

Questions for April Basics & Beyond Session

Presentation 1: ICD EGM Case Studies & Troubleshooting

1. Which of the following device diagnostics can help you interpret a VT/VF event:
 - a. IEGMs
 - b. Heart rate histogram
 - c. Interval plot
 - d. Channel markers
 - e. All of the above

2. If an ICD diagnostic report lists VT/VF events, you can be sure they are true arrhythmias.
 - a. True
 - b. False

3. Which of the following are possible indications of an RV lead fracture in an ICD (Circle all that apply):
 - a. Noise on the IEGM
 - b. Decreased RV lead impedance
 - c. Changes in R wave measurement
 - d. Atrial oversensing
 - e. All of the above
 - f. Answers a, b & c only

4. List 3 components needed in a systemized clinical approach to ICD IEGM review (Circle all that apply)
 - a. What is the rhythm?
 - b. $V_s > A_s$?
 - c. Are there any programming changes needed?
 - d. In what zone was detection met?
 - e. Is it a true arrhythmia, mechanical failure or electromagnetic interference (EMI)?

5. You find evidence that a patient is having VT at a rate of 120 bpm. There is no need to report this to the following physician since the patient didn't report it.
 - a. True
 - b. False

6. Lead and shock impedances are important but not the same thing.
 - a. True
 - b. False

Presentation 2: CIED Hardware: What do you need to know clinically and for IBHRE review?

1. Ohms Law states:
 - a. Electric current through a conductor between two points is directly proportional to the voltage across the two points
 - b. Electric current through a conductor results in battery early depletion
 - c. Electric current through a conductor is inversely proportional to the voltage across two points
 - d. Electric current is managed better through meditation
2. Most CIEDs contain the following components:
 - a. Circuit board, base board, battery board, communication board
 - b. Circuit board, battery, capacitor, WiFi, shock coil, end pin
 - c. Circuit board, battery, IC chips, capacitor, header, feed-throughs, generator housing, header ports
 - d. Timer, pacemaker, shocker
3. CIED leads and electrodes use _____ for insulation materials, and _____ for conductive materials.
 - a. Plastics and ceramics
 - b. Silicone/polyurethane and MP35-N, Platinum, Iridium
 - c. Polyethylene/propylene glycol and copper/gold alloy
 - d. Teflon and titanium
4. DF-1 and DF4 ICD leads can be used interchangeably
 - a. True
 - b. False
5. Current CIED systems offer the following sensor type:
 - a. Thermal scan sensor, mechanical motion sensor, spatial awareness
 - b. Executive sensor, legislative sensor, judicial sensor
 - c. Accelerometer motion sensor, breathing rate sensor, Myocardial Contractility measure sensor
 - d. Chemical change sensor, physical motion sensor, biological sensor
6. Current CIED systems utilize the following battery chemistries:
 - a. Alkaline, acid, neutral
 - b. Lithium ion AA, AAA, and 9 volt
 - c. Li-MnO₂ or Li-SVO-CFx
 - d. Magnesium and solid state carbon anode

Presentation 3: When is EMI a Clinical Concern for Any CIED?

1. Which of the following is most concerning in terms of EMI effect on pacemakers is the presence of:
 - a. Asymptomatic transient ventricular pacing inhibition
 - b. Presyncope or syncope
 - c. Palpitations
 - d. Secondary pacemaker-mediated tachycardia
2. All but which of the following have been demonstrated to “have the potential” to interfere with device function?
 - a. Industrial welding equipment
 - b. Keyless car openers
 - c. Anti-theft devices (electronic article surveillance equipment)
 - d. Traditional telephone land-line
 - e. Laptop computer