



# Characteristics of Pediatric Emergency Department Patients with Suspected Arrhythmias

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## BACKGROUND

Arrhythmias are common concerns in the pediatric emergency department, yet little is known about how best to evaluate patients with a concern of an arrhythmia and how often an arrhythmia is confirmed when suspected.

We set out to evaluate the nature of pediatric emergency department assessments for possible arrhythmias.

## METHODS

We performed a retrospective chart review of all pediatric patients seen in the AFCH emergency department between May 2011 and December 2020. Inclusion criteria were age 0-17 years, electrocardiogram (ECG) performed as part of evaluation, and clinical suspicion of an arrhythmia on presentation.

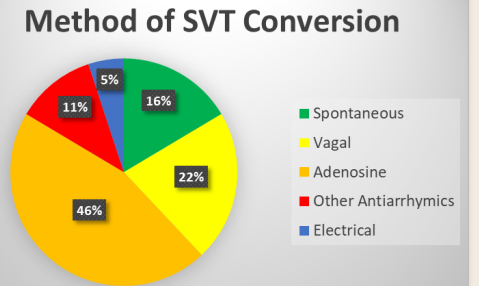
We determined the demographics, presenting concerns, laboratory tests performed, ECG results, and final diagnoses. We also evaluated the management of supraventricular tachycardia (SVT) and the rate of hospital admission.

SVT was the most common documented arrhythmia. Laboratory testing was frequently performed but rarely contributed directly to the diagnosis or management of arrhythmias.

Emergency Department ECG Findings	Patients N (%)	Blood Tests Performed	Abnormal Blood Tests	Clinically Relevant Abnormal Blood Tests
SVT	73 (25.6)	51	32	2*
Other Arrhythmia	66 (23.2)	49	27	0
No Arrhythmia	146 (51.2)	100	30	0
<b>Total</b>	<b>285</b>	<b>200</b>	<b>89</b>	<b>2*</b>

\*Iatrogenic hyperthyroidism, elevated white blood count suggesting infection

## Mechanism of SVT Conversion



## CONCLUSIONS

Arrhythmias were documented in an important number of pediatric emergency department visits when a heart rhythm problem was the primary concern on arrival.

Supraventricular tachycardia was the most commonly identified arrhythmia. Although SVT occasionally resolved spontaneously or with vagal maneuvers, medical intervention was needed in nearly two thirds of the cases

Although frequently performed, blood testing rarely contributed directly to the diagnosis or management of arrhythmias.



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234 Patients

285 ED Visits

Average Age

9.9 years

Any ECG Abnormality

182/285

SVT

73

Atrial Fibrillation

4

Atrial Flutter

1

Ectopic Atrial Tachycardia

1

Ventricular Tachycardia

1

Ventricular Fibrillation

1



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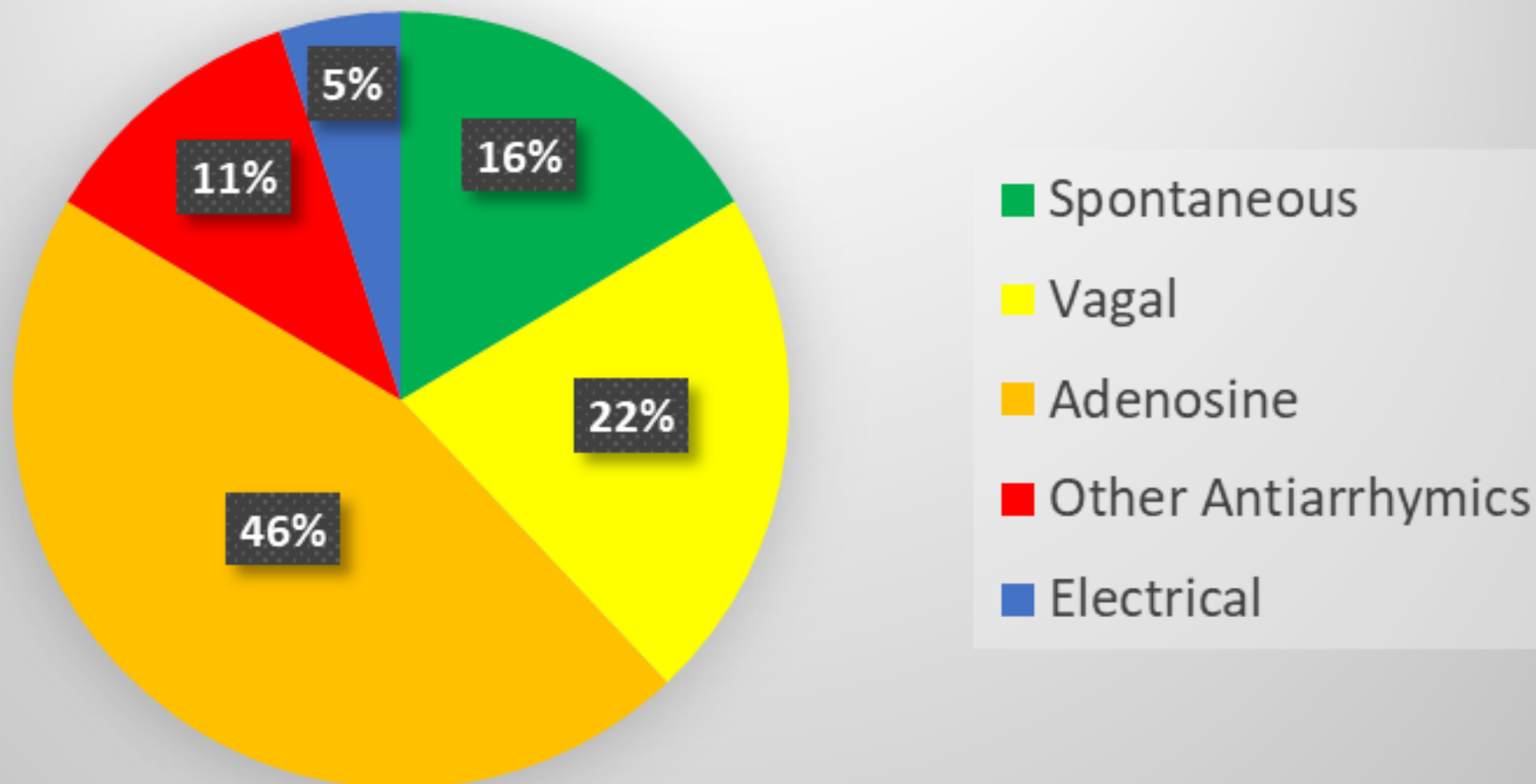
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## Method of SVT Conversion





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## Conclusions

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