

# Atenolol

**Atenolol** is a member of a class of medications known as *beta blockers*. These agents work by blocking the effects of adrenaline and other similar substances in the body. The result is a decrease in heart rate, contractility of the heart (the strength with which the heart pumps), and blood pressure. Each of these properties can be beneficial under certain circumstances. In addition, beta blockers possess *antiarrhythmic* activity. That is, they are useful in the treatment of certain types of cardiac *arrhythmias*, or abnormalities in the electrical activity of the heart.

Certain kinds of heart disease (examples include aortic stenosis, pulmonic stenosis, and hypertrophic cardiomyopathy) are characterized by abnormal thickening of the muscular walls of the heart. This thickening makes it more difficult for the heart to relax between heartbeats. The problem this creates is that the coronary arteries, which supply blood to the heart, itself, do so during these moments of relaxation between heartbeats. Insufficient time to relax leads to poor blood supply to the muscular heart walls, which can result in scar tissue formation within them. Arrhythmias may occur as a result of this scarring, or due to inadequate delivery of oxygen to the heart muscle.

By slowing the heart rate and decreasing the contractility of the heart, beta blockers such as atenolol allow more time for the heart to relax. This allows more effective blood flow to the heart muscle, itself. In addition, energy requirements of the heart are reduced since it does not contract as often or as strongly, making it a more efficient pump. In some cases, part or all of the reason for use of a beta blocker is the presence of an arrhythmia. Beta blockers are particularly useful for arrhythmias in cats, although they play an important role in some dogs as well. Finally, some causes of hypertension (high blood pressure) are best treated using a beta blocker. One example is hypertension caused by hyperthyroidism (abnormally elevated thyroid hormone levels) in older cats.

Side effects of atenolol may occasionally occur as a result of excessive reduction in heart rate, cardiac contractility, or blood pressure. Symptoms may include loss of appetite, lethargy, weakness, or fainting. Signs of congestive heart failure are unlikely but can occur, and include the above as well as intolerance to exercise, coughing (in dogs), rapid or labored breathing, or abdominal distension.

Atenolol should **never** be discontinued suddenly due to the potential for severe “rebound” increases in heart rate and blood pressure. Any change in its administration should be discussed first with a doctor. If any of the above symptoms are noted, or if you have any questions or concerns, please call your veterinarian or Veterinary Specialty Services immediately to discuss an appropriate plan. Problems that are caught early are more easily corrected and less likely to require a visit to the hospital.