

# CRYSTALLOID: D5W [DEXTROSE 5% IN H<sub>2</sub>O]

<b>DRUG CLASSIFICATION</b>	Carbohydrate / Dextrose Hydrated (50g/L) Sterile / Nonpyrogenic Isotonic Crystalloid Solution (D5W then becomes hypotonic once it enters the body)
<b>MECHANISM OF ACTION</b>	Glucose is rapidly absorbed from the gastrointestinal tract. Peak plasma concentrations of glucose occur about 40 minutes after oral doses in hypoglycemic patients. It is metabolized via pyruvic or lactic acid to carbon dioxide and water with the release of energy. All body cells are capable of oxidizing glucose, and it forms the principal source of energy in cellular metabolism. Dextrose in intravenous fluids undergoes oxidation to carbon dioxide and water, and quickly provides fluid and calories. Cellular uptake of glucose occurs in response to insulin, and glucose is subsequently broken down through glycolysis, lowering blood sugar levels. Glycolysis is the metabolic pathway that converts glucose into pyruvate. The free energy released in this process is used to form the molecules ATP and NADH which are needed for many cellular functions/reactions.
<b>CLINICAL INDICATIONS</b>	<b>[DO NOT USE D5W FOR TREATMENT OF HYPOGLYCEMIA]</b> D5W is only to be used as a mixture component with Amiodarone for creation of certain therapeutic infusion(s).
<b>STANDARD CONTRAINDICATIONS</b>	Known Hypersensitivity to Dextrose, Corn Products, or Other Relative Components Dehydrated Delirium Tremens or Other Signs of Severe Dehydration Known or Suspected Intracranial Hemorrhage
<b>POTENTIAL ADVERSE EFFECTS</b>	Anaphylaxis / Urticaria / Pruritis / Dyspnea / Bronchospasm / Angioedema / Cyanosis / Refeeding Syndrome / Pulmonary Edema / Hyperglycemia / Confusion / Dehydration / Extravasation / Phlebitis / Fever / Abnormal HR / Low BP / Fatigue / Muscle Cramps / Constipation / Hypotension / Hypokalemia / Hypomagnesemia / Reactive Hyperglycemia
<b>GENERAL RISKS &amp; PRECAUTION</b>	<b>1)</b> Use with caution for patients with severe heart disease due to high risk for fluid and solute overload. <b>2)</b> Use with caution in the presence of Type II Diabetes due to lactate being a substrate for gluconeogenesis. <b>3)</b> Use with extreme caution in cases of severe hepatic insufficiency due to risk of impairing lactate metabolism. <b>4)</b> Use with extreme caution for patients with hyperkalemia or similar types predisposing conditions.
<b>PROTOCOL INDEX</b>	Adult Tachycardia Narrow Complex (AC-6) Adult Monomorphic Tachycardia Wide Complex (AC-7) Adult Polymorphic Tachycardia Wide Complex / Torsades de Pointes (AC-8) Pediatric Post-Resuscitation (PC-8) Pediatric Tachycardia Wide Complex (PC-6)

## MEDICATION ADMINISTRATION

### ADULT

### PEDIATRIC

#### Monomorphic Narrow-Complex Tachycardia (QRS ≤ 0.11 seconds)

150 mg Amiodarone / **100 mL of D5W** [IV/IO]; Infuse over 10 minutes using a 10-gtt set (administer 100 gtt/minute).

#### Monomorphic Wide-Complex Tachycardia (QRS ≥ 0.12 seconds)

150 mg Amiodarone / **100 mL of D5W** [IV/IO]; Infuse over 10 minutes using a 10-gtt set (administer 100 gtt/minute).

*May repeat same infusion therapy if wide-complex tachycardia recurs.*

#### Polymorphic Wide-Complex Tachycardia (QTI < 500 ms AND Pulses Present)

150 mg Amiodarone / **100 mL of D5W** [IV/IO]; Infuse over 10 minutes using a 10-gtt set (administer 100 gtt/minute).

*May repeat same infusion therapy if wide-complex tachycardia recurs.*

#### Post-Resuscitation Maintenance (ROSC with Amiodarone AND HR > 60 bpm)

100 mg Amiodarone / **100 mL of D5W** (1 mg / mL) [IV/IO]; Infuse over 10 minutes using a 60-gtt set (administer 1 mg/minute = 60 gtt/minute).

#### Post-Resuscitation Maintenance (ROSC Achieved with Amiodarone)

5 mg / kg Amiodarone in **100 mL of D5W** [IV/IO] using 10-gtt set; Infuse over 10 minutes (administer 100 gtt/minute).

#### **MUST CONSULT MEDICAL CONTROL PRIOR TO ADMINISTRATION:**

#### **Wide Complex Tachycardia (QRS ≥ 0.09 seconds) – See PC-6 Pearls**

5 mg / kg Amiodarone [IV/IO] **mixed with D5W**; infuse over 20 – 60 minutes.

**Please Note:** Rhythm may be SVT with aberrancy. VT is uncommon in children. HR's may vary from normal to > 200/min. Most children with VT have underlying heart disease, cardiac surgery, long QT syndrome, or cardiomyopathy. Consultation with Medical Control is required when this agent is considered.