

Nursing Management of Patients with Arrhythmia

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Electrocardiography (ECG) is the recording of the electrical activity generated by the cells of the heart that reaches the body surface. The ECG recording plots voltage on its vertical axis against time on its horizontal axis. This electrical activity initiates the heart's muscular contraction that pumps the blood to the body.

The term "arrhythmia" is very general, referring to all rhythms other than regular sinus rhythm. The term "dysrhythmia" meaning "imperfection in a regularly recurring motion" has been proposed. Dysrhythmia fall into two categories: abnormality of impulse formation and abnormalities of impulse conduction. Abnormal impulse formation results from alteration of automaticity or from triggered activity, while abnormal impulse conduction results from re-entry or ischemia. Abnormal automaticity is the spontaneous depolarization in abnormal myocardial tissues, and triggered activity is a result of afterdepolarization. Afterdepolarization are fluctuations in the membrane potential that occur in late repolarization or just after repolarization. Reentry means that an repeatedly depolarizes the same area of tissue, and cardiac ischemia alters the action potential in several ways.

The presence of dysrhythmia with hemodynamic compromise needs prompt treatment. The treatments for arrhythmia are urgently needed if arrhythmia causes serious symptoms, such as dizziness, chest pain, or fainting and increases risk for heart failure, stroke, or sudden cardiac arrest. Common dysrhythmia treatments include medicines, medical procedures, and surgery.

The 12 leads ECG is the diagnostic reference standard for evaluating cardiac rhythm and cardiac ischemia. The 12 leads ECG utilizes view points for recording cardiac electrical activity: base-apex, left-right, frontal plane, and transverse (horizontal). The 12 leads ECG is more sensitive than a patients self-reporting system (eg. chest pain, chest discomfort) for detecting transient myocardial ischemia or dysrhythmia because 70-90% of the episodes are clinically silent.