

## Digoxin Toxicity: Rx

Digoxin is a controversial medication occasionally prescribed for heart failure. It is a positive inotropic agent and slows conduction through the AV node, working via the  $\text{Na}^+/\text{K}^+$  ATPase pump. It's chronic use/overuse may also change your painting style resulting in you becoming one of the most renowned painters ever, but not until after your death. Unfortunately (or fortunately if you are an art museum curator), it has a very narrow therapeutic index and is renally cleared, predisposing patients to overdose without significant difficulty.

Signs and symptoms of digoxin overdose are non-specific and include generalized malaise, GI upset, vague neurological symptoms including color vision changes, and cardiac arrhythmias. Although digoxin classically slows the heart rate, in an overdose nearly any rhythm can present other than atrial tachyarrhythmias with similarly rapid AV nodal conduction. In fact a more specific (but not pathognomonic) rhythm is an atrial tachyarrhythmia with a slow ventricular response. Electrolytes, digoxin level, and serial ECGs should be obtained in suspected overdose.

The mainstay treatment for digoxin toxicity is digoxin-specific antibody (Fab) fragments. These fragments bind free digoxin rendering them physiologically inert. There is a small risk of allergic reaction, especially in patients with asthma, and hypokalemia with Fab fragment treatment. Other treatment options for digoxin toxicity while awaiting Fab fragments include supportive care, GI decontamination with activated charcoal if appropriate, atropine if needed for bradydysrhythmias.

Further Reading: Cole, JB. Rosen's Emergency Medicine: Concepts and Clinical Practice. 10th ed. "Chapter 142: Cardiovascular Drugs" pp 1884-1890.