

## Chapter 1 : Cardiac Arrhythmia: Symptoms and Treatment

*The title of this book is somewhat misleading in that the contents of the book are actually the proceedings from the First International Rytmonorm Congress. Rytmonorm is the market name for an antiarrhythmic agent known as propafenone.*

**Risk for Decreased Cardiac Output:** At risk for inadequate blood pumped by the heart to meet metabolic demands of the body. Participate in activities that reduce myocardial workload. Nursing Interventions Rationale Palpate pulses radial, carotid, femoral, dorsalis pedis , noting rate, regularity, amplitude full or thready , and symmetry. Document presence of pulsus alternans, bigeminal pulse, or pulse deficit. Differences in equality, rate, and regularity of pulses are indicative of the effect of altered cardiac output on systemic or peripheral circulation. Auscultate heart sounds, noting rate, rhythm, presence of extra heartbeats, dropped beats. Specific dysrhythmias are more clearly detected audibly than by palpation. Hearing extra heartbeats or dropped beats helps identify dysrhythmias in the unmonitored patient. Although not all dysrhythmias are life-threatening, immediate treatment may be required to terminate dysrhythmia in the presence of alterations in cardiac output and tissue perfusion. Although it generally does not require treatment, persistent tachycardia may worsen underlying pathology in patients with ischemic heart disease because of shortened diastolic filling time and increased oxygen demands. These patients may require medications. Sinus bradycardia Bradycardia is common in patients with acute MI especially anterior and inferior and is the result of excessive parasympathetic activity, blocks in conduction to the SA or AV nodes, or loss of automaticity of the heart muscle. Patients with severe heart disease may not be able to compensate for a slow rate by increasing stroke volume. Therefore, decreased cardiac output, HF, and potentially lethal ventricular dysrhythmias may occur. PACs PACs can occur as a response to ischemia and are normally harmless but can precede or precipitate atrial fibrillation. Frequent, multiple, or multifocal PVCs result in diminished cardiac output and may lead to potentially lethal dysrhythmias, e. Intractable ventricular dysrhythmias unresponsive to medication may reflect ventricular aneurysm. Polymorphic VT torsades de pointes is recognized by inconsistent shape of QRS complexes and is often drug related, e. Reflect altered transmission of impulses through normal conduction channels slowed, altered and may be the result of MI, coronary artery disease with reduced blood supply to sinoatrial SA or atrioventricular AV nodes, drug toxicity, and sometimes cardiac surgery. Heart blocks Progressing heart block is associated with slowed ventricular rates, decreased cardiac output, and potentially lethal ventricular arrhythmias or cardiac standstill. Provide quiet and calm environment. Review reasons for limitation of activities during acute phase. Reduces stimulation and release of stress-related catecholamines, which can cause or aggravate dysrhythmias and vasoconstriction, increasing myocardial workload. Demonstrate and encourage use of stress management behaviors,: Promotes patient participation in exerting some sense of control in a stressful situation. Investigate reports of chest pain , documenting location, duration, intensity 0â€”10 scale , and relieving or aggravating factors. Note nonverbal pain cues: Reasons for chest pain are variable and depend on underlying cause. However, chest pain may indicate ischemia due to altered electrical conduction, decreased myocardial perfusion, or increased oxygen need. Be prepared to initiate cardio-pulmonary resuscitation CPR as indicated. Imbalance of electrolytes, such as potassium , magnesium , and calcium , adversely affects cardiac rhythm and contractility. Drug levels Reveal therapeutic or toxic level of prescription medications or street drugs that may affect or contribute to presence of dysrhythmias. Administer supplemental oxygen as indicated. Increases amount of oxygen available for myocardial uptake, which decreases irritability caused by hypoxia. Administer medications as indicated: Dysrhythmias are generally treated symptomatically. Correction of hypokalemia may be sufficient to terminate some ventricular dysrhythmias. Potassium imbalance is the number one cause of atrial fibrillation. Class I drugs Class I drugs depress depolarization and alter repolarization, stabilizing the cell. These drugs are divided into groups a, b, and c, based on their unique effects. These drugs increase action potential , duration, and effective refractory period and decrease membrane responsiveness, prolonging both QRS complex and QT

## DOWNLOAD PDF CARDIAC ARRHYTHMIAS: DIAGNOSIS, PROGNOSIS, THERAPY

interval. Useful for treatment of atrial and ventricular premature beats, repetitive arrhythmias atrial tachycardias and atrial flutter or fibrillation. Myocardial depressant effects may be potentiated when class Ia drugs are used in conjunction with any drugs possessing similar properties. These drugs may aggravate myocardial depression. They suppress and prevent all types of ventricular dysrhythmias. Flecainide increases the risk of drug-induced dysrhythmias post MI. These drugs may exacerbate bradycardia and cause myocardial depression, especially when combined with drugs that have similar properties. They are used to terminate ventricular fibrillation and other life-threatening ventricular dysrhythmias or sustained ventricular tachyarrhythmias, especially when lidocaine and procainamide are not effective. Calan and Cardizem may be used for bedside conversion of acute atrial fibrillation. Cardiac glycosides may be used alone or in combination with other antiarrhythmic drugs to reduce ventricular rate in presence of uncontrolled or poorly tolerated atrial tachycardias or flutter and fibrillation. First-line treatment for paroxysmal supraventricular tachycardia PVST. Adenosine Adenocard Slows conduction and interrupts reentry pathways in AV node. Contraindicated in patients with second- or third-degree heart block or those with sick sinus syndrome who do not have a functioning pacemaker. May be used in atrial fibrillation or certain unstable dysrhythmias to restore normal heart rate and relieve symptoms of heart failure. Assist with insertion and maintenance of pacemaker function. Temporary pacing may be necessary to accelerate impulse formation or override tachydysrhythmias and ectopic activity, to maintain cardiovascular function until spontaneous pacing is restored or permanent pacing is initiated. Insert and maintain IV access. Patent access line may be required for administration of emergency drugs. Prepare for invasive diagnostic procedures and surgery as indicated. Differential diagnosis of underlying cause may be required to formulate appropriate treatment plan. Resection of ventricular aneurysm may be required to correct intractable ventricular dysrhythmias unresponsive to medical therapy. CABG, may be indicated to enhance circulation to myocardium and conduction system. Prepare for implantation of cardioverter or defibrillator ICD when indicated. This device may be surgically implanted in those patients with recurrent, life-threatening ventricular dysrhythmias unresponsive to tailored drug therapy. Back See Also You may also like the following posts and care plans:

## Chapter 2 : Emergency diagnosis and management of pediatric arrhythmias

*Asked to organize an international meeting on Propafenone (RytÅ- monorm) we had to question ourselves, whether to accept this offer just as interested physicians or in our capacity as chairmen of.*

