



Optimal Dose Of Adenosine Effective For Treating Supraventricular Tachycardia In Children

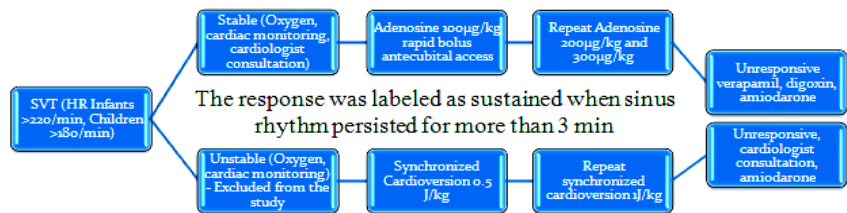


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INTRODUCTION: Supraventricular tachycardia (SVT) is the most common tachyarrhythmia in children. These tachyarrhythmias are poorly tolerated and potentially fatal in children. Adenosine is a purine nucleotide. Initial trials used low doses of adenosine (35 to 75 µg/kg). Higher doses were found more appropriate. APLS recommends 50µg/kg while PALS 100µg/kg as an initial bolus followed by increments of 100µg/kg to a maximum of 300 µg/kg. **Adequate initial dosage is not yet established in children**

OBJECTIVE: To determine the optimal adenosine dose effective in SVT and underlying conditions affecting the optimal dose in children.



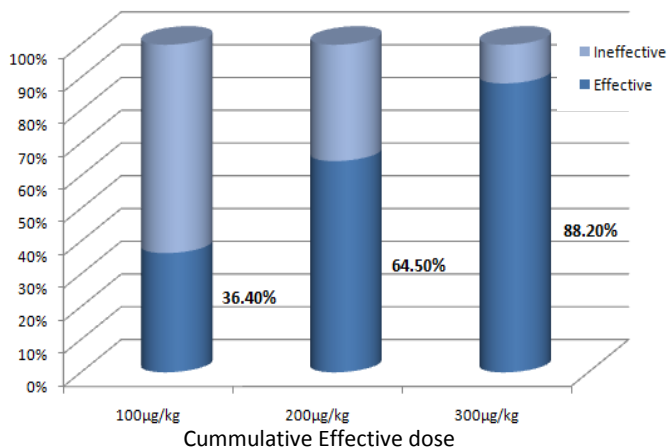
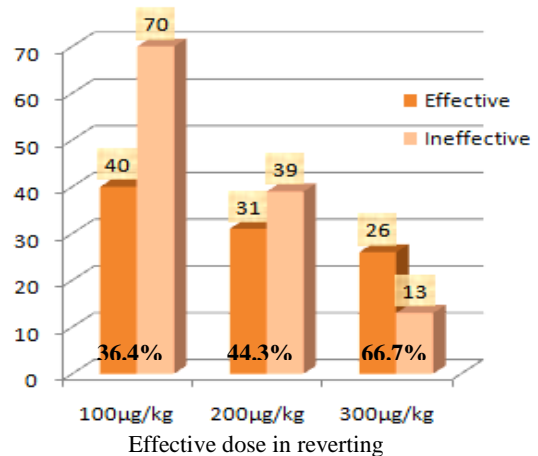
Study protocol:

MATERIALS AND METHODS: All hemodynamically stable children presenting with SVT were included. Rapid boluses were given through antecubital access according to PALS. The response was recorded on 12 lead ECG. Evidence of pre-excitation documented and echocardiography performed once in

RESULTS I: Eighty five patients were treated for 110 episodes of SVT with adenosine (M:F ratio 2.2:1). The mean age ± SD was 27.9 ± 48.1 months.

Adenosine was effective in reverting 97 episodes of SVT to sinus rhythm (88.2%).

Mean ± SD effective dose of adenosine was 185.3µg/kg ± 81.0µg/kg (median effective dose of 200µg/kg).



RESULTS II: Significantly higher dose of adenosine was required in children with **underlying pre-excitation**, n=18/97 (220.8µg/kg±67.6µg/kg vs 177.2µg/kg±81.9µg/kg, p= 0.039). The effective dose was not significantly different in patients with underlying **dilated cardiomyopathy** (p=0.19), **congenital heart disease** (p=0.47) or **recurrences** (p=0.45).

CONCLUSION: Adenosine is an effective drug in treating SVT in children. A **higher dose of 200µg/kg** may be used as **first bolus specially with pre-excitation**