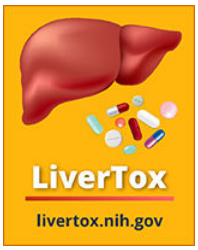
U.S. National Library of Medicine
National Center for Biotechnology Information

NLM Citation: LiverTox: Clinical and Research Information on Drug-Induced Liver Injury [Internet]. Bethesda (MD): National Institute of Diabetes and Digestive and Kidney Diseases; 2012-. Albiglutide. [Updated 2019 Mar 10].
Bookshelf URL: https://www.ncbi.nlm.nih.gov/books/



Albiglutide

Updated: March 10, 2019.

OVERVIEW

Introduction

Albiglutide is a recombinant DNA produced polypeptide analogue of human glucagon-like peptide-1 (GLP-1) which is used in combination with diet and exercise in the therapy of type 2 diabetes, either alone or in combination with other antidiabetic agents. There have been no published reports of hepatotoxicity attributed to albiglutide therapy.

Background

Albiglutide (al" bi gloo' tide) is a glucagon-like peptide-1 (GLP-1) analogue (also called a GLP-1 receptor agonist) that acts like the native gastrointestinal hormone (incretin) to increase insulin secretion. Albiglutide reproduces the activity of GLP-1, binding to specific receptors on pancreatic beta cells and increasing insulin secretion, which can lead to improvement of glycemic control in patients with type 2 diabetes. Albiglutide is a recombinant DNA-produced polypeptide consisting of two 30-amino acid sequence molecules that are fused as a tandem repeat. The amino acid sequence of albiglutide is >90% homologous to endogenous human GLP-1(7-37) and differs only by a single amino acid substitution, which makes it resistant to degradation by dipeptidyl peptidase 4 (DPP4). The half-life of albiglutide is further prolonged by coupling of two recombinant molecules to human serum albumin. Albiglutide, like other GLP-1 analogues, must be given parenterally, but it has a half-life of 5 days which allows for once weekly dosing. Albiglutide was approved for use in the United States in 2014, and current indications are for management of glycemic control in adults with type 2 diabetes in combination with diet and exercise, with or without other oral hypoglycemic agents. Albiglutide is available under the brand name Tanzeum in a powder for reconstitution and is given by subcutaneous injection in an initial dose of 30 mg once weekly, which can be increased to 50 mg once weekly. Albiglutide is generally well tolerated, but side effects can be dose limiting and include injection site reactions, diarrhea, nausea, vomiting, dizziness, headache, fatigue and hypoglycemia. Rare adverse events include pancreatitis and hypersensitivity reactions.

Hepatotoxicity

In large clinical trials, serum enzyme elevations were no more common with albiglutide therapy than with placebo or comparator agents, and no instances of clinically apparent liver injury were reported. Since licensure, there have been no published case reports of hepatotoxicity due to albiglutide and the product label does not list liver injury as an adverse event. Thus, liver injury due to albiglutide must be rare, if it occurs at all.

Likelihood score: E (unlikely cause of clinically apparent liver injury).

Mechanism of Injury

Albiglutide is a polypeptide and is metabolized to amino acids by serum and tissue proteases, and is unlikely to have any direct hepatotoxic potential. Albiglutide acts through the incretin pathway to affect glucose metabolism and, thus, is often grouped with other incretin-based antidiabetic mediations such as the DPP-4 inhibitors, sitagliptin, saxagliptin and linagliptin, and other GLP-1 analogues such as exenatide, which are also discussed in LiverTox.

References regarding the hepatotoxicity and safety of albiglutide are given with the Overview section of the GLP-1 Analogues.

Drug Class: Antidiabetic Agents

Other Drugs in the Subclass, Incretin-Based Drugs, Glucagon-Like Peptide-1 (GLP-1) Analogues: Dulaglutide, Exenatide, Liraglutide, Lixisenatide, Semaglutide

PRODUCT INFORMATION

REPRESENTATIVE TRADE NAMES

Albiglutide – Tanzeum®

DRUG CLASS

Antidiabetic Agents

COMPLETE LABELING

Product labeling at DailyMed, National Library of Medicine, NIH

CHEMICAL FORMULA AND STRUCTURE

DRUG	CAS REGISTRY NO.	MOLECULAR FORMULA	STRUCTURE
Albiglutide	782500-75-8	Protein	Complex Polypeptide