Check new design of our homepage! Symptoms and Treatment Cardiac arrhythmia refers to a medical condition, which is a part of a heterogeneous group of heart-related problems. The condition is characterized by abnormal or irregular electrical activity in the heart. HealthHearty Staff Cardiac Arrhythmia is a medical condition that is the result of increased or greatly reduced heart beats and electrical activity in the heart muscle and cavity. The abnormal heart rhythms or palpitations can cause a lot of anxiety and discomfort. The condition is predisposed towards embolus or a paralytic stroke. While some types of palpitations are minor, some postulate an alarm. Symptoms Irregular heart rhythm does not refer to any one heart problem. The term is commonly used to relate to a large number of conditions that take a toll on heart health. Among the various signs and symptoms, the most common one is the sudden, abnormal development of increased or reduced heartbeat. The resultant palpitations could be frequent, infrequent, or consistent. Although, most of the time it is harmless, it could herald adverse outcomes, if ignored. Though they are not credited with increased mortality when they do not manifest, they do expose the patient to a higher risk of blood clotting and inevitably, a weakened heart. Other fatalities include, stroke, heart attack, and cardiac death. The symptoms include low blood pressure and weakness. Treatment Cardiac arrhythmia is commonly detected through stethoscope auscultation for peripheral pulses or electrocardiogram or ECG. The treatment option is chosen after careful diagnosis of the condition. While some palpitations require no treatment at all, quite a few demand medical emergency treatment to escape a complete heart failure. The common treatment options include: Physical Exercises There are a number of physical exercises that increase parasympathetic nervous supply. The resultant blockage of electrical conduction slows down an arrhythmia. Antiarrhythmic Drugs There are a number of antiarrhythmic medications now available, each with its unique mechanism of action. However, it is very important for this drug to be carefully selected and administered under medical supervision. Anticoagulant medications like, heparin and warfarin help to reduce blood clotting. Electricity This method involves shock therapy via implanted electrodes. The shock is delivered across the heart, either externally or internally. Cardioversion to the underlying heartbeat helps in the treatment of irregular heart beats. In the elective cardioversion, the patient is sedated, while in case of defibrillation via an implantable cardioverter-defibrillator, the recipient is unconscious most of the time and hence, there is no need for sedation. Cardiac pacing is used to induce reversible heartbeats or bradycardia, while a pacemaker addresses bradycardia, when clinically declared irrecoverable. Electrical Cautery This treatment method is conducted with the help of fine probes. The probes are inserted to map electrical activity, through the surrounding blood vessels. Once the abnormal conduction areas are identified, they are treated via heat, cold, laser, or electrical probes. Common arrhythmias are classified according to the recorded rate, which could be either normal, tachycardia, or bradycardia. Another classification criterion is the mechanism, which could be either automaticity, fibrillation, or reentry. This syndrome refers to the sudden death brought on by cardiac arrest, triggered by neglected palpitations. The most common outcome of the condition on record remains coronary artery disease. Today, research reveals that there are a number of inherited heart conditions and diseases that cause sudden death, irrespective of the age.

## Chapter 3 : Cardiac Arrhythmias in the Dog and Cat - Find a Vet Cardiologist Specialist

*Get this from a library! Cardiac Arrhythmias: Diagnosis Prognosis Therapy. [M Schlepper; B Olsson] -- Asked to organize an international meeting on Propafenone (Ryt monorm) we had to question ourselves, whether to accept this offer just as interested physicians or in our capacity as chairmen of the.*

A cardiac arrhythmia is any abnormal heart rate or rhythm. In normal adults, the heart beats regularly at a rate of 60 to times per minute. But this milder contraction occurs just before the ventricles contract, and it is not felt in the pulse. From the sinus node, the heartbeat signal travels to the atrioventricular node or "A-V node," which is located between the atria. The signal enters the muscles of the ventricles. This causes the ventricles to contract and produces a heartbeat. Cardiac arrhythmias sometimes are classified according to their origin as either ventricular arrhythmias originating in the ventricles or supraventricular arrhythmias originating in heart areas above the ventricles, typically the atria. They also can be classified according to their effect on the heart rate, with bradycardia indicating a heart rate of less than 60 beats per minute and tachycardia indicating a heart rate of more than beats per minute. Some common types of cardiac arrhythmias include: Sinus node dysfunction - This usually causes a slow heart rate bradycardia , with a heart rate of 50 beats per minute or less. The most common cause is scar tissue that develops and eventually replaces the sinus node. Why this happens is not known. Sinus node dysfunction also can be caused by coronary artery disease, hypothyroidism, severe liver disease, hypothermia, typhoid fever or other conditions. It also can be the result of vasovagal hypertonia, an unusually active vagus nerve. Supraventricular tachyarrhythmias - This diverse family of cardiac arrhythmias causes rapid heartbeats tachycardias that start in parts of the heart above the ventricles. In most cases, the problem is either an abnormality in the A-V node or an abnormal pathway that bypasses the typical route for heartbeat signals. Atrial fibrillation - This is a supraventricular arrhythmia that causes a rapid and irregular heartbeat, during which the atria quiver or "fibrillate" instead of beating normally. During atrial fibrillation, heartbeat signals begin in many different locations in the atria rather than in the sinus node. Although these abnormal signals manage to trigger to contractions per minute within the atria, the extraordinarily high number of heartbeat signals overwhelms the A-V node. As a result, the A-V node sends sporadic, irregular signals to the ventricles, causing an irregular and usually rapid heartbeat of to beats per minute. But the ventricular rate can be slower. The disordered heartbeat of atrial fibrillation cannot pump blood out of the heart efficiently. This causes blood to pool in the heart chambers and increases the risk of a blood clot forming inside the heart. The major risk factors for atrial fibrillation are age, high blood pressure, heart valve abnormalities, diabetes, and heart failure. A-V block or heart block - In this family of arrhythmias, there is some problem conducting the heartbeat signal from the sinus node to the ventricles. There are three degrees of A-V block: First-degree A-V block, where the signal gets through, but may take longer than normal to travel from the sinus node to the ventricles Second-degree A-V block, in which some heartbeat signals are lost between the atria and ventricles Third-degree A-V block, in which no signals reach the ventricles, so the ventricles beat slowly on their own with no direction from above Some causes of A-V block include cardiomyopathy, coronary artery disease, and medications such as beta blockers and digoxin. Ventricular tachycardia VT - This is an abnormal heart rhythm that begins in either the right or left ventricle. It may last for a few seconds non-sustained VT or for many minutes or even hours sustained VT. Sustained VT is a dangerous rhythm and if it is not treated, it often progresses to ventricular fibrillation. Ventricular fibrillation - In this arrhythmia, the ventricles quiver ineffectively, producing no real heartbeat. The result is unconsciousness, with brain damage and death within minutes. Ventricular fibrillation is a cardiac emergency. Ventricular fibrillation can be caused by a heart attack, an electrical accident, a lightning strike or drowning. Symptoms Symptoms of specific arrhythmias include: Sinus node dysfunction - There may not be any symptoms, or it may cause dizziness, fainting and extreme fatigue. Supraventricular tachyarrhythmias - These can cause palpitations awareness of a rapid heartbeat , low blood pressure and fainting. Atrial fibrillation -

