Mastering Pacing, Cardioversion and Defibrillation

Mike McEvoy, PhD, NRP, RN, CCRN
Sr. Staff RN – Cardiovascular Surgical ICU
Albany Medical Center

NTI class code:
EXED223
Pacing, Cardioversion, Defib Indications

Too many to list...

(Patient Must Be Symptomatic and Documented with ECG)

- Too slow
- Too fast
- Too irregular
Unstable VT

Persistent tachyarrhythmia causing:
- Hypotension?
- Acutely altered mental status?
- Signs of shock?
- Ischemic chest discomfort?
- Acute heart failure?

Synchronized cardioversion
- Consider sedation
- If regular narrow complex, consider adenosine

Yes
Cardiovert or Defibrillate?

- Cardioversion is synchronized with...
R on T
Leads? Pads?

- Do you need to place the leads?
- Where’s the best place for the pads?
Synchronized Cardioversion
Now, too slow…

- Pacing pads can be applied any time!
- Better to have them in place before you need them
  - easier to move the patient
Transcutaneous

- Pacing Pads
- Conduct through skin
Transcutaneous

- Set Rate
- Set Output
TCP – Transcutaneous Pacing

- Pads on patient
  - Leads usually needed
- Turn on Pacing
  - Starts @ 0 mA, 80/min
- Increase mA until capture observed
- Confirm mechanical capture (pulse, SpO₂)
Capture

Myocardial Stimulation (Capture)

Atrial and Ventricular Capture

Pacing Pulses (Spike)

Atrial Loss of Capture

Ventricular Loss of Capture
TCP: What Mode?

☐ VOO
☐ VVI
What’s the problem/solution?

Loss of capture – increase mA
Stimulation Threshold

The minimum output needed to consistently capture the heart

100 mA  75 mA  50 mA
Something’s not right here…

- Intrinsic Beat
- Paced Beat
- Fusion Beat
- Pseudofusion Beat
Pause Button

- Drops rate to 25% programmed value
- Won’t STOP pacing (10 ppm minimum)
Really bad - vfib
Rule # 1: Show Up & Shock

Goal for defibrillation:

- Hospital: 3 minutes
- Community: 5 minutes
Albert Einstein

“The definition of insanity is doing the same thing over and over again and expecting different results.”
Rule #2: Think Birthday Cake
Optimal defib field = 90% myocardium
What would Einstein do?

↑ energy

Change pad location
Mike McEvoy

mcevoym@amc.edu
mike@mikemcevoy.com
www.mikemcevoy.com
@mcevoymike
mcevoymike

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