Investigating the Impact of Ozempic Treatment on Alcohol Consumption in Individuals with Class 1 and Class 2 Obesity

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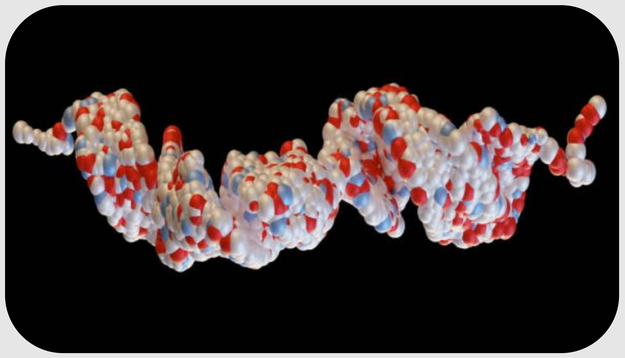
Background

Glucagon like-peptide 1 (GLP-1) is a molecule that leads to the secretion of incretin, a hormone responsible for increasing insulin secretion and decreasing glucagon secretion (1). These combined functions lead to an increase in the amount of time it takes for gastric emptying. GLP-1 receptor agonists are medications widely used today to treat type 2 diabetes due to the mentioned functions as well as popular use in weight loss. Semaglutide, brand name Ozempic, is one such GLP-1 receptor agonist. By binding to the GLP-1 receptor, Ozempic can produce the same responses a normal GLP-1 molecule can.

The purpose of this investigation is to see if the correlation between Ozempic treatment for weight loss leads to decreased alcohol consumption in human individuals with class 1 or 2 obesity. According to the CDC, around 17% of adults in the United States participate in binge drinking and 7% drink heavily (2). Excessive or heavy drinking consists of fifteen or more drink for men and eight or more drinks for women per week (2). Alcohol is more calorically dense than carbohydrates and proteins. Some recent studies have shown that light and moderate drinking are not associated with weight gain, however heavy drinking has some correlation to weight gain (3).

Though it is widely used in the treatment of type 2 diabetes and weight loss, current research suggests the possibility of Ozempic use in reducing alcohol consumption as well. So far, the correlation between Ozempic and alcohol consumption has been tested in rodents, and results indicate that alcohol consumption decreased through use of this GLP-1 receptor agonist (4).



Picture 1. Stock image from iStock by Getty Images representing a 3D rendering of a glucagon like-peptide 1 molecule.

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Methods

A power analysis will be done to determine how many participants will be needed. Participants in this study shall possess a Body Mass Index (BMI) ranging from 30.0 to 39.0 kg/m^2 upon enrollment, categorizing them as having either Class 1 or Class 2 obesity. Selection criteria will also be based on the Centers for Disease Control and Prevention's guidelines for binge drinking which will be determined through an intake survey conducted at participating weight loss clinics (2). The control group will consist of individuals undergoing dietary counseling only. The experimental group will receive a weekly subcutaneous dose of Ozempic. All participants will be provided with a portable digital breathalyzer that uploads data to a mobile application. Over the span of 30 days, participants will receive randomized notifications three times daily, encompassing morning, afternoon, and evening hours, prompting them to conduct a breathalyzer test. A brief survey will also be sent prompting the participant to assess their alcohol intake within the previous four hours. The participants' blood alcohol level data will be synchronized to the mobile application. Data analysis will only include participants with a minimum compliance of 80%.

Picture 2. Stock image from iStock by Getty Images representing subcutaneous Ozempic injection pens.

Phase 1: Participant Selection

- Control group: 30-50
- individuals receiving dietary counseling at clinic without any additional medications or therapies
- Experimental group: 30-50 individuals receiving weekly subcutaneous doses of Ozempic

Phase 2: Data Collection

- 30-day time period
- Prompted blood alcohol level data will be synchronized with portable breathalyzer's mobile application
- Daily self-surveys will be submitted via Google Forms

Phase 3: Data Synthesis

- At the end of the 30-day period, data from those with a minimum of 80% compliance will be synthesized

Potential Implications

This study is building upon previous research conducted on rodents, which have demonstrated the correlation between the use of the GLP-1 agonist semaglutide and decreased alcohol consumption (4). We hypothesize that human participants who receive Ozempic treatment will exhibit reduced consumption of alcohol over the span of a month compared to subjects who do not. Positive findings will indicate that semaglutide is a potential treatment for excessive alcohol consumption and may provide an alternative to current treatments.

Sources

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