

Insert. Pharmacologic Management: SVT

MEDICATION	INDICATIONS	MECHANISM	DOSE	HALF-LIFE	SIDE EFFECTS	CONTRAINDICATIONS	PREGNANCY
Adenosine	All SVT	Slows conduction in the AV node	6 mg, then 12 mg and, if needed, a final 12 mg	10-30 sec	Flushing, asystole, chest pain, dizziness	Sick sinus syndrome; 2nd- and 3rd-degree heart blocks	Category C
Verapamil	All SVT except WPW with atrial fibrillation; patients with preserved LV function	Decrease contraction and impulse conduction by blocking calcium channels	2.5-10 mg (0.075-0.15 mg/kg) as IV bolus over two minutes; may repeat	3-7 hours	Hypotension, bradycardia	Sick sinus syndrome; 2nd- and 3rd-degree heart blocks or wide complex tachycardias; severe LV dysfunction; cardiogenic shock; precaution with liver failure patients and concomitant β -blocker use	Category C
Diltiazem	All SVT except WPW with atrial fibrillation; patients with low EF	Decrease contraction and impulse conduction by blocking calcium channels	Initial dose is 0.25 mg/kg as a bolus over two minutes; usual dose is 20 mg; may repeat; maintenance infusion is 5-15 mg/hr	4-6 hours	Hypotension, bradycardia	Acute MI; pulmonary congestion, sick sinus syndrome, 2nd- and 3rd-degree heart blocks or wide complex tachycardias; precaution with liver failure patients and concomitant β -blocker use	Category C
Esmolol	All SVT	Decreases automaticity and blocks the AV node	500 mcg/kg/min followed by 50-200 mcg/kg/min titrate to heart rate	13 min	Bradycardia; hypotension; bronchospasm	Sinus bradycardia; 2nd- and 3rd-degree heart block or sick sinus syndrome; cardiogenic shock; CHF; precaution with asthmatics, diabetics, and concomitant calcium channel blockers	Category C

Insert. Pharmacologic Management: SVT, continued

MEDICATION	INDICATIONS	MECHANISM	DOSE	HALF-LIFE	SIDE EFFECTS	CONTRAINDICATIONS	PREGNANCY
Amiodarone	Mostly for ventricular tachycardias, but now used for SVT, chemical conversion, and rate control in atrial fibrillation and flutter	Prolongs repolarization and AV nodal conduction; also an alpha- and beta-adrenergic antagonist	Load with 150 mg (15 mg/min) followed by 0.5-1 mg/min	25-60 days	Bradycardia; hypotension; pneumonitis/fibrosis; proarrhythmic ARDS; optic neuropathy; hepatic toxicity; hyperthyroidism; hypothyroidism	Sinus bradycardia; 2nd- and 3rd-degree heart block or sick sinus syndrome	Category D
Ibutilide	Chemical conversion of atrial flutter and fibrillation	Prolongs atrial and ventricular refractory period via Na/K channels	1 mg IV for > 60 kg (0.01 mg/kg for < 60 kg) over 10 minutes; may repeat after 10 minutes	—	Ventricular arrhythmias (torsades de pointes)	Patients with ventricular arrhythmias, baseline QT prolongation, and electrolyte abnormalities	Category C
Procainamide	SVT, atrial fibrillation with WPW, wide complex tachycardias	Decreases automaticity, conduction, refractoriness via blocking sodium channels	20 mg/min with a maintenance infusion of 1-4 mg/min; total dose of 17 mg/kg	3-5 hours	Hypotension; lupus-like syndrome (fever, arthralgias, hepatomegaly, pericarditis); agrandulocytosis; proarrhythmic	Precaution with patients with cardiac and renal dysfunction; caution with patients with impaired LV function, electrolyte disturbances, and MI; caution with patients allergic to "caine" drugs	Category C
Digoxin	Rate control in atrial fibrillation and flutter	Affects the Na/K exchange, resulting in inotropic effect, and decreases conduction in the AV node	Load 10-15 mcg/kg, usual dose 1-1.5 mg over 24 hours, with a maintenance dose of 0.125-0.5 mg/day	36-48 hours	Nausea; vomiting; headache; confusion; ataxia; weakness; visual disturbances; dysrhythmias	Ventricular dysrhythmias; patients with electrolyte abnormalities, especially K ⁺	Category C

Key: SVT—supraventricular tachycardia; WPW—Wolff-Parkinson-White syndrome; LV—Left ventricular; EF—Ejection fraction; AV node—Atrioventricular node; ARDS—Adult respiratory distress syndrome; CHF—Congestive heart failure; MI—Myocardial infarction