Sometimes, there are no symptoms. This can cause palpitations; fainting; dizziness; weakness; shortness of breath; and angina, which is chest pain caused by a reduced blood supply to the heart muscle. Some people with atrial fibrillation alternate between the irregular heartbeat and long periods of completely normal heartbeats. A-V block or heart block - First-degree A-V block does not cause any symptoms. Second-degree A-V block causes an irregular pulse or slow pulse. Third-degree A-V block can cause a very slow heartbeat, dizziness and fainting. VT - Non-sustained VT may not cause any symptoms or cause a mild fluttering in the chest. Sustained VT usually causes lightheadedness or loss of consciousness and can be lethal. Ventricular fibrillation - This causes absent pulse, unconsciousness and death. Diagnosis Your doctor will ask about your family history of coronary artery disease, cardiac arrhythmias, fainting spells or sudden death from heart problems. Your doctor also will review your personal medical history, including any possible risk factors for cardiac arrhythmias such as coronary artery disease, cardiomyopathy, thyroid disorders, and medications. You will be asked to describe your specific cardiac symptoms, including any possible triggers for those symptoms. During the physical examination, your doctor will check your heart rate and rhythm, together with your pulses. This is because certain cardiac arrhythmias cause a mismatch of the pulse and the heart sounds. Your doctor also will check for physical signs of an enlarged heart and for heart murmurs, one sign of a heart valve problem. A test called an electrocardiogram EKG often can confirm the diagnosis of a cardiac arrhythmia. However, because cardiac arrhythmias may come and go, a one-time office EKG may be normal. If this is the case, an ambulatory EKG may be required. During an ambulatory EKG, the patient wears a portable EKG machine called a Holter monitor, usually for 24 hours, but sometimes much longer. You will be taught to press a button to record the EKG reading whenever you experience symptoms. This approach is especially useful if your symptoms are infrequent. When a patient has ventricular fibrillation, it is an emergency. If available, electrical cardioversion must be administered as soon as possible. If not available, then cardiopulmonary resuscitation CPR should be started. Expected Duration How long a cardiac arrhythmia lasts depends on its cause. For example, atrial fibrillation that is caused by an overactive thyroid may go away when the thyroid problem is treated. However, cardiac arrhythmias that result from progressive or permanent damage to the heart tend to be long-term problems. When a heart attack causes ventricular fibrillation, death can occur within minutes. Prevention Cardiac arrhythmias that result from coronary artery disease can be prevented by taking the following actions to modify your risk factors: Eat a heart healthy diet, including eating an abundance of vegetables and fruits, fish, and plant sources for protein and avoiding saturated and trans fats. Control your cholesterol and high blood pressure. Cardiac arrhythmias related to medications can be minimized by checking with a health care professional or pharmacist about any potential drug interactions. You might have to switch to another medication or reduce the dose of a problem medication. Ventricular fibrillation resulting from electrical shock can be prevented by following routine safety precautions around live wires and by seeking shelter during electrical storms. Not all cardiac arrhythmias can be prevented. Treatment The treatment of a cardiac arrhythmia depends on its cause: Sinus node dysfunction - In people with frequent, severe symptoms, the usual treatment is a permanent pacemaker. Supraventricular tachyarrhythmias - The specific treatment depends on the cause of the arrhythmia. In some people, massaging the carotid sinus in the neck will stop the problem. Other people need medications such as beta-blockers, calcium channel blockers, digoxin Lanoxin and amiodarone Cordarone. Some patients respond only to a procedure called radiofrequency catheter ablation, which destroys an area of tissue in the A-V node to prevent excess electrical impulses from being passed from the atria to the ventricles. Atrial fibrillation - Atrial fibrillation resulting from an overactive thyroid can be treated with medications or surgery. Fibrillation resulting from mitral or aortic valve disease may be treated by replacing damaged heart valves. Medications, such as beta-blockers for example atenolol and metoprolol , amiodarone, diltiazem Cardizem , Tiazac or verapamil Calan, Isoptin, Verelan , can be used to slow the heart rate. Drugs such as amiodarone can be used to reduce the chances that the atrial fibrillation will return. Other treatment options include radiofrequency catheter ablation, or electrical cardioversion, a procedure that delivers a timed electrical shock to the heart to restore normal heart rhythm. A-V block -

## DOWNLOAD PDF CARDIAC ARRHYTHMIAS: DIAGNOSIS, PROGNOSIS, THERAPY

First-degree A-V block typically does not require any treatment. People with second-degree A-V block may be monitored with frequent EKGs, especially if they do not have any symptoms and have a heart rate that is adequate for their daily activities. Some patients with second-degree heart block may require permanent pacemakers. Third-degree A-V block is almost always treated with a permanent pacemaker. VT - Non-sustained VT may not need to be treated if there is no structural damage to the heart. Ventricular fibrillation - This is treated with defibrillation, giving the heart a measured electrical shock to restore normal rhythm. The electrical shock can be delivered on the skin over the heart in an emergency situation. People who have survived ventricular fibrillation and those at high risk are potential candidates for an automatic implantable cardioverter defibrillator. The device is similar to a pacemaker, with wires attached to the heart that connect an energy source placed under the skin. The procedure is done in the operating room. When To Call a Professional Call your doctor if you have any symptoms of a cardiac arrhythmia, including palpitations, dizziness, fainting spells, fatigue, shortness of breath and chest pain. Call for emergency help immediately whenever someone in your family develops a severely irregular pulse. If you cannot feel a pulse at all, and the person is not breathing, perform CPR until emergency professionals arrive. Prognosis The outlook for cardiac arrhythmias depends on the type of rhythm disturbance and whether the person has coronary artery disease, congestive heart failure, or some other heart muscle disorder. The prognosis for ventricular fibrillation is grave, and death follows quickly without emergency treatment. Most atrial arrhythmias have an excellent prognosis.

## Chapter 4 : 3 Cardiac Arrhythmia (Digitalis Toxicity) Nursing Care Plans – Nurseslabs

*An international symposium provided the opportunity to have the "state of the art" in arrhythmias and antiarrhythmic treatment thoroughly reviewed by internationally renowned investigators, thus serving an educational purpose.*

Unclear clinical importance CA: Adapted from Falk et al. Clinical examination and echocardiography show restrictive cardiomyopathy features. Cardiac arrhythmias are common and are an important cause of morbidity and mortality. Diagnosis is based on imaging studies and biopsy. Cardiac magnetic resonance imaging MRI shows increased extracellular volume on T1 imaging, as well as patterns of late gadolinium enhancement in later stages. A high-powered view of a section of an endomyocardial biopsy in a patient with transthyretin amyloidosis stained with sulfated Alcian blue. The green staining is amyloid and the yellow staining is the myocardium. Note the extensive replacement of the myocardium by extracellular amyloid deposits. Regardless of the cause of amyloid production, CA is characterized by extracellular amyloid deposition throughout the heart, including the cardiac conduction tissue and valves. The ventricles are non-dilated and thickened, with restrictive filling. Elevated filling pressures result in atrial dilation despite atrial wall thickening from amyloid deposition. Atrial arrhythmias and loss of atrial mechanical function with atrial thrombus formation are important risk factors for cardioembolic stroke. Myocardial scarring and patchy fibrosis that are typical of chronic ischemic cardiomyopathy or other non-ischemic cardiomyopathies are not described in CA. Hence, the exact mechanism of arrhythmias in CA is less well defined and is likely to be multifactorial. Small vessel disease due to perivascular amyloid infiltration associated with impaired vasodilation is a likely substrate for myocardial ischemia, especially in AL. This increase in troponin may represent myocardial ischemia from small vessel occlusion or direct toxic effects of AL light chains. AL amyloid has been demonstrated to impair myocyte function and calcium release by increasing oxidative stress. Inflammatory cell damage and separation of myocytes by amyloid fibrils would explain conduction abnormalities, atrial arrhythmias, and loss of atrial contractility. In the ventricles, non-sustained ventricular tachycardia VT is the most common form of arrhythmia. Sustained monomorphic VT is uncommon, as most unexpected lethal ventricular arrhythmias are due to polymorphic VT or ventricular fibrillation see later. TTR amyloidosis, especially ATTRwt, has a protracted course with a median survival of 60 months following presentation with heart failure symptoms. Several adverse prognostic indicators have been described, including elevated N-terminal pro-brain natriuretic peptide NT-pro-BNP and troponin levels, diastolic dysfunction on echocardiography, and the extent of extracellular volume and late gadolinium enhancement on MRI. There are few systematic studies of electrophysiological abnormalities and arrhythmias associated with CA and their appropriate management. Most available data are based on case reports or series from single centers. The nature, incidence, and management of arrhythmias differ based on the type of amyloidosis and extent of cardiac involvement. Conduction system disease and the role of cardiac pacing The conduction system is affected in all forms of CA. Atrioventricular AV conduction delay or block is more common than sinus node disease: In some reports, transient sinus node dysfunction occurred in association with autonomic dysfunction occurring spontaneously or during general anesthesia induction. Persistent sinus bradycardia with pauses requiring cardiac pacing was only detected in one patient. First-degree AV block is often due to a delay in the His-Purkinje system level with preserved conduction at the nodal level. First-degree heart block is present with a PR interval of ms. Hematoxylin and eosin staining of the region of the central fibrous body and His bundle in a patient who died of heart failure without a premortem diagnosis of cardiac amyloidosis. The patient had first-degree AV block but no higher grades of AV block. Autopsy showed extensive amyloid infiltration of the myocardium. The yellow circle represents the area of the His bundle. The black arrow points to a small blood vessel with perivascular amyloid infiltration. While cardiac pacing provides symptomatic relief, it does not change the overall prognosis. However, the downside of transvenous pacemakers is the possibility of worsening tricuspid regurgitation due to endocardial leads that cross the valve, impinging on

