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Research Shows First-of-Its-Kind Hydrogel Decreases Obese Patients' Desire for Food

22/04/2010 18:17:00

BOSTON - New research indicates that a first-of-its-kind, superabsorbent hydrogel significantly increased the post-meal feeling of satiety and reduced hunger between meals in obese patients. This data was presented today at the American Association of Clinical Endocrinologists (AACE) 19th Annual Meeting & Clinical Congress.

Attiva, the first superabsorbent hydrogel composed entirely from food-grade materials, is currently being developed by Boston-based medical technology company Gelesis, Inc. It acts by swelling and taking up stomach volume. A team of physicians from Italy (Drs. Roberto Tacchino and Serena Marchisella) administered the product to 95 normal, overweight and obese subjects with an average Body Mass Index (BMI) of 31. Subjects received two grams of Attiva versus placebo before breakfast, lunch, and dinner, in a double-blind, cross-over study. Researchers then assessed if satiety was increased through a self-administered questionnaire for patients filled out immediately, 30 and then 60 minutes after the meal.

Results indicated that Attiva significantly increased the post-meal feeling of satiety. At 30 minutes after breakfast and dinner, and at 60 minutes after lunch and dinner, the hydrogel achieved significantly higher scores compared to the placebo. Subjects who were administered Attiva prior to the start of lunch reported feeling significantly less hungry prior to dinner.

"This is an exciting new approach to tackling obesity," said Dr. James Hill, Professor of Medicine & Pediatrics at the University of Colorado, and Past President of The Obesity Society (TOS), "This new hydrogel is an innovative way to effectively increase satiation while decreasing food consumption."

Attiva is designed to occupy the gastric and intestinal cavities while inducing a feeling of satiety that lasts beyond its transit time in the stomach. Afterwards, it safely degrades in the colon and releases absorbed liquids.

When fully swollen, the product creates very small and individual gel beads that are mixed homogenously with the food in the stomach and also have the same rheological properties (consistency and flow) as digested foods.

"The research team was able to overcome the enormous technical hurdles in creating a superabsorbent polymer made entirely out of food," Dr. Robert Langer, Institute Professor at the Massachusetts Institute of Technology (MIT) said. "This opens the door for entirely new uses of polymers in medicine and offers hope in treating obesity."

"For years, one of the most important goals in weight management has been the development of an effective treatment that lacks the invasiveness and side effects that surround current approaches," Hassan M. Heshmati, MD, the study's primary author said. "This marks an exciting step toward that goal."

To view video of how Attiva works, please click here. To view a PDF copy of the abstract, please click here.

To read about additional new medical research at the AACE 19th Annual Meeting & Clinical Congress, please visit media.aace.com or follow the Twitter hashtag #AACE10.

To view brief bios and photos of the authors including Dr. Hassan M. Heshmati and Attiva's inventors, Dr. Alessandro Sannino, Dr. Luigi Ambrosio and Dr. Luigi Nicolais, please click here.

About the American Association of Clinical Endocrinologists (AACE)

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