CENTRAL CALIFORNIA
EMERGENCY MEDICAL SERVICES
A Division of the Fresno County Department of Public Health

Manual Emergency Medical Services Administrative Policies and Procedures	Policy Number 530.07
Subject Paramedic Treatment Protocols **VENTRICULAR TACHYCARDIA WITH PULSES**	Page 1 of 2
References Title 22, Division 9, Chapter 4 of the California Code of Regulations	Effective Fresno County: 01/15/82 Kings County: 04/10/89 Madera County: 06/15/85 Tulare County: 04/19/05

STANDING ORDERS

1. Assessment	ABCs
2. Secure Airway	Protect with position, basic airway maneuvers, pharyngeal airway, advanced airway if indicated, assist respirations as needed, suction as needed.
3. Oxygen	15 L per minute per non-rebreathing mask - start at 2 L by cannula if patient has a history of COPD. If intubated, ventilate with bag-valve with 100% oxygen. Refer to EMS Policy #530.02.
4. IV Access	LR TKO – standard tubing (the priority of starting the IVs and cardioversion is the judgment of the paramedic – contact Base Hospital if questions).
5. Reassess	For serious signs and symptoms – patient must demonstrate one or more of the following: acute altered mental status, severe chest pain, severe shortness of breath, systolic BP less than 80, pulmonary edema.

A. Unstable, heart rate **greater than 150 beats/minute** with serious signs or symptoms related to tachycardia.

1. Oxygen	15 L/min. per non-rebreathing mask of 100% via bag-valve-mask.
2. Midazolam	If time allows for the conscious patient, 4 mg slow IV push. May be repeated once if needed. Consider Midazolam 8 mg slow IV push for the large patient (i.e., over 200 pounds).
3. Fentanyl	If time allows for the conscious patient, 25-100 mcg IV push. May be repeated once if needed.
4. Cardiovert	Syncronized at 100 J **or** biphasic equivalent. (Early Base Hospital Contact after first cardioversion if questions), 200 J., 360 J **or** biphasic equivalent. **If conversion** to a stable rhythm, administer Amiodarone 150 mg IV/IO push over 10 minutes. Repeat Amiodarone in 30 minutes if prolonged transport time, 150 mg IV/IO push over 10 minutes. Transport and contact Base.

STANDING ORDERS – CONTINUED ON NEXT PAGE

Approved By **Signatures on File at EMS Agency** EMS Division Manager	Revision **05/01/2014**
Signatures on File at EMS Agency EMS Medical Director	

Subject	Policy
Paramedic Treatment Protocols - Ventricular Tachycardia with Pulses	Number 530.07

STANDING ORDERS (CONTINUED)

5. Reassess	Treat as appropriate for rhythm
6. Amiodarone	150 mg IV push over 10 minutes if patient does not convert.
7. Cardiovert	Synchronized at 360 J or biphasic equivalent. **If conversion** to a stable rhythm, administer Amiodarone 150mg IV push over 10 minutes.
8. Amiodarone	150 mg IV push over 10 minutes if patient does not convert.
9. Cardiovert	Synchronized at 360 J **or** biphasic equivalent.
10. STAT Transport	
11. Contact Hospital	Per EMS Policy #530.02.

B. Stable or Borderline, all others with Ventricular Tachycardia and a pulse

1. Oxygen	Low flow. Refer to EMS Policy #530.02.
2. Transport	
3. Contact Hospital	Per EMS Policy #530.02.

BASE HOSPITAL ORDERS

A. Stable or Borderline, all others with Ventricular Tachycardia and a pulse

1. Amiodarone	150 mg IV push over 10 minutes. If patient does not convert in 30 minutes, re-bolus with Amiodarone 150 mg IV push over 10 minutes.
2. MIDAZOLAM	**4 MG SLOW IV PUSH. MAY BE REPEATED ONCE.**
3. FENTANYL	**25-100 MCG IV PUSH. MAY BE REPEATED ONCE IF NEEDED.**
4. CARDIOVERT	**CONSIDER CARDIOVERSION 200 J., AND IF NO CHANGE, 360 J OR BIPHASIC EQUIVALENT.**

B. Suspected Hyperkalemia

*1. Calcium	1000 mg (10 ml) of 10% $CaCl_2$ IV push.
2. Sodium Bicarbonate	1 mEq/kg bolus, then ½ mEq/kg every 10 minutes.

SPECIAL CONSIDERATION AND PRIORITIES

1. Maximum dose of Amiodarone **never to exceed 300 mg**.
2. In recurrent V-Tach, use the lowest cardioversion energy level that has worked previously on this patient.
3. Allow 60 seconds after medication administration before cardioversion.
4. Consider Calcium in hyperkalemia or calcium channel blocker toxicity.
5. Consider hyperkalemia in dialysis patients, patients with shunts or fistulas, or if history of renal failure. Consider Sodium Bicarb after Calcium.
6. In a tricyclic ingestion, consider Sodium Bicarb.
7. If delays in synchronization occur and clinical conditions are critical, go to immediate unsynchronized shocks.