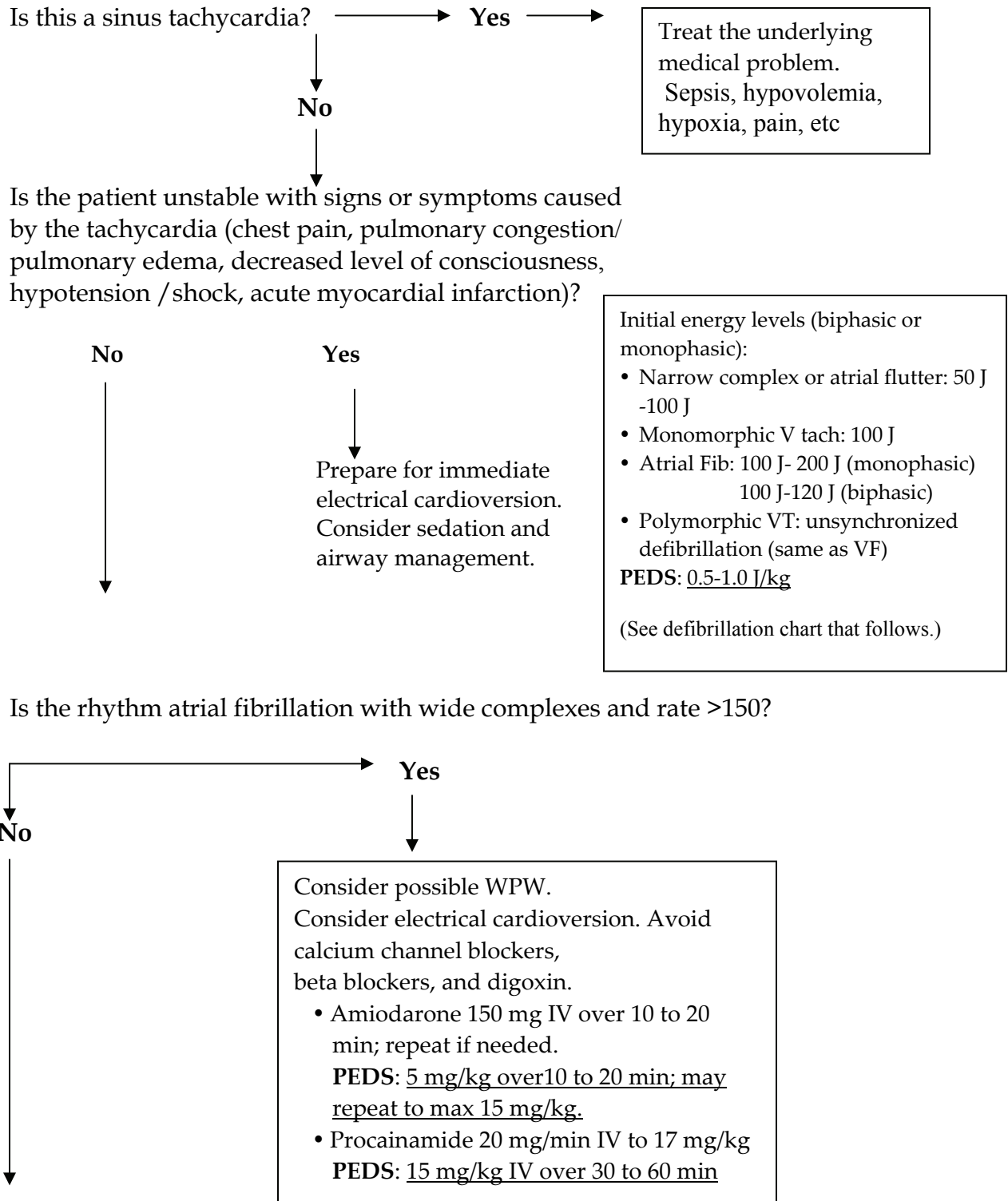
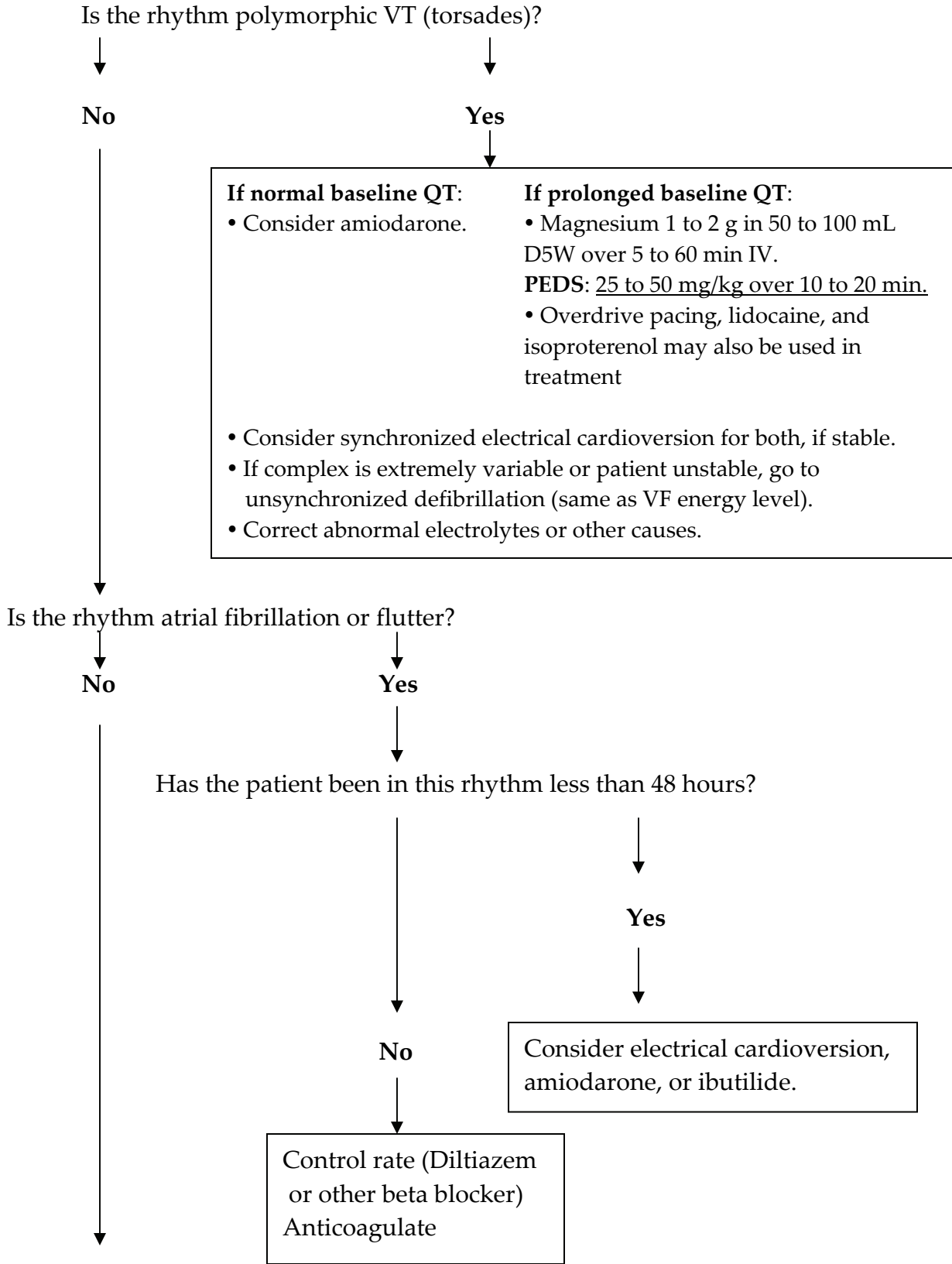


