

Effect of Liraglutide on Cardiovascular Outcomes in Patients with Type 2 Diabetes

Type 2 diabetes is a complex metabolic disorder that is characterized by hyperglycemia and associated with a high risk of cardiovascular, microvascular and other complications; so concern has been raised about the cardiovascular safety of antihyperglycemic. Liraglutide is an analogue of human glucagon-like peptide 1 (GLP-1) that has been approved for the treatment of type 2 diabetes. Its efficacy in lowering glucose levels has been established and it has been associated with slight reductions in weight and blood pressure.⁽¹⁾

A new study published in 2016 assess the long-term effects of liraglutide on cardiovascular outcomes and other clinically important events resulted in the rate of the first occurrence of death from cardiovascular causes, nonfatal myocardial infarction, or nonfatal stroke among patients with type 2 diabetes mellitus was lower with liraglutide than with placebo .

In this multicenter, double-blind, placebo-controlled trial performed at 410 sites in 32 countries, they assigned 9340 patients with type 2 diabetes with an age of ≥ 50 years with at least one cardiovascular coexisting condition or an age of ≥ 60 years with at least one cardiovascular risk factor to receive liraglutide or placebo;(4668) patients were randomly assigned to receive liraglutide and (4672) to receive placebo. The median follow-up was 3.8 years and the median daily dose of liraglutide was 1.78 mg .This study excludes the patients who treated with GLP-1–receptor agonists, DPP-4 inhibitors, pramlintide, or rapid acting insulin with familial or personal history of multiple endocrine neoplastic type 2 or medullary thyroid cancer; and the occurrence of an acute coronary or cerebrovascular event within 14 days before screening and randomization.⁽¹⁾

Results showed that death from cardiovascular causes occurred in fewer patients in the liraglutide group (219 patients) than in the placebo group (278) {P=0.007}. The rate of death from any cause was also lower in the liraglutide group (381 patients) than in the placebo group (447) {P=0.02}. The frequencies of nonfatal myocardial infarction and nonfatal stroke were lower in the liraglutide group than in the placebo group; although the differences were not significant.⁽¹⁾

The mechanism by which liraglutide acts to reduce cardiovascular may be expected to be disease-modifying and relate in part to improved glucose control and in part to improvements in other parameters related to CV risk.⁽²⁾

In conclusion; liraglutide is now the third glucose-lowering agent to show cardiovascular benefit and the first of the glucagonlike peptide-1 (GLP-1) class .Further studies needed to show its safety and efficacy for longer time period and for patients at lower risk for cardiovascular events.

References:

- 1- Correia LC, Latado A, Porzsolt S.Liraglutide and Cardiovascular Outcomes in Type 2 Diabetes.N Engl J Med. 2016 Nov 3; 375(18):1798. doi: 10.1056/NEJMc1611289.
- 2- Medscape Medical News. Top-Line Data Show CV Benefit for Liraglutide in Type 2 Diabetes [Internet]. Miriam E Tucker, March 04, 2016[*Updated 2016 Jul 3; cited 2016 Nov 10*]. Available from: <http://www.medscape.com/viewarticle/859905>

Prepared by: Pharm D Shyma'a Irshidat

Supervised by: Pharm D Eshraq Alabweeny