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Prazosin

Updated: January 8, 2018.

OVERVIEW

Introduction

Prazosin is a nonselective alpha-adrenergic antagonist (alpha-blocker) used in the therapy of hypertension. Prazosin is associated with a low rate of transient serum aminotransferase elevations and has not been clearly linked to clinically apparent acute liver injury.

Background

Prazosin (pray' zoe sin) was the first alpha-adrenergic antagonist to be approved for use in the United States and is still widely used for therapy of hypertension. Prazosin inhibits alpha-adrenergic receptors present on smooth muscle in arterioles (so-called alpha-1b adrenergic receptors) as well as in those in the bladder neck and prostate (alpha-1a adrenergic receptors). The inhibition of alpha-adrenergic tone in blood vessels causes relaxation of arteriolar resistance and lowering of the blood pressure. Prazosin was approved for use in the United States in 1976 and is still used for treatment of hypertension, although rarely as a first line agent and usually in combination with other antihypertensives. Prazosin has not been fully evaluated or approved for therapy of benign prostatic hypertrophy (as have other alpha-1 adrenergic antagonists). Prazosin is available in capsules of 1, 2 and 5 mg generically and under the trade name Minipress. Prazosin is usually started at a dose of 1 mg two or three times daily, with increase in the dose based upon tolerance and clinical response to an average of 5 to 20 mg daily in divided doses. Prazosin is also available in a fixed combination with polythiazide (Minizide). Side effects include dizziness and syncope (particularly with the initial dose), fatigue, headache, palpitations, impotence, incontinence and gastrointestinal upset. Rare, but potentially severe side effects include severe postural hypotension and priapism.

Hepatotoxicity

Prazosin has been associated with a low rate of serum aminotransferase elevations that in controlled trials was no higher than with placebo therapy. These elevations were transient and did not require dose modification. No instances of clinically apparent acute liver injury due to prazosin have been published in the literature, but reports of cholestatic hepatitis have been received by the sponsor. Among the alpha adrenergic receptor antagonists, the most frequently implicated agent in causing liver injury has been alfuzosin with only single, and not well documented cases linked to other alpha blockers. Thus, acute symptomatic liver injury due to prazosin is quite rare, and severe hepatotoxicity must be exceeding rare, if it occurs at all.

Likelihood score: E* (unproven but suspected rare cause of clinically apparent liver injury).

Mechanism of Injury

The cause of the minor serum aminotransferase elevations associated with prazosin is not known. Prazosin is extensively metabolized by the liver and generation of a mildly toxic intermediate is a possible explanation.

References on the safety and potential hepatotoxicity of prazosin and other alpha-blockers are given in the Overview on Alpha-1 Adrenergic Receptor Antagonists.

Drug Class: Antihypertensive Agents

Other Drugs in the Subclass, Alpha-1 Adrenergic Receptor Antagonists: Doxazosin, Terazosin

PRODUCT INFORMATION

REPRESENTATIVE TRADE NAMES

Prazosin – Generic, Minipress®

DRUG CLASS

Antihypertensive Agents

COMPLETE LABELING

Product labeling at DailyMed, National Library of Medicine, NIH

CHEMICAL FORMULA AND STRUCTURE

DRUG	CAS REGISTRY NUMBER	MOLECULAR FORMULA	STRUCTURE
Prazosin	19216-56-9	C19-H21-N5-O4