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Ozempic's positive and negative impact on the heart

Intro

Ozempic (semaglutide) is a GLP-1 receptor agonist, a class of drugs that mimics the glucagon-like-peptide-1 hormone naturally produced in the gut. It stimulates insulin secretion, suppresses glucagon release, and delays gastric emptying. Heart disease is the number one killer for people with type 2 diabetes and obesity. Excess weight elevates blood pressure, cholesterol, and systemic inflammation. In leading up to Ozempic's approval, multiple landmark trials were necessary to prove its efficacy and safety.

Methods

Using MEDLINE, we look retrospectively at the landmark trials that establish Ozempic as the diabetic drug and observe its cardiac impacts. Its negative cardiac effects were also examined.

Results

In SUSTAIN-6 trial (2016), 3000+ patients with diabetes, Ozempic reduced the risks of major adverse cardiovascular events (MACE) by 26%. In SELECT trial (2023), 17,000+ overweight/obese patients without diabetes, Ozempic cut MACE risks by 20%. The drug does elevate heart rate, has questionable effects on heart failure, and has reports of pancreatitis. Liraglutide and Dulaglutide showed modest MACE effect (13%, 12%) while Exenatide showed no MACE effect (0%).

Conclusion

Ozempic has become very popular in the last several years in the diabetic and obese patient populations. Its cardiac impact has thus been trended as overall positive although side effects are slowly being reported. We expect in the years to come more study will elucidate those effects.



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Keywords: Ozempic, Semaglutide, Glucagon-like-peptide-1, SUSTAIN-6 trial, SELECT trial.

Biography

Julianne Lin, The Master's University

Student in the Biological Sciences Department, will be applying to pharmacy school in one year.

Current research interest includes recently FDA approved drugs, its mechanism of action and its safety profile.

Other interests include global mission and have participated in oversea work in Mexico and Albania