

Amiodarone for Resuscitation After Out-of-Hospital Cardiac Arrest Due to Ventricular Fibrillation

Kudenchuck PJ, Cobb LA, Copass MK, *et al. NEJM.* 1999. 341(12): 871-878

Objective: To conduct a randomized clinical trial to determine the efficacy of IV amiodarone in patients with out-of-hospital cardiac arrest due to shock-refractory (defined as no ROSC after ≥ 3 precordial shocks) VF or VT

Methods:

- 504 patients; Conducted in Seattle (21 paramedic base stations; 15 hospitals)
- Randomized, double-blinded, placebo-controlled study over 27 months
- Cardiac arrest victims treated by FD (BLS inc AED) until paramedics arrived
- Inclusion Criteria:
 - Adults with non-traumatic out-of-hospital cardiac arrest who had VF or pulseless VT at time of drug administration
 - No ROSC after ≥ 3 precordial shocks
 - IV access established
 - Paramedics on scene with study drug or placebo
- Eligible patients were intubated, given 1mg Epi IV then either 300mg amio or placebo (diluent-polysorbate 80) in identical unlabeled vials
- Primary end point: admission to hospital bed with a spontaneously perfusing rhythm
- Secondary endpoints: adverse effects, # precordial shocks req after amio/placebo, total duration of resuscitation, need for other antiarrhythmics

Results:

- Initial rhythm: 84% VF/VT, 16% asystole/PEA
- Rhythm at time of study-drug admin: 88% VF, 7% VT, 5% not documented
- On average 5 shocks were delivered before study drug administered
- Of 298 pt with ROSC, recipients of amiodarone were significantly more likely to be hypotensive ($p=0.04$), bradycardic ($p=0.004$) on arrival to hospital
- 197 pt (39%) survived to hospital admission
 - Pt receiving amio more likely to be resuscitated and admitted to hospital (44% vs 34%, $p=0.03$); Women benefit more than men ($p=0.008$)
 - 1.6 adjusted OR (95%CI 1.1-2.4; $p=0.02$) for survival to admission in recipients of amio vs placebo
- 67 pt (13%) were discharged from hospital
 - Study not powered to detect differences in survival to discharge

Bottom Line: Compared with placebo, amiodarone significantly and independently improved the rate of survival to hospital admission after shock-refractory cardiac arrest due to VF or pulseless VT. Benefit observed in all major subgroups, regardless of the presenting arrest rhythm, whether or not there was a transient ROSC before tx, and even if amiodarone was administered late in the course of resuscitation