of a glucose control with raisins containing fructose and glucose in similar concentrations as well as fibers. Methodology: Ten apparently healthy subjects who reported no history of glucose intolerance, diabetes, gastrointestinal disorders, or recent use of any antibiotics were enrolled in the study. The raisins used (*Vitis vinifera*) originate in Greece and are distributed worldwide as Corinthian raisins. In a randomized crossover design, all subjects after an overnight fast consumed, either 50g of glucose diluted in 240 mL of water (control) or 74 g of raisins (sugar content 50 g) with a 5-day interval between individual trials. Vein blood samples were collected at baseline and at 60, 120 and 180 min postprandially. In blood samples ghrelin and obestatin were measured applying specific enzyme linked immuno absorbent assays. Results: The subjects were of mean age 26.3 years, with BMI of 21.6 kg/m², waist circumference of 77.7 cm, normal serum lipidemic parameters and normal HbA1c levels. Ghrelin levels were significantly lower after raisin consumption compared to glucose at 120 and at 180 min post-ingestion ($p=0.011$ and $p=0.035$, respectively). However, obestatin did not reach statistical significance between the two interventions. The ghrelin/obestatin ratio was found significantly lower ($p=0.020$) at 120 min after raisin ingestion compared to control. Conclusion: Two isocaloric foods containing equal amounts of sugars, however with a different composition, have different effects on appetite hormones ghrelin and obestatin in normal-weight healthy subjects.

Keywords : appetite, ghrelin, obestatin, raisins

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