Semaglutide reduces COVID-19 related deaths in patients with obesity and cardiovascular disease

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Semaglutide, the popular anti-obesity drug, reduced the rates of COVID-19-related adverse events, including death, in those who had

overweight or obesity and established cardiovascular disease (CVD) without diabetes, according to a new study published in *JACC*. The results will be published simultaneously with a presentation at the European Society of Cardiology (ESC) Conference 2024 in London.

Obesity is associated with an increased risk of death and can increase many cardiovascular risk factors. A higher BMI can also increase the risk of non-CV causes of death, including infection. In this new substudy of the SELECT Trial, researchers looked at whether once-weekly semaglutide (2.4mg) reduced rates of all-cause death, CV death, and non-CV death, including death from COVID-19.

"This groundbreaking study demonstrates that semaglutide, perhaps by improving cardiometabolic health, has far-reaching benefits beyond what we initially imagined," said Harlan M. Krumholz, MD, FACC, Editor-in-Chief of *JACC* and the Harold H. Hines, Jr Professor at the Yale School of Medicine.

"The ability of semaglutide to significantly lower cardiovascular and COVID-19-related adverse events underscores the transformative potential of targeting obesity and improving cardiometabolic health as a strategy to protect against a broad spectrum of health threats."

The SELECT trial enrolled 17,604 people who were 45 years old or older and were overweight or had obesity and established CV disease but not diabetes. They received one-weekly semaglutide (2.4 mg) or placebo and were followed for 3.3 years. Of the 833 deaths in trial participants, 58% were CV related, and 42% were non-CV related. Infection was the most common cause of non-CV death, but that occurred at a lower rate in the semaglutide group vs. the placebo group.

Semaglutide did not reduce rates of COVID-19, but among participants who developed COVID-19, those who were treated with semaglutide had

fewer COVID-19-related adverse events or died from COVID-19 (2.6% on semaglutide vs. 3.1% on placebo).

"The robust reduction in non-CV death, and particularly infections deaths, was surprising and perhaps only detectable because of the COVID-19-related surge in non-CV deaths," said Benjamin Scirica, MD, MPH, lead author of the study, a professor of cardiovascular medicine at Harvard Medical School, and director of innovation in the Cardiovascular Division at Brigham and Women's Hospital in Boston.

"However, these findings reinforce that overweight and obesity increases the risk of death due to many etiologies, which can be modified with potent incretin-based therapies like semaglutide."

In a related editorial comment, Jeremy Samuel Faust, MD, MS, an emergency medicine physician at Brigham and Women's Hospital, commended the researchers for adapting their study to look at COVID-19 when the pandemic began and said the findings that semaglutide could reduce COVID-19 morality is "akin to a vaccine against the indirect effects of a pathogen."

"People with coronary artery disease who had fatal myocardial infarctions precipitated by the physiological stress/inflammatory response induced by COVID-19 (or any infection) could have averted those outcomes, were their risk profiles lower when infected," Faust said. "By adding documentation of COVID-19 cases and mortality, the SELECT trial has yielded important insights regarding the epidemiology of COVID-19 and the very nature of infectious disease mortality."

Provided by American College of Cardiology

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