



Animal Specialty Hospital of Florida

Exceptionally skilled. Uniquely compassionate.

Bronchitis and Pneumonia Drugs:

Nick Schroeder DVM DACVIM (cardiology)

Many different types of drugs may be used in dogs and cats suffering from bronchitis and/or pneumonia. Generally four types of drugs are most commonly used, and include antibiotics (antimicrobials), corticosteroids, bronchodilators and antitussives. Depending on the problems, different drugs in different combinations may be prescribed.

ANTIBIOTICS:

Antibiotics (antimicrobials) are drugs that are used in patients suffering from bacterial infections. In patients with lung disease, they are typically used for those with bacterial pneumonia (infection of the lungs) or septic tracheitis/tracheobronchitis (infection of the airways). Some antibiotics are classified as bacteriostatic, which means they inhibit the growth of microorganisms, allowing the body's natural defenses to take over. Some antibiotics are considered bactericidal, which means they are directly toxic to microorganisms. Some antibiotics have a relatively narrow spectrum of activity, which means they may be useful for only certain types of bacterial infections, while others may have broad-spectrum activity, and are effective for many types of bacterial infections. Your veterinarian may recommend a culture/sensitivity to help choose an appropriate antibiotic for a specific infection. Samples of the airway secretions or those obtained from bronchoalveolar lavage may be cultured.

Doxycycline (VIBRAMYCIN®):

This is an antibiotic that belongs to the tetracycline group of drugs. This antibiotic has broad-spectrum protection for a variety of bacterial organisms, including *Mycoplasma* species. It has good tissue penetration, and is useful for many respiratory infections. Side effects may include gastrointestinal upset, and doxycycline is best given with food. It is important that cats receiving doxycycline tablets be syringed water immediately after oral administration to help prevent esophageal problems.

Azithromycin (ZITHROMAX®):

This is an antibiotic that belongs to the class of drugs known as macrolides. This antibiotic has broad-spectrum protection for a variety of bacterial organisms. It has good tissue penetration and is useful for many respiratory infections. Side effects may include gastrointestinal upset.

Amoxicillin (AMOXTABS®):

Amoxicillin/clavulanic acid (CLAVAMOX®):

Amoxicillin and amoxicillin/clavulanic acid are antibiotics that belongs to the penicillin group of drugs. These antibiotics have broad-spectrum protection for a variety of bacterial organisms. It has good tissue penetration and is useful for many respiratory infections. Side effects may include gastrointestinal upset.

Enrofloxacin (BAYTRIL®):

Marbofloxacin (ZENEQUIN®):

Enrofloxacin and marbofloxacin are fluoroquinolone antibiotics. These antibiotics have broad-spectrum protection for a variety of bacterial organisms. They have good tissue penetration and are useful for many respiratory infections. Side effects may include gastrointestinal upset.

CORTICOSTEROIDS:

Corticosteroids are the most potent anti-inflammatory drugs. They are used to treat diseases associated with severe inflammation, and may be used in patients suffering from bronchitis and/or asthma, as well as patients with severe airway collapse (collapsing trachea). Generally, it is advised to use tapering courses, and every effort is made to wean off the drug entirely or at least reach the lowest effective dose. Periodic bloodwork is advised in patients taking corticosteroids on a long-term basis. Patients on high doses for extended periods may become at risk for secondary infections, as corticosteroids can be immunosuppressive. Your veterinarian can help guide appropriate therapy.

Prednisone/Prednisolone:

Prednisone is a corticosteroid used for anti-inflammatory purposes in feline asthma, or for immunosuppression in some illnesses (requiring a higher dose). Side-effects can be increased thirst, increased urination, increased appetite, and panting in dogs. Long-term use should be continued at the lowest effective dose possible due to the risk for steroid overdose. For many asthmatic cats this may be 2.5 mg every other or every third day. Prednisone must be used cautiously in cats with cardiac disease, or cats with chronic cough history that may have an infectious component to their lung disease.

BRONCHODILATORS:

Bronchodilators are drugs used in patients with bronchial (airway) disease, such as bronchitis and asthma. They are occasionally helpful in patients with airway collapse. These drugs help open the airways, which improves symptoms of labored breathing in patients with airway constriction, which may result from chronic inflammation.

Theophylline (THEODUR®):

Aminophylline (PHYLLOCONTIN®):

Theophylline belongs to the class of drugs known as phosphodiesterase inhibitors, which are smooth muscle relaxants. These drugs are airway dilators, opening the bronchial tubes. This results in widening of the tubes and can assist breathing in certain situations. Theophylline has been used as an adjunct treatment in heart failure, asthma, bronchitis, or other chronic lung diseases. It should be used with caution in animals with severe heart disease, abnormal heart rhythms, kidney or liver impairment, or high blood pressure. Theophylline has been shown to cause stomach irritation and nervous system stimulation. Anxiety and restlessness are common side effects of treatment in dogs. Other potential adverse effects include nausea, vomiting, and diarrhea. Seizures can occur if the animal receives a significant overdose. Side effects often resolve once the drug is discontinued.

Terbutaline (BRETHINE®):

A beta -2 agonist, terbutaline functions as a bronchodilator in the cat with feline asthma. It works by relaxing the smooth muscle that lines the respiratory tract and reverses constriction of the lower airways that can occur with inflammatory diseases of the lung. Terbutaline can have a mild side-effect of elevating heart rate and can even be used for heart rate stimulation in the dog at higher doses. Side-effects may also include increased energy level, or rarely, restlessness.

ANTITUSSIVES:

Antitussive medications help control coughing. These drugs typically contain an opioid, and as such, they are often controlled substances. Some over-the-counter formulations are available, and typically include the drug dextromethorphan. The most commonly used prescription antitussives are hydrocodone and butorphanol. Side effects may include sedation and constipation.

Hydrocodone (HYCODAN®, TUSSIGON®, HYDRO-MET®):

Butorphanol (TORBUTROL®):

Certain respiratory conditions in dogs are associated with severe or chronic coughing. These include tracheobronchitis (kennel cough), chronic bronchitis, tracheal collapse and bronchial compression. In many instances, the only effective therapy for these major airway irritations is a cough suppressant or antitussive drug. These drugs suppress the cough reflex within the brain and also can cause sedation. They should not be used in the setting of an active bacterial infection of the lungs since a cough is an essential reflex to rid the lung of infection. Cough suppressants should be avoided in animals with significant heart or lung disease, unless supervised by a veterinarian. The most common adverse effects include sedation and constipation. These are controlled drugs and are available only from a veterinarian with an active DEA license. Hycodan® or Tussigon® contains hydrocodone bitartrate 5mg and homatropine MBr 1.5 mg per

tablet (or per 5 ml). It is important that this drug is **NOT** confused with **hydrocodone/APAP** (VICODIN®), which contains 5 mg of hydrocodone and 500 mg of acetaminophen, which may be potentially toxic to dogs. If you are concerned you may have the incorrect medication, DISCONTINUE it and notify us immediately.