1.5 CARDIAC ARRHYTHMIA

Cardiac arrhythmias are a group of conditions characterized by an abnormal heart rate or rhythm. These are common and affect approximately 5% of the population in the United States. More than 250,000 Americans die each year of sudden cardiac arrest, and most cases are thought to be due to ventricular fibrillation or ventricular tachycardia.[1] Several cardiac arrhythmias can cause instability, prompting hospitalization, or they may result from complications during hospitalization. Annually, more than 740,000 hospital discharges are associated with a primary diagnosis of cardiac arrhythmia.[2] Hospitalists identify and treat all types of arrhythmias, coordinate specialty and primary care resources, and transition patients safely and cost-effectively through the acute hospitalization and into the outpatient setting.

KNOWLEDGE

Hospitalists should be able to:

- Identify and differentiate the common clinical presentations of both benign and pathologic arrhythmias.
- Explain the causes of atrial and ventricular arrhythmias.
- Describe the indicated tests required to evaluate arrhythmias.
- Explain how medications, metabolic abnormalities, and medical comorbidities may precipitate various arrhythmias.
- Explain indications, contraindications, and mechanisms of action of pharmacologic agents used to treat cardiac arrhythmias. Discuss the management options and goals for patients hospitalized with arrhythmias.
- Describe the patient characteristics and comorbid conditions that predict outcomes in patients with arrhythmias.
- Recognize indications for specialty consultation, which may include cardiology and cardiac electrophysiology.
- Explain goals for hospital discharge, including specific measures of clinical stability for safe care transitions.
- Recall appropriate indications for both initiation and discontinuation of continuous telemetry monitoring in the hospitalized patient.

SKILLS

Hospitalists should be able to:

- Elicit a thorough and relevant medical history, including medications, family history, and social history.
- Perform a targeted physical examination with emphasis on identifying signs associated with hemodynamic instability, tissue perfusion, and occult cardiac and vascular disease.
- Identify common benign and pathologic arrhythmias on electrocardiography, rhythm strips, and continuous telemetry monitoring.
- Determine the appropriate level of care required based on risk stratification of patients with cardiac arrhythmias.
- Identify and prioritize high-risk arrhythmias that require urgent intervention and implement emergency protocols as indicated.
- Formulate patient-specific and evidence-based care plans incorporating diagnostic findings, prognosis, and patient characteristics.
- Develop patient-specific care plans that may include rate-controlling interventions, cardioversion, defibrillation, or implantable medical devices.
- Communicate with patients and families to explain the natural history and prognosis of cardiac arrhythmias.
- Communicate with patients and families to explain tests and procedures and their indications and to obtain informed consent.
- Communicate with patients and families to explain drug interactions for antiarrhythmic drugs and the importance of strict adherence to medication regimens and laboratory monitoring.
- Facilitate discharge planning early during hospitalization.
- Communicate with patients and families to explain the goals of care, discharge instructions, and management after hospital discharge to ensure safe follow-up and transitions of care.
- Document the treatment plan and provide clear discharge instructions for postdischarge clinicians.

ATTITUDES

Hospitalists should be able to:

- Employ a multidisciplinary approach, which may include primary care, cardiology, nursing, and social services, in the care of patients with cardiac arrhythmias that begins at admission and continues through all care transitions.
- Follow evidence-based recommendations to guide diagnosis, monitoring, and treatment of cardiac arrhythmias.
- Acknowledge and ameliorate patient discomfort from uncontrolled arrhythmias and electrical cardioversion therapies.

SYSTEM ORGANIZATION AND IMPROVEMENT

To improve efficiency and quality within their organizations, hospitalists should:

- Lead, coordinate, and/or participate in multidisciplinary teams to develop patient care guidelines and/or pathways on the basis of peer-reviewed outcomes research, patient and physician satisfaction, and cost.
- Implement systems to ensure hospital-wide adherence to national standards and document those measures as specified by recognized organizations (eg, The Joint Commission, American Heart Association, American College of Cardiology, Agency for Healthcare Research and Quality).
- Lead, coordinate, and/or participate in quality improvement initiatives to promote early identification of arrhythmias, reduce preventable complications, and promote appropriate use of telemetry resources.

References

1. Mozaffarian D, Benjamin EJ, Go AS, Arnett DK, Blaha MJ, Cushman M, et al; American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2015 update: a report from the American Heart Association. *Circulation*. 2015;131(4):e29-e322.
2. Agency for Healthcare Research and Quality. Healthcare Cost and Utilization Project. U.S. Department of Health & Human Services. Available at: http://hcupnet.ahrq.gov/. Accessed June 2015.