ACUTE CARE 16: TACHYCARDIA OVERVIEW ALGORITHM



TACHYCARDIA OVERVIEW ALGORITHM
ACUTE CARE 16



Is the tachycardia narrow or wide complex?

Regular narrow complex tachycardias	Regular wide complex tachycardias
<p>Vagal (Valsalva) maneuvers If ineffective in converting rhythm: adenosine 6 mg IV rapid push and flush. PEDS: <u>0.1 mg/kg.</u> If ineffective, may double dose and repeat x 2</p> <p>Calcium channel blockers and beta blockers may also be considered.</p> <p>Consider synchronized electrical cardioversion.</p>	<p>Amiodarone 150 mg IV over 10 to 20 min; repeat if needed. PEDS: <u>5 mg/kg over 10 to 20 min;</u> <u>may repeat to 15 mg/kg max</u></p> <p>Procainamide 20 mg/min to 17 mg/kg IV PEDS: <u>15 mg/kg IV over 30 to 60 min</u></p> <p>Lidocaine 1 to 1.5 mg/kg IV push; total loading dose 3 mg/kg PEDS: <u>same</u></p> <p>Consider synchronized electrical cardioversion.</p>

Defibrillator Energy Delivery		
Synchronized		
Rhythm	Monophasic Defibrillator	Biphasic Defibrillator
Atrial fibrillation	100 J - 200 J	100 J - 120 J
Atrial flutter	50 J - 100 J	NA*
PSVT	50 J - 100	NA*
VT-monomorphic (unstable with pulse)	100 J - 360 J	NA*
Unsynchronized		
VT-polymorphic (unstable)	360 J (unsynchronized)	device specific (or 200 J) (unsynchronized)
NA*= insufficient data to recommend energy levels		

TACHYCARDIA OVERVIEW ALGORITHM
ACUTE CARE 16

Paroxysmal Supraventricular Tachycardia (PSVT) Algorithm

Vagal Maneuvers:

- ↓ Carotid Sinus Massage (Don't perform on a patient with a carotid bruit.)
- ↓ Ice Water Immersion (Don't use on a patient with ischemic heart disease.)
- ↓ Valsalva Maneuver