thickened tricuspid leaflets. The advent of leadless pacemakers might partially mitigate this problem. When the predominant rhythm is sinus, consideration should be given to atrial synchronized ventricular pacing, as maintenance of AV synchrony with atrial synchronized ventricular pacing may be important for maintaining cardiac output in the setting of diastolic dysfunction and preload dependence. A combination of peripheral vasoconstrictors and atrial pacing can be helpful in maintaining an adequate blood pressure in patients with severe autonomic neuropathy and chronotropic incompetence. When ventricular pacing is necessary, there is concern that dyssynchrony from right ventricular RV -only pacing may cause further deterioration of ventricular function. Observations during echocardiography suggest improved cardiac output from biventricular pacing personal communication. However, there are currently no formal studies to support this premise. Given that atrial contractility is often diminished in CA, the loss of atrial contribution is less likely to be the mechanism for deterioration. Although digoxin is known to bind amyloid tissue and increase the risk of toxicity, its use in low doses is usually tolerated, although its role in rate control is limited. Amiodarone provides a good option for AF control and is fairly well tolerated when administered orally. Alternative drugs such as dofetilide can be useful for maintaining sinus rhythm when used cautiously with close monitoring of the QT interval. Anticoagulation is usually well tolerated and should be used for all atrial arrhythmias. If there is evidence for non-contractility of the atria, then there is a case to be made for anticoagulation even in sinus rhythm, as thromboembolism may occur with stasis of blood in the left atrium and appendage. In our series, left atrial voltage mapping revealed significantly lower voltages in amyloid patients compared with an age-matched patient population with persistent AF Figure 4. Despite acute termination and restoration of sinus rhythm with ablation, the recurrence rate is high. Acute chronic renal failure and pulmonary congestion are common in the postprocedural period and may require lengthy hospitalization for correction. LA voltage map comparison. LA voltage map of a patient with AL amyloidosis and atrial tachycardia. LA voltage map of an age-matched patient with persistent AF but without amyloidosis. The purple area represents bipolar voltage greater than 0. The red areas represent voltage below 0. There are far more extensive low-voltage areas in the LA of the patient with AL amyloidosis compared with the control patient. While this finding of low voltage in the LA is not specific to any disease process, an extensive voltage abnormality with relatively normal LA dimensions should raise suspicion for cardiac amyloidosis. When the heart rate is difficult to control, AV nodal ablation with ventricular pacing has the benefits of rate control and rate regularization that improve cardiac output and offer symptomatic improvement. Isolated atrial amyloidosis due to atrial natriuretic peptide depositing as amyloid fibrils is seen in up to one-third of patients with persistent AF undergoing valve surgery and is unrelated to the atrial arrhythmias of generalized CA. Isolated atrial amyloidosis is a disease of the elderly, with a female preponderance. Diuretics tend to aggravate symptoms. Midodrine, an alpha 1 adrenergic stimulant, is often necessary in high doses to maintain blood pressure. The supine hypertension that is common with midodrine use is not seen in CA, so large doses can be employed without concern. Cardiac arrhythmias such as heart block and ventricular arrhythmias are more important causes of syncope and may be a harbinger of sudden death, but careful history taking and examination can often differentiate one from the other. Ambulatory monitoring and EP studies can be helpful, especially for the detection of infra-Hisian AV block. Atrial arrhythmias with rapid ventricular rates can cause a precipitous drop in cardiac output, resulting in syncope. In advanced CA, another mechanism for syncope is vasodilation with an inability to increase cardiac output due to poor contractility reserve. Patients may present with exertional syncope. Prophylactic midodrine prior to planned exercise can be helpful. Ventricular arrhythmias As end-stage heart failure is the major driver of fatality in CA, managing ventricular arrhythmias has assumed a lesser role in overall outcome. AL amyloid, with its more precipitous downward course after heart failure onset, has a higher incidence of ventricular arrhythmia compared with that of ATTR disease. However, there are few systematic studies on the prevalence of ventricular arrhythmias in CA available to date. The incidence of sudden death was no different between those with and without non-sustained VT, implying little prognostic importance regarding the finding of non-sustained VT alone. In a more recent study with implanted loop monitors in 20 patients with AL CA,

non-sustained VT was observed in only one transmission. Monomorphic VT is occasionally inducible during EP study or is noted in patients with an implantable cardioverter-defibrillator ICD , but it is an infrequent event in CA compared with other cardiomyopathies. Sudden death and the role of implantable cardioverter-defibrillators The most frequent documented terminal event in CA is pulseless electrical activity or agonal bradycardia. Arrhythmic sudden death is far more common in AL cardiomyopathy. However, the prognosis of AL amyloidosis with heart failure has historically been dismal, with survival lasting less than 12 months after diagnosis, representing a relative contraindication to ICD implantation. When life expectancy is greater than one year, secondary prevention ICD is a reasonable consideration, following a discussion of the risks and benefits. There is a tendency for a higher defibrillation threshold in patients with CA, but first shock efficacy is generally comparable to that reported in the SCD-Heart Failure Trial study. However, the prediction of risk for arrhythmic sudden death does not follow the available guidelines for other forms of heart disease. An ICD would be a reasonable consideration for unexplained syncope or recurrent episodes of non-sustained VT in the early stages of AL amyloidosis, when the levels of biomarkers such as troponin and NT-pro-BNP are low. Primary prevention ICD may also have a role in patients being considered for cardiac transplantation. Future directions and conclusions A combined multicenter effort to define the cardiac arrhythmias associated with CA is essential to gauge the survival benefits from early antiarrhythmic prophylaxis in CA. The formation of the Amyloid Research Consortium is an encouraging move in this direction [http:](http://) Early pacemaker implantation in patients at high risk for heart block may also serve as arrhythmia monitoring with respect to data gathering. With the high rate of pacemaker implantation in ATTR amyloidosis, a trial of biventricular pacing in patients with heart block is feasible and important to clarify the role of ventricular synchrony in this unique form of cardiomyopathy. In the more malignant AL amyloidosis, the role of ICDs has thus far been assessed largely in the later stages, when severe heart failure negates any benefit from defibrillation. There has been considerable progress in our understanding of amyloidosis pathophysiology and treatment in recent years. Drugs aimed at preventing new amyloid formation achieve very favorable responses in some patients, and formal trial results are awaited. Early diagnosis and management by experts are key to improving outcomes in CA. The disease can no longer be dismissed as a terminal illness with limited therapeutic options. AL light chain cardiac amyloidosis: J Am Coll Cardiol. Diagnosis, prognosis, and therapy of transthyretin amyloidosis.

