Management of Supraventricular Tachycardia

**Most supraventricular tachycardias (SVTs) in the neonate are re-entry atrioventricular SVTs via an accessory pathway.**

### Synchronized DC Shock
- Sedate first.
- Select appropriate sized paddles. Sternum paddle at the base of the heart, apex paddle at the apex/axilla.
- Connect to defibrillator ECG leads to the patient and confirm QRS synchronization.
- Give 0.5 joule/kg, then 1 joule/kg if unsuccessful, then 2 joules/kg.

### Initial Management
- Examine for signs of heart failure
- Secure IV line (as proximal as possible with 3 way tap)
- ECG, septic work up, U+E.

### If Stable:
- Try vagotonic manoeuvres – oropharyngeal suction, face immersion in cold water for 5 seconds
- Do not put pressure on eyeballs.

### Adenosine (IV)
- Need continuous ECG
- Dose = 100mcg/kg IV rapidly, follow with 2-5mls rapid 0.9% NaCl flush
- If unsuccessful – Repeat 100mcg/kg
  - Then give 200mcg/kg
  - Then 300mcg/kg
- Wait 2 minutes between doses and monitor vitals.

### If unsuccessful:
- Contact Neonatology Consultant +/- Paediatric Cardiologist
- Administration of IV anti arrhythmics other than adenosine should only be given following this consultation.

### If recurrent, consider Flecainide or Amiodarone in consultation with a cardiologist
- Flecainide – 1-2mg/kg 8-12 hourly pre or post feeds. Check level before 5th dose. Therapeutic range 200-700 mcg/l
- The application of synchronised DC shock is usually undertaken by the cardiologist.

### Differential Diagnosis
- **Sinus Tachycardia** – Rates up to 230 per minute, more variability on ECG.
- **Ventricular Tachycardia** – Wider QRS complex.
- SVTs may initially be asymptomatic.
- Prolonged SVT can result in heart failure and shock.
- Sustained/Paroxysmal SVT may develop in utero and may result in hydrops

SVT is amenable to effective treatment. There is the potential for poor outcome due to left ventricular dysfunction if it remains untreated for a prolonged time.
References:

4. APLS SVT Protocol

This care pathway has been produced by the National Paediatric and Neonatology Clinical Programme. It is aimed at medical, nursing and allied health professionals working in Irish neonatal units.

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<tr>
<th>Algorithm number</th>
<th>Revision number</th>
<th>Document drafted by</th>
<th>Document Status</th>
<th>Date of Last Update</th>
<th>Document approved by</th>
<th>Revision date</th>
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<tbody>
<tr>
<td>N13</td>
<td>1.0</td>
<td>National Paediatric and Neonatology Clinical Programme</td>
<td>Approved</td>
<td>29/8/12</td>
<td>Neonatal Clinical Advisory Group</td>
<td>January 2015</td>
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