

ECG Patterns to Remember for Digoxin Toxicity

Early Recognition of Digoxin Toxicity May Result in Improved Treatment Outcomes^{1,2}

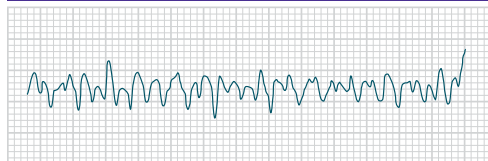


Digoxin toxicity should be considered with evidence of³:

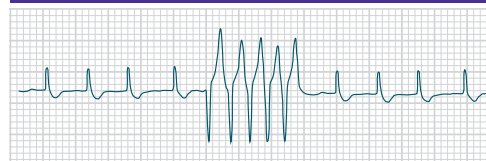
- Increased automaticity
- Impaired conduction through the SA and AV nodes

Indicates potentially life-threatening digoxin toxicity^{4,5}

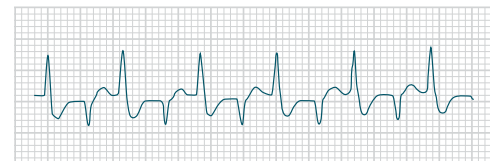
Ventricular Fibrillation



Ventricular Tachycardia

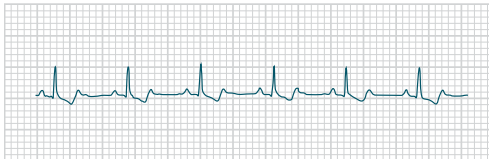


Bidirectional Ventricular Tachycardia



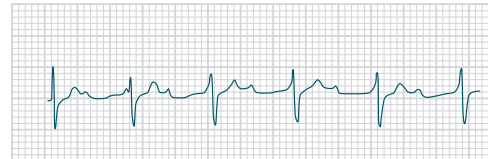
- Highly suggestive of potentially life-threatening digoxin toxicity^{3,4}

Non-paroxysmal Atrial Tachycardia With AV Block



- Highly suggestive of potentially life-threatening digoxin toxicity⁴

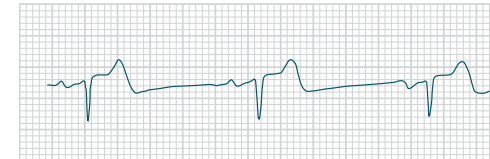
Third Degree AV Block



Second Degree AV Block (Mobitz I)



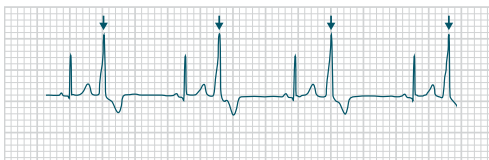
Sinus Bradycardia



- Early sign of digoxin toxicity⁴
- Progressive bradycardia can indicate potentially life-threatening digoxin toxicity⁵

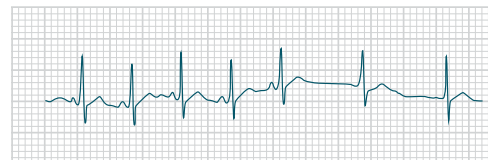
Almost any dysrhythmia or conduction abnormality may be seen with digoxin toxicity^{3,4,6}

Premature Ventricular Contractions

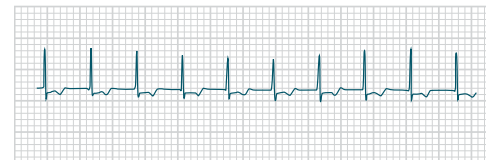


- First sign of digoxin toxicity in 10-15% of cases³
- Most common dysrhythmia related to digoxin toxicity⁴
- Bigeminy common⁴

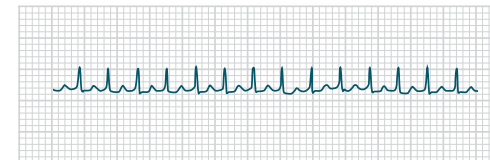
AV Junctional Escape Beats



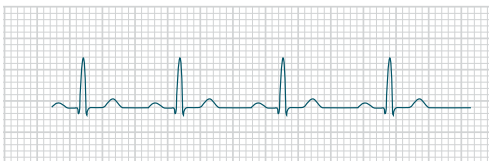
Accelerated Junctional Rhythm



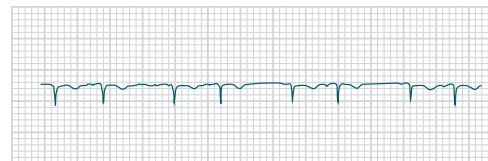
Junctional Tachycardia



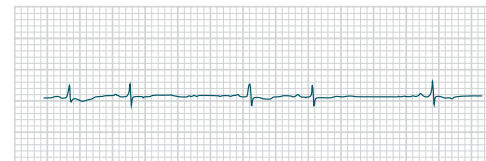
First Degree AV Block



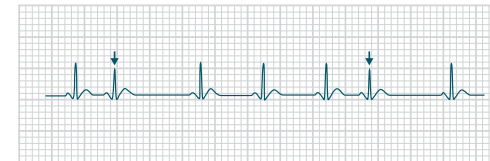
SA Nodal Block (Type I)



SA Nodal Block (Type II)



Premature Atrial Contractions



INDICATIONS AND USAGE

DIGIFab is indicated for the treatment of patients with life-threatening or potentially life-threatening digoxin toxicity or overdose.

