# Recognizing and Resolving Potentially Life-Threatening Digoxin Toxicity



According to the American Heart Association, prompt treatment of cardiac glycoside toxicity is imperative to prevent or treat life-threatening arrhythmias.¹ Any sign or symptom of potentially life-threatening digoxin toxicity may indicate the need for immediate intervention.²,³



#### Cardiac Dysrhythmias<sup>3,4,\*</sup>

- · Severe ventricular dysrhythmias
- Progressive bradydysrhythmias



# **Laboratory Parameters**<sup>2,3</sup>

- Severely elevated serum potassium concentrations with rapidly progressive signs and symptoms
- Severely elevated serum digoxin concentrations with clinically significant signs and symptoms



# Evidence of End-Organ Dysfunction<sup>2</sup>

 Signs and symptoms of end-organ dysfunction from hypoperfusion



Any **ONE** may indicate the need for **IMMEDIATE INTERVENTION**<sup>2,3</sup>

#### **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.

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.

# DIGIFab is THE antidote for potentially life-threatening digoxin toxicity.<sup>2,3</sup>

- DIGIFab neutralizes free digoxin within minutes to resolve the cardiotoxic effects and other clinical manifestations of potentially life-threatening digoxin toxicity.<sup>3,5</sup>
- In a prospective multicenter safety, efficacy, and pharmacokinetics study in patients presenting with life-threatening digoxin toxicity,\* DIGIFab administration resulted in<sup>3</sup>:



Undetectable concentrations of serum digoxin in 100% of patients



Improvement in ECG abnormalities within 4 hours in 67% of patients



Complete resolution of digoxin toxicity within 4 hours in 47% of patients

Complete resolution of digoxin toxicity within 20 hours in 93% of patients

## Appropriate dosing of DIGIFab neutralizes digoxin.3

Dosing varies based on clinical condition. For patients with a known or estimated amount of digoxin in the body, use
the DIGIFab dose calculator at DIGIFab-Dose, health.

\*Results from a study in patients presenting with life-threatening digoxin toxicity (N=15) conducted in the United States and Finland. Results were compared with historical data on Digibind. Patients received doses of DIGIFab based on its theoretical binding capacity for digoxin and based on the known amount of digoxin ingested or on blood concentrations of digoxin at the time of admission.

#### **IMPORTANT SAFETY INFORMATION**

## **Warnings and Precautions**

#### 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%).

References: 1. Panchal AR, Bartos JA, Cabañas, et al. Part 3: Adult Basic and Advanced Life Support. 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2020;142(suppl 2):S366-S468. 2. Levine MD, O'Connor A. Digitalis (cardiac glycoside) poisoning. UpToDate. Updated January 2020. Accessed October 2, 2021. https://www.uptodate.com/contents/digitalis-cardiac-glycoside-poisoning 3. DIGIFab Digoxin Immune Fab (ovine) [package insert]. BTG International Inc.; 2017. 4. Goldberger AL et al. UpToDate. Updated January 2020. Accessed October 2, 2021. https://www.uptodate.com/contents/cardiac-arrhythmias-due-to-digoxin-toxicity 5. Ward SB, Sjostrom L, Ujhelyi MR. Comparison of the pharmacokinetics and in vivo bioaffinity of DigiTAb versus Digibind. Ther Drug Monit. 2000;22(5):599-607.



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