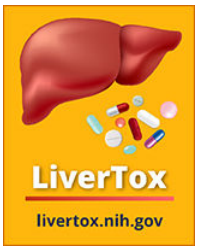
U.S. National Library of Medicine
National Center for Biotechnology Information

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-. Alfuzosin. [Updated 2018 Jan 8].
Bookshelf URL: https://www.ncbi.nlm.nih.gov/books/



Alfuzosin

Updated: January 8, 2018.

OVERVIEW

Introduction

Alfuzosin is a nonselective alpha-1 adrenergic antagonist used in the therapy of benign prostatic hypertrophy. Alfuzosin is associated with a low rate of transient serum aminotransferase elevations and with rare instances of clinically apparent acute liver injury.

Background

Alfuzosin (al fue' zoe sin) is an alpha-1 adrenergic antagonist approved for use in the United States for benign prostatic hypertrophy (but not for therapy of hypertension). Alfuzosin inhibits alpha adrenergic receptors present on smooth muscle in arterioles (called alpha-1b adrenergic receptors), as well as in those in the bladder neck and prostate (alpha-1a adrenergic receptors). The effects of the agent on smooth muscle of the bladder and prostate causes improvement in urine flow in men with partial obstruction due to benign prostatic hypertrophy. Alfuzosin was approved for use in the United States in 2003 for treatment of symptoms of urinary hesitancy due to benign prostatic hypertrophy. Alfuzosin is not approved for use in hypertension. Alfuzosin is available in extended release tablets of 10 mg in several generic forms and under the trade name Uroxatral. The recommended dose is 10 mg with the same meal once daily. Side effects include hypotension, dizziness and syncope (particularly with the initial dose), fatigue, headache, dizziness, palpitations, impotence, incontinence and gastrointestinal upset. Rare, but potentially severe adverse events include postural hypotension, worsening of angina pectoris, priapism and intraoperative floppy iris syndrome.

Hepatotoxicity

Alfuzosin has been associated with a low rate of serum aminotransferase elevations (<2%) that in controlled trials was no higher than with placebo or comparative agent therapy. These elevations were transient and did not require dose modification. Since its approval and more wide spread use, several instances of clinically apparent acute liver injury due to alfuzosin have been published. The onset of injury was within 2 to 4 weeks and the pattern of enzyme elevations was predominantly hepatocellular. Prolonged jaundice with evolution to a cholestatic hepatitis was also described. Allergic features of rash, fever and eosinophilia can occur, but are usually not prominent. Autoantibodies are usually not found. Among the various alpha blockers used for hypertension or prostatic hypertrophy, alfuzosin has been most frequently associated with liver injury, but no instances of acute liver failure or vanishing bile duct syndrome have been described with it use.

Likelihood score: C (probable cause of clinically apparent liver injury).

Mechanism of Injury

The cause of the minor serum aminotransferase elevations and rare instance of clinically apparent liver injury associated with alfuzosin use is not known. Alfuzosin is extensively metabolized by the liver by the cytochrome P450 enzymes (predominantly CYP 3A4) and generation of a mildly toxic intermediate is a possible explanation.

Outcome and Management

No instances of acute liver failure or chronic liver injury have been reported in association with alfuzosin or other alpha-1 adrenergic blockers. There is no information on cross reactivity of the liver injury among the various alpha-1 adrenergic receptor antagonists, but similarity of chemical structure suggests that cross sensitivity may be present.

References to the safety and potential hepatotoxicity of alfuzosin are given in the Overview on the Alpha-1 Adrenergic Receptor Antagonists.

Drug Class: Benign Prostatic Hypertrophy Agents

Other Drugs in the Class:

- Alpha-1 Adrenergic Receptor Antagonists
  - Doxazosin, Silodosin, Tamsulosin, Terazosin
- 5-Alpha Reductase Inhibitors
  - Dutasteride, Finasteride

PRODUCT INFORMATION

REPRESENTATIVE TRADE NAMES

Alfuzosin – Generic, Uroxatral®

DRUG CLASS

Benign Prostatic Hypertrophy Agents

COMPLETE LABELING

Product labeling at DailyMed, National Library of Medicine, NIH

CHEMICAL FORMULA AND STRUCTURE

DRUG	CAS REGISTRY NUMBER	MOLECULAR FORMULA	STRUCTURE
Alfuzosin	81403-80-7	C19-H27-N5-O4