Class IB Antiarrhythmics (Na+ Channel Blockers)

Class IB antiarrhythmics are a class of antiarrhythmic drugs treat ventricular arrhythmias by weakly blocking sodium channels and decreasing action potential duration. These agents also shorten the duration of the refractory period. Common indications for these drugs are acute ventricular and digitalis-induced arrhythmias, as well as arrythmias post-myocardial infarction. These drugs preferentially affect ischemic or depolarized Purkinje and ventricular tissues, and act to decrease action potential duration by blocking sodium currents.Commonly used IB antiarrhythmics include Mexiletine, which is known for causing GI upset in patients, lidocaine, and IV drug which is known to cause CNS depression, and tocainide. Phenytoin is an anti-epileptic medication, which also has class IB antiarrhythmic properties. Long term use of phenytoin is commonly associated with hirsutism, but can yield many other side effects as well.



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Indications

Arrhythmias
Broken Arrhythmia-drum
Class IB antiarrhythmics are prescribed specifically for acute ventricular and digitalis-induced arrhythmias. They are used to treat arrhythmias which arise from improper impulse conduction or impulse generation.

After Myocardial Infarction
Mayo-heart Infarction-fart
Class IB drugs are indicated for use post-myocardial infarction, as they preferentially affect ischemic tissue.

Mechanism of Action

Affect Ischemic Tissue
Eye-ski-mask
Class IB drugs are highly selective for ischemic or depolarized Purkinje and ventricular tissue.

Decrease AP duration
Down-arrow Action-clapper P
These drugs decrease action potential duration because of their blockage of sodium currents. They have fast onset/offset kinetics and have little effect on slower heart rates, but a greater effect on faster heart rates.

Drugs

Mexiletine
Mexican-lettuce
Mexiletine may cause gastrointestinal upset, resulting in abdominal discomfort in a small percentage of people.

GI Upset
Upset GI
GI Upset is a common side effect of Mexiletine.

Lidocaine
Lion-cane
Lidocaine is administered via IV and preferentially treats damaged tissues and acts only on the sodium channel. It is the second-line treatment for ventricular arrhythmias and has a low level of cardiotoxicity.

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CNS Depression

Deflated CNS-brain

CNS depression is an adverse effect of Lidocaine, which may result in seizures in severe overdose.

Tocainide

Toucan

Tocainide is an orally active drug, similar in action to Lidocaine.

Phenytoin

Phone-tow-truck

Phenytoin is an antiseizure drug that is occasionally used as an antiarrhythmic, specifically in digitalis overdose to reverse atrioventricular block. It is known to have many side effects, including drug induced lupus, gingival hyperplasia, teratogenic effects and hirsutism.

Hirsutism

Bearded-lady

Hirsutism is a condition of excessive hair growth on women, often in a male pattern of body hair. It can be caused by an increased level or oversensitivity to androgens, and can be seen in long-term use of phenytoin.

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