## Chapter 5 : Heart arrhythmia - Symptoms and causes - Mayo Clinic

*The outlook for cardiac arrhythmias depends on the type of rhythm disturbance and whether the person has coronary artery disease, congestive heart failure, or some other heart muscle disorder. The prognosis for ventricular fibrillation is grave, and death follows quickly without emergency treatment.*

Your heart is made up of four chambers – two upper chambers atria and two lower chambers ventricles. The rhythm of your heart is normally controlled by a natural pacemaker the sinus node located in the right atrium. The sinus node produces electrical impulses that normally start each heartbeat. From the sinus node, electrical impulses travel across the atria, causing the atria muscles to contract and pump blood into the ventricles. The electrical impulses then arrive at a cluster of cells called the atrioventricular node AV node – usually the only pathway for signals to travel from the atria to the ventricles. The AV node slows down the electrical signal before sending it to the ventricles. This slight delay allows the ventricles to fill with blood. When electrical impulses reach the muscles of the ventricles, they contract, causing them to pump blood either to the lungs or to the rest of the body. In a healthy heart, this process usually goes smoothly, resulting in a normal resting heart rate of 60 to 100 beats a minute.

Types of arrhythmias Doctors classify arrhythmias not only by where they originate atria or ventricles but also by the speed of heart rate they cause: This refers to a fast heartbeat – a resting heart rate greater than 100 beats a minute. This refers to a slow heartbeat – a resting heart rate less than 60 beats a minute. Not all tachycardias or bradycardias mean you have heart disease.

**Tachycardias in the atria** Tachycardias originating in the atria include: Atrial fibrillation is a rapid heart rate caused by chaotic electrical impulses in the atria. These signals result in rapid, uncoordinated, weak contractions of the atria. The chaotic electrical signals bombard the AV node, usually resulting in an irregular, rapid rhythm of the ventricles. Atrial fibrillation may lead to serious complications such as stroke. Atrial flutter is similar to atrial fibrillation. The heartbeats in atrial flutter are more-organized and more-rhythmic electrical impulses than in atrial fibrillation. Atrial flutter may also lead to serious complications such as stroke.

**Supraventricular tachycardia** is a broad term that includes many forms of arrhythmia originating above the ventricles supraventricular in the atria or AV node. In Wolff-Parkinson-White syndrome, a type of supraventricular tachycardia, there is an extra electrical pathway between the atria and the ventricles, which is present at birth. This pathway may allow electrical signals to pass between the atria and the ventricles without passing through the AV node, leading to short circuits and rapid heartbeats.

**Tachycardias in the ventricles** Tachycardias occurring in the ventricles include: Ventricular tachycardia is a rapid, regular heart rate that originates with abnormal electrical signals in the ventricles. Ventricular tachycardia can often be a medical emergency. Without prompt medical treatment, ventricular tachycardia may worsen into ventricular fibrillation. Ventricular fibrillation occurs when rapid, chaotic electrical impulses cause the ventricles to quiver ineffectively instead of pumping necessary blood to the body. Most people who experience ventricular fibrillation have an underlying heart disease or have experienced serious trauma, such as being struck by lightning.

**Long QT syndrome** is a heart disorder that carries an increased risk of fast, chaotic heartbeats. The rapid heartbeats, caused by changes in the electrical system of your heart, may lead to fainting, and can be life-threatening. You can be born with a genetic mutation that puts you at risk of long QT syndrome. In addition, several medications may cause long QT syndrome. Some medical conditions, such as congenital heart defects, may also cause long QT syndrome. In addition, certain medications used to treat other conditions, such as high blood pressure, may lower your heart rate.

**Block** can also occur along other pathways to each ventricle. Depending on the location and type of block, the impulses between the upper and lower halves of your heart may be slowed or blocked. If the signal is completely blocked, certain cells in the AV node or ventricles can make a steady, although usually slower, heartbeat. Some blocks may cause no signs or symptoms, and others may cause skipped beats or bradycardia.

**Premature heartbeats** Although it often feels like a skipped heartbeat, a premature heartbeat is actually an extra beat. Even though you may feel an

occasional premature beat, it seldom means you have a more serious problem. Still, a premature beat can trigger a longer lasting arrhythmia – especially in people with heart disease. Premature heartbeats are commonly caused by stress, strenuous exercise or stimulants, such as caffeine or nicotine. Risk factors Certain factors may increase your risk of developing an arrhythmia. Coronary artery disease, other heart problems and previous heart surgery. Narrowed heart arteries, a heart attack, abnormal heart valves, prior heart surgery, heart failure, cardiomyopathy and other heart damage are risk factors for almost any kind of arrhythmia. This increases your risk of developing coronary artery disease. It may also cause the walls of your left ventricle to become stiff and thick, which can change how electrical impulses travel through your heart. Having an overactive or underactive thyroid gland can raise your risk of arrhythmias. Certain over-the-counter cough and cold medicines and certain prescription drugs may contribute to arrhythmia development. Your risk of developing coronary artery disease and high blood pressure greatly increases with uncontrolled diabetes. This disorder, in which your breathing is interrupted during sleep, can increase your risk of bradycardia, atrial fibrillation and other arrhythmias. Substances in your blood called electrolytes – such as potassium, sodium, calcium and magnesium – help trigger and conduct the electrical impulses in your heart. Drinking too much alcohol. Drinking too much alcohol can affect the electrical impulses in your heart and can increase the chance of developing atrial fibrillation. Caffeine or nicotine use. Caffeine, nicotine and other stimulants can cause your heart to beat faster and may contribute to the development of more-serious arrhythmias. Illegal drugs, such as amphetamines and cocaine, may profoundly affect the heart and lead to many types of arrhythmias or to sudden death due to ventricular fibrillation. Complications Certain arrhythmias may increase your risk of developing conditions such as: This can cause blood clots to form. If a clot breaks loose, it can travel from your heart to your brain. There it might block blood flow, causing a stroke. Certain medications, such as blood thinners, can greatly lower your risk of stroke or damage to other organs caused by blood clots. Your doctor will determine if a blood-thinning medication is appropriate for you, depending on your type of arrhythmia and your risk of blood clots. Heart failure can result if your heart is pumping ineffectively for a prolonged period due to a bradycardia or tachycardia, such as atrial fibrillation. A heart-healthy lifestyle may include: Eating a heart-healthy diet.

