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Fructooligosacchairde (Fos) can modulate gut satietogenic hormones, gut flora and induce weight loss in obese adults

Aparna Assudani and **Mini Sheth**
Maharaja Sayajirao University of Baroda, India

In India, the era of health transition has brought the dual burden of under and over-nutrition. Recent researches focuses on identifying unconventional mechanisms of obesity involving gut - brain axis, prevention and treatment of obesity. Hence this study was conducted with an objective to examine the effects of Fructooligosaccharide (FOS) supplementation on gut satietogenic hormones (GLP-1, GIP, PYY, Leptin, Ghrelin and Insulin), gut-flora (*Bifidobacterium, Lactobacillus, Clostridium and Bacteroides),* and anthropometric measurements. A randomized, double-blind, placebo controlled trial with 120 young obese grade –I subjects (25-35 yrs) was designed. They were randomly assigned to groups that received either 20g FOS/d or 20g dextrose/d for 90 days. Anthropometric measurements, fasting plasma and faecal samples were collected at baseline and post intervention. Plasma samples for gut hormones were analyzed using Luminex x-MAP technology in sub sample of 60 subjects. Results in experimental group revealed significant reduction in weight, BMI, WC, WHR and body fat by 2.55%, 2.45%, 2.51%, 3.11%, and 5.93% respectively as compared to placebo group. Colonization of *Bifidobacterium* (8.13%) and Lactobacillus (10.77%) was significantly increased, however significant reduction in colonization of Clostridium (1.87%) and Bacteroides (13.07%) was observed. Significant increase in plasma level of gut satietogenic hormone GLP-1 (1.53%) and Ghrelin (17.33%) along-with reduction in Leptin (5.78%) and Insulin (5.83%) was also observed. Weight negatively correlated ($p<0.001$) with GLP-1($r = -0.729$) and GIP ($r = -0.603$) and positively with Clostridium ($r = 0.09$, NS) and Bacteroides ($r = 0.09$, NS). Stepwise linear regression depicted GLP-1 as a strong predictor of obesity (58.6%). Hence, FOS proves to be a promising supplement in inducing weight loss by modulating gut satietogenic hormones and gutflora.

Biography

Aparna Assudani is currently pursuing her PhD from India in the field of Prebiotics and Obesity (Clinical Dietetics). She has 11 years of experience as a Senior Clinical Dietitian in corporate hospitals of India. She was a part of Senior Management and member of CEO's working committee in Apollo Hospital International Ltd. in India. She has won 3 awards in oral and poster presentation in National Conferences conducted in India (Golden jubilee award as practicing Dietitan and Swarna padak award for Experimental Nutrition). She has published 6 papers in reputed journals. She has recently immigrated to Canada and is looking forward for a bright career in the field of Research and Dietetics.

aparnaassudani@gmail.com

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