

News & Comments

Enteropathy in Diabetic Mice Is Improved by Fatty Acid Amide Hydrolase Inhibition

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The prevalence of diabetes, a serious public health issue that affects the entire world's population, is on the rise. Around 30.5 million Americans, or 9% of the population, have diabetes, and 1.25 million of them have type 1 diabetes, according to research by the American Diabetes Association (T1D). Up to 75% of diabetic individuals have gastrointestinal issues, according to one study. Enteropathy, a less common GI tract issue, can include faecal incontinence, diarrhoea, stomach pain, and constipation. According to several studies, the endocannabinoid system's activation may influence the onset of diabetes and its consequences by fostering oxidative stress and inflammation. Male C57BL/6J mice aged seven weeks were used in this investigation (Jackson Laboratories, Bar Harbor, ME, USA). In accordance with approved institutional animal care and use regulations, the mice were kept at room temperature with a 12-hour light/dark cycle. Each cage had two to three animals, along with unlimited access to food and water. Water and food were cut off two hours before the trial. Each experimental animal was then moved to a fresh individual cage empty of food, drink, or bedding for an additional 30 minutes of acclimation. Using an intragastric gavage of Evans Blue, the entire gut transit was assessed. Mice were given an overnight fast and allowed access to water until two hours before the experiment. In this study, we investigated the effects of gastric dysmotility on the total gut transit time and the faecal matter pellet count in STZ-induced type 1 diabetes. Examining the role of the endocannabinoid system in the modification of gastric emptying in T1D mice was the overarching goal of the current investigation. Diabetes is known to influence gut motility, which affects the entire gut transit time and affects the rate at which food leaves the stomach, either delaying or speeding up the process. Increased faecal production in diabetic mice shows altered gut permeability as well as neuronal dysfunction in the sympathetic nervous system. Overall, the findings show that an increase in faecal bulk rather than over secretion or changes in gut permeability are the primary causes of an elevated faecal pellet count.

The results of the current investigation suggest that FAAH inhibition may represent a novel therapeutic strategy for the management of abnormal intestinal motility in diabetes. Most research on the commonly used cannabis for GI issues has concentrated on their effectiveness as antiemetic and motility aids. This study's reach is constrained. To clarify the precise function of these substances on a range of gastrointestinal problems, including intestinal dysmotility and gastroparesis in diabetic patients, future research using specific cannabinoid CB1 receptor agonists and antagonists will be helpful.

Source: [Veterinary Sciences](#)



KEYWORDS

Diabetes; gastrointestinal, endocannabinoid, fatty acid amide hydrolase