## Chapter 6 : Arrhythmia | National Heart, Lung, and Blood Institute (NHLBI)

*The American Heart Association explains how to treat an arrhythmia including medications for arrhythmia, monitoring your pulse or heart rate, devices used to treat arrhythmias and the substances to avoid that might cause an arrhythmia.*

Cardiology , Veterinary Specialists Overview In order to pump blood to the lungs and body, the heart must work in a coordinated fashion. The heart has an electrical conduction system that is responsible for controlling the heart rate. There are two nodes masses of tissue present in the heart that play an important role in this conduction system. The other node is called the atrioventricular AV node. Like the SA node, it is a clustered collection of similar cells situated in the bottom of the right atrium, close to the ventricle the chamber that receives blood from the atrium. The AV node receives impulses from the SA node, and after a small delay, directs the impulses to the ventricles. This delay allows for the atrium to eject blood into the ventricle before the ventricular muscles contract. The left cardiac valve is the mitral valve and the right cardiac valve is the tricuspid valve. Arrhythmias are abnormal heart rhythms. Some arrhythmias are normal variants such as the respiratory sinus arrhythmia in dogs. Sinus node disease results in too low of heart rate bradycardia. One of the diseases affecting the sinus node is sick sinus syndrome. Atrial standstill is a condition where normal atrial muscle has been replaced with abnormal tissue and cannot propagate the electrical impulse. This results in bradycardia. English Springer Spaniel is the breed most commonly affected by this disease. Heart block 3rd degree AV block is a type of arrhythmia that results in bradycardia and is due to disease of the AV node impulses cannot pass through the AV node. Ventricular premature complex VPC, aka ventricular premature contraction is a type of irregular heartbeat. An electrical impulse is initiated within the ventricles instead of the SA node, causing the ventricles to contract too early thus the premature in ventricular premature complex. Ventricular tachycardia exhibits a rapid heart rate due to many VPCs firing rapidly. This is often referred to as palpitations. Supraventricular premature complexes arise either from the tissue in the atrium or the tissue surrounding and in the AV node. Supraventricular tachycardia also exhibits a rapid heart rate due to supraventricular premature complexes firing rapidly. Atrial fibrillation Afib is the most common supraventricular tachycardia in dogs and is often the result of an underlying cardiac condition. Causes of cardiac arrhythmia Cardiac causes of arrhythmias include: Heart muscle disease such as dilated cardiomyopathy, hypertrophic cardiomyopathy and arrhythmogenic right ventricular cardiomyopathy , congenital heart defects especially subaortic stenosis , severe valve leakage and enlargement of the cardiac chambers chronic degenerative mitral valve disease , myocarditis inflammation of the heart muscle , trauma to the heart muscle animal being hit by a car , age-related changes, and infiltration of the heart muscle inflammatory cells or cancer cells Non-cardiac causes of arrhythmias include: Gastric dilation and volvulus stomach turns and flips on itself , inflammation of the pancreas, low blood magnesium, severe anemia; diseases of the spleen, liver or GI tract; neurologic disease i. Weakness, collapse, exercise intolerance, fainting, fluid accumulation in the abdomen, in the lungs or around the lungs congestive heart failure , or even sudden cardiac death. However, it is not uncommon for dogs and cats to appear outwardly normal no clinical signs despite having a cardiac arrhythmia. Diagnosis Your family veterinarian will diagnose an arrhythmia when listening to the heart or on an EKG reading. A Holter monitor is an ambulatory EKG the dog can wear it home and the device records the cardiac rhythm over the next hours that determines the frequency how often the arrhythmia occurs and severity of the arrhythmia. Various antiarrhythmic drugs intravenous for life threatening arrhythmias and oral for long term therapy are utilized for supraventricular and ventricular arrhythmias. Certain supraventricular arrhythmias can be treated with radiofrequency ablation while others can be treated with electrocardioversion i. Defibrillation is indicated immediately for life threatening ventricular arrhythmias ventricular fibrillation. Prognosis The prognosis is highly variable depending on what type of arrhythmia is present and if there is a non-cardiac treatable cause versus underlying severe heart disease i. Pacemaker therapy for a slow heart rate 3rd degree AV block and sick sinus syndrome is associated with a

good prognosis in the absence of severe cardiac muscle disease.

# DOWNLOAD PDF CARDIAC ARRHYTHMIAS: DIAGNOSIS, PROGNOSIS, THERAPY

## Chapter 7 : Heart arrhythmia - Diagnosis and treatment - Mayo Clinic

*Arrhythmia is an irregular heartbeat caused by a malfunction in the electrical impulses to the heart. The UPMC Heart and Vascular Institute's Cardiac Electrophysiology Program treats cardiac arrhythmias, as well as other heart disorders associated with a high risk of sudden death. Almost everyone.*

**Sweating Exams and Tests** The health care provider will listen to your heart with a stethoscope and feel your pulse. Your blood pressure may be low or normal or even high as a result of being uncomfortable. An ECG will be the first test done. Heart monitoring devices are often used to identify the rhythm problem, such as a: Holter monitor where you wear a device that records and stores your heart rhythm for 24 hours Event monitor or loop recorder worn for 2 weeks or longer, where you record your heart rhythm when you feel an abnormal rhythm Other long-term monitoring options An echocardiogram is often ordered to examine the size or structure of your heart. Coronary angiography to see how blood flows through the arteries in your heart. **Treatment** When an arrhythmia is serious, you may need urgent treatment to restore a normal rhythm. Electrical "shock" therapy defibrillation or cardioversion Implanting a short-term heart pacemaker Medicines given through a vein or by mouth Sometimes, better treatment for your angina or heart failure will lower your chance of having an arrhythmia. Medicines called anti-arrhythmic drugs may be used: To prevent an arrhythmia from happening again To keep your heart rate from becoming too fast or too slow Some of these medicines can have side effects. Take them as prescribed by your provider. **DO NOT** stop taking the medicine or change the dose without first talking to your provider. Other treatments to prevent or treat abnormal heart rhythms include: Cardiac ablation , used to destroy areas in your heart that may be causing your heart rhythm problems An implantable cardioverter defibrillator , placed in people who are at high risk of sudden cardiac death Permanent pacemaker , a device that senses when your heart is beating irregularly, too slowly, or too fast. It sends a signal to your heart that makes your heart beat at the correct pace. **Outlook Prognosis** The outcome depends on several factors: The kind of arrhythmia you have. Some abnormal heart rhythms may be life threatening if not treated right away, or **DO NOT** respond well to treatment. Whether you have coronary artery disease , heart failure , or valvular heart disease. **When to Contact a Medical Professional** Call your provider if: You develop any of the symptoms of a possible arrhythmia. You have been diagnosed with an arrhythmia and your symptoms worsen or **DO NOT** improve with treatment. **Prevention** Taking steps to prevent coronary artery disease may reduce your chance of developing an arrhythmia.

## Chapter 8 : Arrhythmias: MedlinePlus Medical Encyclopedia

*THE PRESENT AND FUTURE REVIEW TOPIC OF THE WEEK Diagnosis, Prognosis, and Therapy of Transthyretin Amyloidosis* Morie A. Gertz, MD,\* Merrill D. Benson, MD,y Peter J. Dyck, MD,z Martha Grogan, MD,x.