Please see Important Safety Information and scan the QR code on the back for full Prescribing Information.

DIGIFab
digoxin immune fab (ovine)

Enhanced Contractility

- Ventricular tachydysrhythmias are more common in patients with chronic or late acute digoxin toxicity³
- Bradydysrhythmias in chronic or late acute digoxin toxicity occur by direct actions on the heart³
 - Often minimally responsive to atropine, if at all

Impaired Conduction Through SA and AV Nodes

- Accentuation of vagal effects is more common in younger, healthy patients⁴
- Initial bradydysrhythmia in acute toxicity results from increases in vagal tone³
 - Often responsive to atropine

"Prompt treatment of cardiac glycoside toxicity is imperative to prevent or treat life-threatening arrhythmias."
-2020 AHA Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care

INDICATIONS AND USAGE

DIGIFab is indicated for the treatment of patients with life-threatening or potentially life-threatening digoxin toxicity or overdose, including:

- Known suicidal or accidental consumption of fatal doses of digoxin: 10 mg or more of digoxin in healthy adults, or 4 mg (or more than 0.1 mg/kg) in healthy children, or ingestion of an amount that can cause steady-state serum concentrations of ≥ 10 ng/mL;
- Chronic ingestions causing steady-state serum digoxin concentrations > 6 ng/mL in adults or 4 ng/mL in children;
- Manifestations of life-threatening toxicity of digoxin overdose such as severe ventricular arrhythmias, progressive bradycardia, and second or third degree heart block not responsive to atropine, serum potassium levels exceeding 5.5 mEq/L in adults or 6 mEq/L in children with rapidly progressive signs and symptoms of digoxin toxicity.

IMPORTANT SAFETY INFORMATION

Warnings and Precautions

General

Suicidal ingestion may result from more than one drug. Consider toxic effects of other drugs or poisons in cases where signs and symptoms of digitalis toxicity are not relieved by administration of DIGIFab.

Rapid drop in serum potassium concentration may occur after treatment. Monitor frequently.

Patients with poor cardiac function may deteriorate secondary to the withdrawal of the inotropic action of digoxin by DIGIFab. Monitor frequently and provide additional inotropic support if needed. Postpone re-digitalization, if possible, until the Fab fragments have been eliminated; this may require several days or a week or longer in patients with impaired renal function.

Hypersensitivity Reactions

Anaphylaxis and hypersensitivity reactions are possible. Carefully monitor patients for signs and symptoms of an acute allergic reaction and if one occurs, stop the infusion and treat immediately with appropriate emergency medical care.

References: 1. Dart RC et al. *Ann Emerg Med.* 2018;71(3):314-325. 2. Levine MD, O'Connor A. UpToDate. Updated January 2020. <https://www.uptodate.com/contents/digitalis-cardiac-glycoside-poisoning>. Accessed October 2, 2020. 3. Hack JB. In: Nelson LS et al, eds. *Goldfrank's Toxicologic Emergencies*. McGraw-Hill Companies, Inc; 2011:936-945. 4. Goldberger AL et al. UpToDate. Updated January 2020. <https://www.uptodate.com/contents/cardiac-arrhythmias-due-to-digoxin-toxicity>. Accessed October 2, 2020. 5. DIGIFab Digoxin Immune Fab (ovine) [package insert]. West Conshohocken, PA: BTG International Inc.; 2017. 6. Limon G et al. *Turk J Emerg Med.* 2016;16(1):17-21. 7. Digoxin oral solution [package insert]. Columbus, OH: Roxane Laboratories, Inc.; 2011. 8. Weil MH In: Pinsky MR, Payen D, eds. *Update in Intensive Care and Emergency Medicine*. Vol 42. Springer; 2005:9-17. 9. Panchal AR et al. *Circulation.* 2020;142(suppl 2):S366-S468.

Patients with known allergies to sheep protein or those who have previously received intact ovine antibodies or Fab are particularly at risk for an anaphylactic reaction.

Do not administer DIGIFab to patients with a known history of hypersensitivity to papaya or papain unless the benefits outweigh the risks and appropriate management for anaphylactic reactions is readily available.

Use of DIGIFab in Renal Failure

The elimination half-life of DIGIFab in renal failure has not been clearly defined. Monitor patients with severe renal failure who receive DIGIFab for a prolonged period for possible recurrence of toxicity. Monitoring of free (unbound) digoxin concentrations after the administration may be appropriate

Laboratory Tests

DIGIFab may interfere with digitalis immunoassay measurements. Thus, standard serum digoxin concentration measurements may be clinically misleading until the Fab fragments are eliminated from the body. This may take several days or a week or more in patients with markedly impaired renal function. If possible, obtain serum digoxin samples before DIGIFab administration to establish the level of serum digoxin at the time of diagnosis.

The total serum digoxin concentration may rise precipitously following administration of DIGIFab, but this will be almost entirely bound to the Fab fragment and not able to react with receptors in the body.

Adverse Reactions

The most common adverse reactions ($> 7\%$) related to DIGIFab administration are worsening congestive heart failure (13%), hypokalemia (13%), and worsening atrial fibrillation (7%).



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