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Asthma in Cats (iCatCare)

Asthma in cats [1]

Cats are often diagnosed as having 'feline asthma'. While being a common condition the actual cause is somewhat uncertain.



Cats can use inhalers to help with breathing problems

The terms 'feline asthma' and 'chronic bronchitis' are often used interchangeably in cats and used to describe chronic disease of the small airways (bronchioles) within the lungs. Other terms describing the same syndrome are 'allergic airway disease' and 'allergic bronchitis'.

In human medicine, chronic bronchitis and asthma are two separate conditions (although some people have both). Asthma is usually an allergic condition where exposure to a trigger causes inflammation and narrowing of the airways. With chronic bronchitis, there is also inflammation of the airways but this is caused mainly by irritation. Exposure to tobacco smoke and other environmental pollutants is the most common cause of chronic bronchitis.

It is assumed that most cats which develop signs of small airway disease have a condition similar to asthma in humans, but the exact cause in most cases remains uncertain.

What happens in asthma or chronic bronchitis

Asthma is a condition where the small airways in the lungs over-react to the presence of a stimulus – an irritant or an allergen. This will provoke an inflammatory response and increase mucus production in the airway (making breathing more difficult), but importantly in asthma the reaction causes contraction of the small muscles around the airways causing them to narrow markedly. This too causes difficulty breathing.

In chronic bronchitis, the underlying problem is irritation from small particles being breathed in from the air. Smoking is the major cause in humans, and the breathing in of smoke, fumes or other irritants causes inflammation of the small airways and stimulates increased production of mucus. It is a combination of the inflammation and mucus production that causes narrowing of the airways and difficulty breathing. There may be some constriction of the muscles around the airway, but this is not a major part of the disease.

What are the clinical signs of cats with asthma or chronic bronchitis?

The clinical signs of asthma or chronic bronchitis vary in severity between individuals. In addition the signs may be either persistent or episodic. Typical signs include:

- Persistent coughing (often bouts of coughing)
- Laboured and/or fast breathing
- Noisy breathing and wheezing
- Difficulty in breathing

These signs are seen in both cases of asthma and chronic bronchitis. In some cats, further signs may develop that are strongly suggestive of asthma – in these cats there is a very sudden onset of severe breathing difficulty and wheezing,, with cats often having great difficulty in catching their breath. This appears to be similar to acute severe asthma in humans (previously termed 'status asthmaticus') and will respond rapidly to therapy with drugs that relax the muscles around the small airways and so dilate them (bronchodilators), making breathing easier. The response to bronchodilators in these cats strongly suggests there is reversible constriction of the airways which a characteristic of asthma.

Which cats develop asthma or chronic bronchitis?

Cats of any age, breed or sex can develop chronic airway disease. Most affected cats are adults, and typically 6–9 years of age, but signs can start in young cats or elderly cats as well. There is also a marked breed predisposition among Siamese and related breeds, strongly suggesting an inherited component to the disease in at least some cats.

How is asthma or chronic bronchitis diagnosed?

Cats with other diseases such as bacterial infections, pneumonia, foreign bodies, heart disease, airway parasites and lung cancer can present with similar clinical signs to asthma or chronic bronchitis so further investigations are usually needed to confirm a diagnosis. These may include:

- Blood tests
- X-rays of the chest to look for typical abnormalities in the lungs
- Bronchoscopy – passing a small endoscope (camera) down into the lungs to look at the small airways
- Airway washes (bronchial or bronchoalveolar lavage) – this is a procedure performed under an anaesthetic that allows cells and fluid from the small airways to be collected and then examined for the presence of inflammatory cells, bacteria, cancer cells and other changes.

Some or all of these investigations may be needed in some cases. These investigations help to rule out other diseases. Some tests such as airway washes, may help to differentiate between asthma and chronic bronchitis but definitive criteria are lacking. Washes are also helpful to look for secondary problems such as lung infections.

How is asthma or chronic bronchitis treated?