During an arrhythmia, the heart can beat too fast, too slowly, or with an irregular rhythm. When a heart beats too fast, the condition is called tachycardia. When a heart beats too slowly, the condition is called bradycardia. Arrhythmia is caused by changes in heart tissue and activity or in the electrical signals that control your heartbeat. These changes can be caused by damage from disease, injury, or genetics. Often there are no symptoms, but some people feel an irregular heartbeat. You may feel faint or dizzy or have difficulty breathing. Your doctor will run other tests as needed. She or he may recommend medicines, placement of a device that can correct an irregular heartbeat, or surgery to repair nerves that are overstimulating the heart. If arrhythmia is left untreated, the heart may not be able to pump enough blood to the body. This can damage the heart, the brain, or other organs. Explore this Health Topic to learn more about arrhythmia, our role in research and clinical trials to improve health, and where to find more information. Types Arrhythmias differ from normal heartbeats in speed or rhythm. Arrhythmias are also grouped by where they occur—in the upper chambers of the heart, in its lower chambers, or between the chambers. The main types of arrhythmia are bradyarrhythmias; premature, or extra, beats; supraventricular arrhythmias; and ventricular arrhythmias. Arrhythmias known as conduction disorders are covered separately. Bradyarrhythmia Bradyarrhythmia is a slow arrhythmia in a heart that beats too slowly—a condition called bradycardia. For adults, this means slower than 60 beats per minute. Some people, especially people who are young or physically fit, may normally have slow heart rates. For them, bradycardia is not dangerous and does not cause symptoms. Premature or extra heartbeat A premature heartbeat happens when the signal to beat comes early. It can feel like your heart skipped a beat. The premature, or extra, heartbeat creates a short pause, which is followed by a stronger beat when your heart returns to its regular rhythm. These extra heartbeats are the most common type of arrhythmia. They are called ectopic heartbeats and can trigger other arrhythmias. Supraventricular arrhythmias are known by their fast heart rates, or tachycardia. Tachycardia occurs when the heart, at rest, goes above beats per minute. The fast pace is sometimes paired with an uneven heart rhythm. Sometimes the upper and lower chambers beat at different rates. Types of supraventricular arrhythmias include: This is one of the most common types of arrhythmia. The heart can race at more than beats per minute. Atrial flutter can cause the upper chambers to beat to times per minute. The signal that tells the upper chambers to beat may be disrupted when it encounters damaged tissue, such as a scar. The signal may find an alternate path, creating a loop that causes the upper chamber to beat repeatedly. As with atrial fibrillation, some but not all of these signals travel to the lower chambers. As a result, the upper chambers and lower chambers beat at different rates. Paroxysmal supraventricular tachycardia PSVT. In PSVT, electrical signals that begin in the upper chambers and travel to the lower chambers cause extra heartbeats. This arrhythmia begins and ends suddenly. It can happen during vigorous physical activity. It is usually not dangerous and tends to occur in young people. They can be very dangerous and usually require medical care right away. Ventricular tachycardia is a fast, regular beating of the ventricles that may last for only a few seconds or for much longer. A few beats of ventricular tachycardia often do not cause problems. However, episodes that last for more than a few seconds can be dangerous. Ventricular tachycardia can turn into other more serious arrhythmias, such as ventricular fibrillation, or v-fib. Ventricular fibrillation occurs if disorganized electrical signals make the ventricles quiver instead of pumping normally. Without the ventricles pumping blood to the body, sudden cardiac arrest and death can occur within a few minutes. Torsades de pointes is a type of arrhythmia that causes a unique pattern on an EKG and often leads to v-fib. Causes Arrhythmia is caused by changes to heart tissue. It can also occur suddenly as a result of exertion or stress, imbalances in the blood, medicines, or problems with electrical signals in the heart. Typically, an arrhythmia is set off by a trigger, and the irregular heartbeat can continue if

## DOWNLOAD PDF CARDIAC ARRHYTHMIAS: DIAGNOSIS, PROGNOSIS, THERAPY

there is a problem in the heart. Sometimes the cause of an arrhythmia is unknown. Changes to the heart The following conditions may cause arrhythmia: Sometimes these reactions can lead to arrhythmias. If you have heart disease, physical activity can trigger arrhythmia due to an excess of hormones such as adrenaline. Sometimes vomiting or coughing can trigger arrhythmia. Imbalances in the blood An excess or deficiency of electrolytes, hormones, or fluids can alter your heartbeat. An excess of thyroid hormone can cause the heart to beat faster, and thyroid deficiency can slow your heart rate. Dehydration can cause the heart to race. Low blood sugar, from an eating disorder or higher insulin levels in someone who has diabetes, can lead to slow or extra heartbeats. Low levels of potassium, magnesium, or calcium can trigger arrhythmia. These electrolyte disturbances can occur after a heart attack or surgery. Medicines Certain medicines can cause arrhythmia. These include medicines to treat high blood pressure and other conditions, including arrhythmia, depression, and psychosis. Some people also need to be careful about taking certain antibiotics and over-the-counter medicines, such as allergy and cold medicines. Problems with the electrical signals in the heart An arrhythmia can occur if the electrical signals that control the heartbeat are delayed or blocked. This can happen when the nerve cells that produce electrical signals do not work properly or when the electrical signals do not travel normally through the heart. Another part of the heart could start to produce electrical signals, disrupting a normal heartbeat. Disorders of electrical signaling in the heart are called conduction disorders. Want to learn more about why arrhythmias occur? Read more As part of daily living, our hearts change pace to accommodate a wide range of activities, from sleeping to working out. These changes are controlled by the parasympathetic nervous system and the sympathetic nervous system. Overstimulation of either system can cause arrhythmia. The parasympathetic nervous system slows the heart rate and prepares other functions when the body is at rest. It is stimulated by extreme cold or bouts of coughing. Nerve activity slows electrical signals in the heart and extends the time it takes for the heart to relax and fill. Overstimulation of the parasympathetic nervous system can lead to bradycardia. The sympathetic nervous system prepares the body for action, making the heart beat faster and making it easier to breathe. The adrenal glands release the hormone adrenaline that sparks these changes. Overstimulation from intense stress can also cause tachyarrhythmias. Look for Treatment will discuss heart-healthy lifestyle changes that your doctors may recommend if you are diagnosed with arrhythmia. Risk Factors You may have an increased risk of arrhythmia because of your age, environment, family history and genetics, habits in your daily life, certain medical conditions, race or ethnicity, sex, or surgery. Age The chances of having arrhythmia grow as we age, in part because of changes in heart tissue and in how the heart works over time. Older people are also more likely to have health conditions, including heart disease, that raise the risk of arrhythmia. Some types of arrhythmia happen more often in children and young adults, including arrhythmias due to congenital heart defects or inherited conduction disorders. Environment Some research suggests that exposure to air pollutants, especially particulates and gases, is linked to a short-term risk of arrhythmia. Family history and genetics You may have an increased risk of some types of arrhythmia if your parent or other close relative has had arrhythmia, too. Also, some inherited types of heart disease can raise your risk of arrhythmia. With some conduction disorders, gene mutations cause the ion channels that transmit signals through heart cells to work incorrectly or stop working. Lifestyle habits Your risk for arrhythmia may be higher because of certain lifestyle habits, including: Drinking alcohol Using illegal drugs, such as cocaine or amphetamines Other medical conditions Arrhythmias are more common in people who have diseases or conditions that weaken the heart, but many conditions can raise the risk for arrhythmia. Autoimmune disorders, such as rheumatoid arthritis and lupus Diabetes, which increases the risk of high blood pressure and coronary heart disease Diseases of the heart and blood vessels, including a heart that is larger than normal and heart inflammation Eating disorders, such as bulimia and anorexia, which cause electrolyte imbalance and severe malnutrition Heart attack Heart failure, which weakens the heart and changes the way electrical signals move through the heart Heart tissue that is too thick or stiff or that has not formed normally. Arrhythmias can be more common among people who have had surgery to repair a congenital heart defect. Influenza, or flu Kidney disease Heart valves. Leaking or narrowed

## DOWNLOAD PDF CARDIAC ARRHYTHMIAS: DIAGNOSIS, PROGNOSIS, THERAPY

heart valves make the heart work too hard and can lead to heart failure. Low blood sugar Lung diseases, such as chronic obstructive pulmonary disease COPD Musculoskeletal disorders Overactive or underactive thyroid gland, caused by too much or too little thyroid hormone in the body. Sepsis , a toxic immune response to infection Sleep apnea , which can stress the heart by preventing it from getting enough oxygen Race or ethnicity Studies suggest that white Americans may be more likely than African Americans to have some arrhythmias, such as atrial fibrillation, although African Americans have higher rates of high blood pressure and other arrhythmia risk factors.

