The Faculty of Intensive Care Medicine

Bradycardia – Digoxin Toxicity

Set-up:	
Lines/access:	2 x peripheral 20G cannulas
Infusions:	1L crystalloid at 100ml/hr
Airway:	Own, 4L NC
Ventilator:	Not present
Other:	ECG with high grade AV block Empty bottle by bedside. ABG – K 5.9

Clinical Setting

I: You are the HDU registrar called by the ED FY2 about a patient in resus
S: SHO reports patient is bradycardic, hypotensive and she is worried about a possible drug overdose
B: 64 year old male. BG of Atrial fibrillation, heart failure and depression. Recent bereavement
A: Vomiting and HR of 30, wide complexes, BP 74/51, responsive to voice (E3V4M5)
R: Called for urgent assistance

Potential Clinical Course:

- Initially **A** own **B** SpO_2 92% on 4L, chest crackles bi-basally, RR 28 **C** HR30 bpm high grade AV block, BP 74/51, **D** Responsive to voice
- ED FY2 is alone with an ED nurse. More help on the way - if called for. Empty bottle of digoxin by bedside
- Blood gas K 5.9, IV fluid ongoing
- Atropine has minimal effect. Becomes more drowsy – only responsive to pain
- Asks for transcutaneous pacing
- Whilst setting up pacing patient becomes unresponsive – progresses to Pulseless VT
- After 1 shock – ROSC – Idioventricular rhythm on monitor
- Cardiology Consultant arrives – takes handover and asks opinion about treatment from here

This document has been produced by Dr Melia and approved by the FICM Education Sub-Committee. If you have any queries, please contact FICM via contact@ficm.ac.uk.

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Info Sheet For Faculty:

- Initial settings (visible once monitor attached):
  - SpO_2 92% on 4L (98% on 15L via NRM)
  - RR 28/min
  - HR 30bpm – wide complexes, high grade AV block on monitor
  - BP 74/51
  - GCS E3V4M5

- Progress to: SpO_2 98% on 15L via NRM
  - RR 28/min
  - Increase HR to 36bpm on administration of atropine
  - BP 81/54
  - GCS E2V3M4

- Progress to: SpO_2 88% on 15L via NRM
  - RR 12/min
  - HR 27bpm
  - BP 68/43
  - GCS E1V2M1

- Progress rapidly to:
  - SpO_2 unrecordable
  - RR absent
  - HR 184bpm VT (no palpable pulse)
  - BP unrecordable
  - GCS E1V1M1

- Post ROSC: SpO_2 94% on either BVM/NRM
  - RR 22/min
  - HR 110bpm narrow complex tachycardia
  - BP 94/62
  - GCS E3V3M3

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Faculty Roles

Emergency Medicine FY2:

- First day in resus – keen to help but not sure where anything is, how it is connected, and also unclear on doses of drugs
- Clarifies every instruction
- Enthusiastic and able to do CPR/BVM during cardiac arrest as just done ILS
- Unable to operate defibrillator

ED Nurse:

- Band 7 nurse – follows instructions well when paying attention, able to connect all monitoring and take blood samples and competent member of ALS team
- If asked: Digoxin-specific antibody fragments will have to come from pharmacy and isoprenaline will have to be retrieved from coronary care

Cardiology Consultant:

- You were in ED seeing another patient but heard someone was in resus with a severe bradycardia
- Listens attentively to handover then asks participant what they think should occur next in terms of treatment, interventions, and location