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The role of the nurse in the administration of intravenous antiarrhythmic drugs

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Antiarrhythmic drugs are medications used to prevent or treat irregular heart rhythms; they exert a direct effect on the cardiac conduction system. According to the Vaughan-Williams classification, they are divided into four main groups: I. sodium channel blockers, II. beta-adrenergic blockers, III. potassium channel blockers, and IV. calcium channel blockers. Class I is further subdivided into subgroups IA, IB, and IC, depending on the effect on the rate of depolarization and the duration of the action potential. In addition to these groups, medications not covered by the classical Vaughan-Williams classification - such as adenosine and cardiac glycosides (e.g., digoxin) - are also used in the treatment of arrhythmias. The choice of antiarrhythmic drug depends on the type of arrhythmia, the electrophysiological substrate, cardiac function, and the presence of structural heart disease.[1,2]

The administration of intravenous antiarrhythmics requires knowledge of indications, administration methods, and potential complications, as well as the availability of continuous monitoring, ECG capabilities, resuscitation equipment, and a defibrillator. Most intravenous antiarrhythmics are administered via syringe pump or infusion pump over a controlled period, whereas some exceptions are administered rapidly at specific doses and intervals (e.g., adenosine).[2,3] Risks and side effects associated with intravenous antiarrhythmics include hypotension, bradycardia, atrioventricular block, worsening heart failure, and drug interactions. Common errors involve overly rapid administration, phlebitis, inadequate monitoring, and proarrhythmia.[2]

The nurse's role encompasses ensuring proper drug administration, room preparedness, rapid response, monitoring of vital signs and the patient, documentation, securing intravenous access, performing ECGs, setting up monitors, and taking patient histories. Nurses must possess the necessary knowledge and skills to administer the drug and monitor the patient during the process. Administering intravenous medications requires education in pharmacology, cardiology, arrhythmology, nursing, and anatomy, alongside the coordination of skills and patient care.[3,4]

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