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. Vs > As?
    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, pacer, 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-MnO_2 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