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Contact: Charles Blue
cblue@endo-society.org
301-941-0240
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Aspirin-like compounds increase insulin secretion in otherwise healthy obese people

Aspirin-like compounds (salicylates) can claim another health benefit: increasing the amount of insulin produced by otherwise healthy obese people. Obesity is associated with insulin resistance, the first step toward type 2 diabetes.

Aspirin and other salicylates are known to reduce blood glucose in diabetic patients. New research accepted for publication in the Journal of Clinical Endocrinology & Metabolism reveals a similar beneficial effect among obese individuals by increasing the amount of insulin secreted into the bloodstream.

The administration of a salicylate led to the lowering of serum glucose concentrations,' said Jose-Manuel Fernandez-Real of the Institut de nvestigacio Biomedica de Girona and CIBEROBN Fisiopatologia de la Obesidad, Spain, and lead author of the study. These findings highlight the importance of further research on the possible therapeutic benefit of aspirin in the fight against type 2 diabetes.

For their study, Fernandez-Real and his colleagues evaluated the effects of triflusal (a derivative of salicylate) on 28 subjects (nine men and 29 women). The average age of the participants was 48 years old and their average Body Mass Index (BMI) was 33.9. A BMI of over 30 is considered obese. During three, four-week treatment periods, the study participants received a 600 mg dose, a 900 mg dose, or a placebo once per day.

The researchers found that administration of triflusal led to decreased fasting serum glucose. Contrary to their expectations, insulin sensitivity did not significantly change during the trial. Insulin secretion, however, significantly increased in relation to the dose size.

In conjunction with the human studies, the researchers also conducted laboratory studies on insulin-producing cells (known as islets of Langerhans) from mice and humans. The researchers observed that triflusal significantly increased the insulin secreted by these cells.

Aspirin therapy has been recognized to improve glucose tolerance and to reduce insulin requirements in diabetic subjects,' said Fernandez-Real. To our knowledge, this is the first study to show that salicylates lowered serum glucose in non-diabetic obese subjects. We believe that this effect was due to a previously unsuspected increase in insulin secretion rather than enhanced insulin sensitivity.

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The paper salicylates increase insulin secretion in healthy obese subjects will appear in the July issue of JCEM, a publication of The Endocrine Society.

Other researchers involved in the study include Abel Lobez-Mermejo, Ana-Belen Ropero, Sandra Piquer, Angel Nadal, Judit Bassols, Roser Casamitjana, Roman Gomis, Eva Arnaiz, Inaki Perez, and Wifredo Ricart.