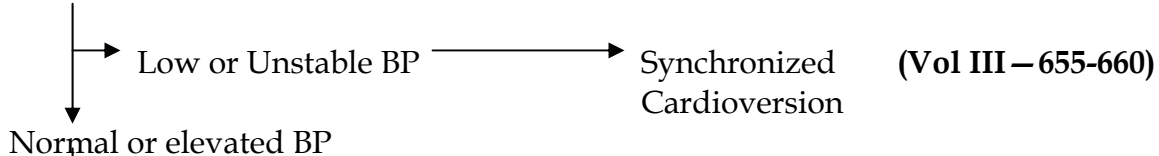
Adenosine: 6 mg rapid IV push over 1 to 3 seconds followed by 20 mL fluid flush
PEDS: 0.1 mg/kg

If fails to convert in 1 to 2 minutes, give:

Adenosine: 12 mg rapid IV push. May repeat the 12 mg dose once after 1 to 2 minutes.
PEDS: 0.2 mg/kg

If rhythm fails to convert or reoccurs, consider other treatments.

Assess Blood Pressure



Calcium Channel Blockers and Beta Blockers:

Verapamil: 2.5 to 5.0 mg IV over 2 minutes. If rhythm does not convert in 15 to 30 minutes, a second dose of 5 to 10 mg IV over 2 minutes may be given. (Do not give to patients with impaired hearts.)

Diltiazem: 15 to 20 mg (0.25 mg/kg) IV over 2 minutes. If rhythm does not convert in 15 minutes, give a 2nd dose of 20 to 25 mg (0.33 mg/kg) IV over 2 minutes.

If hypotension occurs with these agents, place patient in Trendelenburg position or slowly infuse calcium chloride 0.5 to 1.0 g IV.

Digoxin (Lanoxin) or Beta Blockers (Propranolol or Esmolol) may be tried. (Use extreme caution with use of beta blockers after use of calcium channel blockers.)

Synchronized Cardioversion (Vol III – 655-660)

Pharmacological Agents-Atrial Fibrillation-Atrial Flutter

Rate Control

Vagal Maneuvers (carotid sinus massage or Valsalva maneuver) or **Adenosine** (6 to 12 mg IV) temporarily slows the ventricular rate to confirm presence of atrial flutter.

Calcium Channel Blockers

Diltiazem: 0.25 mg/kg IV over 2 minutes. If ventricular rate does not slow in 15 minutes, give 2nd dose of 0.33 mg/kg IV over 2 minutes.

Verapamil: 5 mg IV over 2 minutes. If rate does not slow in 15 to 30 minutes, give 2nd dose of 5 to 10 mg over 2 minutes.

If hypotension occurs with these agents, place patient in Trendelenburg position or slowly infuse calcium chloride 0.5 to 1.0 g IV.

Beta Blockers

Propranolol (Inderal): 0.5 to 1.0 mg/min IV to maximum total dose of 0.1 mg/kg.

Esmolol (Brevibloc): Load with 0.5 mg/kg IV over 1 minute, then infuse 0.05 to 0.2 mg/kg/min IV as needed to slow the ventricular rate.

Metroprolol (Lopressor): 5 mg IV over 2 to 5 minutes. Repeat at 5-minute intervals to a total dose of 15 mg.

Atenolol (Tenormin): 5 mg IV over 5 min. May repeat in 10 min to total dose of 10 mg. (Use extreme caution with use of beta blockers after use of calcium channel blockers.)

Digoxin (Lanoxin): Give 0.25 to 0.5 mg IV followed by 0.125 to 0.25 mg every 2 hours as needed to a maximum total dose of 0.75 to 1.5 mg (10 to 15 µg/kg) in the first 24 hours.

Chemical Cardioversion

Ibutilide (Corvert): (Class III antiarrhythmic agent) Infuse 1 mg IV over 10 minutes. (For patients < 60 kg, use 0.01 mg/kg.) May repeat the 1 mg infusion 10 minutes after completing the first infusion.

Propafenone (Rythmol): (Class Ic antiarrhythmic agent) Initial dose of 150 mg PO every 8 hours; may increase every 3 to 4 days up to 300 mg every 8 hours.

Amiodarone (Cordarone): (Class III antiarrhythmic agent) Load with 800 to 1000 mg per day PO for 1 to 3 weeks, then 400 to 800 mg per day for 2 to 4 weeks, then 100 to 400 mg per day as maintenance.

Sotalol (Betapace): (Class II and III antiarrhythmic agent) Initial dose of 80 mg bid PO; increase to a maximum total daily dose of 320 mg/day.

Flecainide (Class Ic antiarrhythmic agent) Load with 2 mg/kg IV slow infusion at rate up to 10 mg/min. **Must be infused slowly. (IV form not approved in the US)**

Procainamide (Class Ia antiarrhythmic agent) Loading dose of 20 to 30 mg/min IV to max of 17 mg/kg.

TACHYCARDIA OVERVIEW ALGORITHM
ACUTE CARE 16

Anticoagulants

Enoxaparin (Lovenox)

Coumadin

Caution

If any of these agents are used for treatment of patients with atrial fibrillation or atrial flutter, monitor the patient while observing for prolongation of the QT interval. This may indicate that the patient is at risk for developing a serious arrhythmia. If this happens, consider discontinuing the offending drug.