

Atrial Premature Contractions and Tachycardia

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BASIC INFORMATION

Description

The normal heartbeat originates in the small upper chambers of the heart, the atria. When the atria become irritated, irregular, premature beats called *atrial premature contractions* (APCs) may be generated, and the heart may beat faster than usual (tachycardia). Atrial tachycardia (AT) is a sequence of four or more APCs, usually occurring at a fast rate. As the number of abnormal beats increases and the heart rate becomes higher, the heart may not fill and pump blood properly.

Causes

The most common cause is heart disease that results in enlargement of one or both atria. The stretching of the atria causes abnormal beats to occur. These arrhythmias can also arise with other problems in the body, such as bruising of heart muscle after blunt trauma (such as being hit by a car), or liver or kidney failure.

Clinical Signs

No clinical signs occur if only sporadic, infrequent APCs are present. Frequent APCs may lead to an inability to exercise, increased rate and effort of breathing, and coughing. AT can cause weakness and possibly fainting. Fainting due to AT can be hard to tell from seizures.

Diagnostic Tests

An electrocardiogram (ECG) is needed to confirm the presence of APCs or AT. If these abnormal rhythms are not present all the time, continuous ECG monitoring may be recommended. Such monitoring can be done in the hospital or with a 24-hour, continuous Holter monitor or an event monitor that the animal wears at home.

Because APCs and AT are usually associated with heart disease and other systemic problems, additional tests are often recommended. Such tests may include laboratory tests, chest x-rays, an echocardiogram (heart ultrasound), an abdominal ultrasound study, and other tests. Any fluid in the chest or abdomen may be removed and sent for analysis.

TREATMENT AND FOLLOW-UP

Treatment Options

Treatment is initially directed at any heart disease present. If the overall heart rate is close to normal and no signs are present, then the APCs or AT may not be treated. If the heart rate is too fast,

medications (alone or in combinations) are used to slow it down and may include the following:

- Digoxin (a form of digitalis) increases the heart's ability to contract and helps to slow the heart rate. It may be used in combination with other drugs (diltiazem, beta-blockers) to achieve the best control of heart rate. Side effects such as decreased appetite, vomiting, diarrhea, and other arrhythmias often limit its use. Cats do not tolerate digoxin well.
- Diltiazem is a calcium channel blocker commonly used to decrease heart rate in affected animals. It also decreases the heart's ability to contract, so it is not started until heart failure is controlled in dogs. In cats it may be used right away, because their underlying heart disease usually does not affect contraction. Side effects include depression, decreased appetite, worsening of heart failure, constipation (cats), and very slow heart rates.
- Multiple beta-blockers (atenolol, metoprolol, propranolol, carvedilol) are used in dogs, but in cats atenolol is used most commonly. These drugs slow the heart rate and also decrease contractions. Side effects include very slow heart rates, weakness, depression, low blood pressure, and worsening of heart failure.

If other diseases are causing the APCs, then those diseases are usually treated first, and the arrhythmia is monitored with ECGs. If the APCs do not resolve and AT occurs, they are treated as outlined earlier.

Follow-up Care

Once medications are started, ECGs are periodically repeated to monitor heart rate and make adjustments in medications. A Holter monitor may be used to make sure the heart rate stays within an acceptable range during normal activity. If the patient is started on medications, periodic laboratory tests may be recommended to check kidney function and monitor resolution of other diseases. Chest x-rays and echocardiograms may be repeated if heart disease is present.

Prognosis

Prognosis depends on the underlying disease that is causing the APCs or AT. Each disease has its own prognosis, and some are better than others. The more severe atrial arrhythmias are usually indicators of advanced heart disease.