## Chapter 9 : Arrhythmias in Cardiac Amyloidosis

*Arrhythmia (irregular heartbeat or abnormal heart rhythm) symptoms include palpitations, dizziness, fainting, shortness of breath and chest discomfort. Learn how to recognize the warning signs and treatment of arrhythmia on [theinnatdunvilla.com](http://theinnatdunvilla.com)*

**Print Diagnosis** To diagnose a heart arrhythmia, your doctor will review your symptoms and your medical history and conduct a physical examination. Your doctor may ask about " or test for " conditions that may trigger your arrhythmia, such as heart disease or a problem with your thyroid gland. Your doctor may also perform heart-monitoring tests specific to arrhythmias. During an ECG, sensors electrodes that can detect the electrical activity of your heart are attached to your chest and sometimes to your limbs. An ECG measures the timing and duration of each electrical phase in your heartbeat. For sporadic arrhythmias, you keep this portable ECG device available, attaching it to your body and pressing a button when you have symptoms. This lets your doctor check your heart rhythm at the time of your symptoms. This device detects abnormal heart rhythms and is implanted under the skin in the chest area. Some arrhythmias are triggered or worsened by exercise. Your heart rate and blood pressure are monitored as you lie flat on a table. The table is then tilted as if you were standing up. Your doctor observes how your heart and the nervous system that controls it respond to the change in angle. **Electrophysiological testing and mapping.** In this test, doctors thread thin, flexible tubes catheters tipped with electrodes through your blood vessels to a variety of spots within your heart. Once in place, the electrodes can map the spread of electrical impulses through your heart. In addition, your cardiologist can use the electrodes to stimulate your heart to beat at rates that may trigger " or halt " an arrhythmia. This allows your doctor to see the location of the arrhythmia and what may be causing it. **Treatment** If you have an arrhythmia, treatment may or may not be necessary. One or more electrode-tipped wires run from the pacemaker through your blood vessels to your inner heart. If your heart rate is too slow or if it stops, the pacemaker sends out electrical impulses that stimulate your heart to beat at a steady rate. **Treating fast heartbeats Cardiac catheter ablation** Cardiac catheter ablation In catheter ablation, catheters are threaded through the blood vessels to the inner heart, and electrodes at the catheter tips map the spread of electrical impulses through the heart. For fast heartbeats tachycardias , treatments may include one or more of the following: You may be able to stop an arrhythmia that begins above the lower half of your heart supraventricular tachycardia by using particular maneuvers that include holding your breath and straining, dunking your face in ice water, or coughing. These maneuvers affect the nervous system that controls your heartbeat vagus nerves , often causing your heart rate to slow. For many types of tachycardia, you may be prescribed medication to control your heart rate or restore a normal heart rhythm. If you have atrial fibrillation, your doctor may prescribe blood-thinning medications to help keep dangerous blood clots from forming. If you have a certain type of arrhythmia, such as atrial fibrillation, your doctor may use cardioversion, which can be conducted as a procedure or by using medications. In the procedure, a shock is delivered to your heart through paddles or patches on your chest. The current affects the electrical impulses in your heart and can restore a normal rhythm. In this procedure, your doctor threads one or more catheters through your blood vessels to your heart. **Implantable devices Pacemakers, defibrillator** Pacemakers, defibrillator A dual chamber pacemaker paces the atrium and ventricle. A biventricular pacemaker paces both ventricles. An implantable cardioverter-defibrillator can function as a pacemaker would. In addition, if it detects ventricular tachycardia or fibrillation, it sends out a shock to reset the heart to a normal rhythm. Treatment for heart arrhythmias also may involve use of an implantable device: A pacemaker is an implantable device that helps control abnormal heart rhythms. A small device is placed under the skin near the collarbone in a minor surgical procedure. If you have had sudden cardiac arrest or have certain heart conditions that increase your risk of sudden cardiac arrest, your doctor may also recommend an ICD. One or more electrode-tipped wires from the ICD run through veins to the heart. The ICD continuously monitors your heart rhythm. If it detects an abnormal heart

rhythm, it sends out low- or high-energy shocks to reset the heart to a normal rhythm. Surgical treatments In some cases, surgery may be the recommended treatment for heart arrhythmias: In the maze procedure, a surgeon makes a series of surgical incisions in the heart tissue in the upper half of your heart atria to create a pattern or maze of scar tissue. If you have severe coronary artery disease in addition to arrhythmias, your doctor may perform coronary bypass surgery. This procedure may improve the blood flow to your heart. Request an Appointment at Mayo Clinic Clinical trials Explore Mayo Clinic studies testing new treatments, interventions and tests as a means to prevent, detect, treat or manage this disease. Lifestyle and home remedies Your doctor may suggest that, in addition to other treatments, you make lifestyle changes that will keep your heart as healthy as possible. These lifestyle changes may include: Exercise daily and increase your physical activity. Maintain a healthy weight. Being overweight increases your risk of developing heart disease. Keep blood pressure and cholesterol levels under control. Make lifestyle changes and take medications as prescribed to correct high blood pressure hypertension or high cholesterol. Drink alcohol in moderation. If you choose to drink alcohol, do so in moderation. For healthy adults, that means up to one drink a day for women of all ages and men older than age 65, and up to two drinks a day for men age 65 and younger. Take your medications as prescribed and have regular follow-up appointments with your doctor. Tell your doctor if your symptoms worsen. Alternative medicine Research is ongoing regarding the effectiveness of several forms of complementary and alternative medical therapies for arrhythmia. Some types of complementary and alternative therapies may be helpful to reduce stress, such as: Yoga Meditation Relaxation techniques Some studies have shown that acupuncture may help reduce irregular heart rates in certain arrhythmias, but further research is needed. But it appears as though this substance may be helpful in preventing and treating some arrhythmias. Preparing for your appointment If you think you may have a heart arrhythmia, make an appointment with your family doctor. If a heart arrhythmia is found early, your treatment may be easier and more effective. Eventually, however, you may be referred to a doctor trained in heart conditions cardiologist. If your heart arrhythmia persists for more than a few minutes or is accompanied by fainting, shortness of breath or chest pain, call or your local emergency number or have someone drive you to the nearest emergency room. What you can do Be aware of any pre-appointment restrictions. You may need to do this if your doctor orders any blood tests. Write down key personal information, including a family history of heart disease, stroke, high blood pressure or diabetes, and any major stresses or recent life changes. Take a family member or friend along, if possible. Sometimes it can be difficult to remember all the information provided to you during an appointment. Someone who accompanies you may remember something that you missed or forgot. Write down questions to ask your doctor. Your time with your doctor is limited, so preparing a list of questions will help you make the most of your time together. List your questions from most important to least important in case time runs out. For heart arrhythmias, some basic questions to ask your doctor include: Are there other possible causes for my symptoms? What kinds of tests will I need? Do I need to do anything to prepare for these tests? Are there any foods or drinks that you recommend I avoid? Is there anything you suggest that I add to my diet? How often should I be screened for heart disease or other complications of an arrhythmia? I have other health conditions. How can I best manage these conditions together? Are there any brochures or other printed material that I can take home with me? What websites do you recommend visiting? What to expect from your doctor Your doctor is likely to ask you a number of questions. Being ready to answer them may reserve time to go over any points you want to spend more time on. Your doctor may ask: When did you first begin experiencing symptoms? Have your symptoms been continuous, or do they come and go? How severe are your symptoms? Does anything seem to improve your symptoms? What, if anything, appears to worsen your symptoms? Is there a family history of arrhythmia?