Pediatric Tachyarrhythmia With a Pulse Algorithm

Text in cascading boxes describes the actions that providers should perform in sequence when treating pediatric tachyarrhythmia with a pulse. Arrows guide the provider from one box to the next as the provider performs the actions. Some boxes have 2 arrows that lead outward, each to a different pathway depending on the outcome of the most recent action taken. Pathways are hyperlinked.

Box 1

Child with suspected tachyarrhythmia

Box 2

Initial assessment and support

- Maintain patent airway
- Assist breathing with positive-pressure ventilation and oxygen as necessary
- Attach cardiorespiratory monitor
- IV/IO access
- 12-Lead ECG if available

Box 3

Evaluate rhythm.

If rhythm indicates probable sinus tachycardia, proceed to Box 4.
If the rhythm indicates a cardiopulmonary compromise, proceed to Box 6.

Box 4

Probable sinus tachycardia ***if***

- P waves present/normal
- Variable RR interval
- Infant rate usually less than 220 per minute
- Child rate usually less than 180 per minute

Proceed to Box 5.

Box 5

Search for and treat cause.

Box 6

Is there **cardiopulmonary compromise?**

- Acutely altered mental status
- Signs of shock
- Hypotension

If Yes, proceed to Box 7.
If No, proceed to Box 12.

Box 7

Evaluate QRS duration.

If it is narrow (less than or equal to 0.09 seconds), proceed to Box 8.
If it is wide (greater than 0.09 seconds), proceed to Box 10.

Box 8

Probable supraventricular tachycardia

Proceed to Box 9.

Box 9

- If IV/IO access is present, give **adenosine** *or*

- Perform synchronized cardioversion

Box 10
Possible ventricular tachycardia
Proceed to Box 11.

Box 11
Synchronized cardioversion
Expert consultation is advised before additional drug therapies.

Box 12
Evaluate QRS duration.
If it is narrow (less than or equal to 0.09 seconds), proceed to Box 13.
If it is wide (greater than 0.09 seconds), proceed to Box 16.

Box 13
Probable supraventricular tachycardia
Proceed to Box 14.

Box 14
Consider vagal maneuvers.
Proceed to Box 15.

Box 15
Give IV/IO **adenosine**.

Box 16
Possible ventricular tachycardia or supraventricular tachycardia with aberrancy
Proceed to Box 17.

Box 17
If rhythm is **regular** and QRS **monomorphic**, consider **adenosine**.
Proceed to Box 18.

Box 18
Expert consultation is recommended.

Sidebar
Probable Supraventricular Tachycardia
- P waves absent/abnormal
- RR interval not variable
- Infant rate usually greater than or equal to 220 per minute
- Child rate usually greater or equal to 180 per minute
- History of abrupt rate change

Doses and Details
Synchronized cardioversion
Begin with 0.5 to 1 Joules per kilogram; if not effective, increase to 2 Joules per kilogram. Sedate if needed, but don't delay cardioversion.
Adenosine IV/IO dose:
0.1 milligrams per kilogram (maximum of 6 milligrams) rapid push followed by IV flush
Consider repeat dose 0.2 milligrams per kilogram rapid push followed by IV flush; maximum dose of 12 milligrams.