Although in theory, if chronic bronchitis and asthma could be reliably distinguished, this may affect how treatment is targeted, in practice, both are currently treated in the same way.

Generally, any secondary infections (with bacteria or mycoplasmas) should be identified and treated, and any predisposing or exacerbating causes identified and removed if possible. This would include:

- Managing any obesity (as this can worsen breathing difficulties)
- Identifying any potential irritants or allergens in the house, for example: pollens, use of perfumes or sprays, use of dusty cat litter, smoking in the house etc.
- In some cats the disease may be seasonal or may occur only when the cat is in certain rooms. In these situations it may be possible to track down an irritant or allergen that triggers the disease with careful investigations

Symptomatic treatment

In most cats, specific trigger factors cannot be identified (or cannot be avoided) and so symptomatic treatment will be required. This is mainly based around anti-inflammatory and bronchodilator therapy:

- **Anti-inflammatory drugs** – these are important in most cases to reduce the inflammatory component of the disease. Corticosteroids (glucocorticoids) such as prednisolone are potent anti-inflammatories that are used to achieve this. Treatment can be administered in different ways:
 - In tablet or liquid form that is given by mouth – usually daily or alternate day therapy is needed, but with long-term therapy often only a low dose will be needed to maintain control of signs
 - By injection – products given by injection may be short-acting (e.g., 1–3 days), or long-acting (some injections may last up to 3–6 weeks)
 - By inhalation – metered-dose inhalers (MDIs) used to treat human asthma that contain steroids (such as beclometasone or fluticasone) can also be used in cats. To administer these to cats a ‘spacer’ device is used (just as in human babies and young children) with a face mask. Many cats actually tolerate this extremely well and treatment can be given once or twice a day this way. The big advantage with this is that the steroid can be delivered directly to the lungs, and absorption into the body can be minimised (to reduce the risk of side effects with long term use).
- **Bronchodilator therapy** – this is the use of drugs that relax the small muscles around the airways and help them to dilate. These are usually used along with corticosteroids (see above). They can also be given in three ways:
 - Tablets or liquid given by mouth – drugs such as terbutaline act as specific bronchodilators in cats and can be valuable. The methylxanthine class of drugs (such as theophylline) are sometimes used in other animals as bronchodilators, but they appear to be less useful and less effective in cats
 - Injections – short-acting injectable bronchodilators are available (including terbutaline) and as these act quickly (especially if given intravenously) they may be useful in emergency situations

- By inhalation – in exactly the same way as human steroid MDIs can be used to treat cats, so too can human bronchodilator MDIs. Inhaled bronchodilators may be rapid in onset but relatively short-lasting (such as salbutamol which may have to be given every few hours), or long-acting such as salmeterol that may need to be given once or twice a day. As with inhaled steroids, the advantage of inhaled bronchodilators is that the drug is delivered directly to the lungs where it is needed.
- **Other drugs** – some other drugs are used on occasions in cats – different types of anti-inflammatory drugs or drugs designed to block an allergic response, but generally their value is uncertain and unproven

How are inhaled drugs administered to cat?

A special 'spacer' has been designed for the delivery of inhalational drugs to cats (see www.aerokat.com [2]). One end of the Aerokat spacer is specially made to allow a human metered-dose inhaler (MDI) to fit and deliver a dose of medication into the chamber (spacer). At the other end a face mask is attached with a valve that allows the cat to breathe in the medication from the chamber. One to two puffs (according to our vets instructions) of the MDI are administered into the chamber and then the face mask is held gently over the cat's face so it can breathe in the medication for 10–15 seconds typically. This is usually performed twice daily. Most cats tolerate the procedure very well and with a little practice it is much easier than administering tablets.

What is the prognosis for feline asthma or chronic bronchitis?

The prognosis for these conditions depends mainly on the severity of the disease. In most cases, appropriate therapy will dramatically improve clinical signs and quality of life for the cat, but life long therapy may be required and acute severe attacks can prove fatal if treatment is not initiated promptly. In some cases there will be ongoing damage to the lungs and this may result in irreversible fibrotic changes within the lungs in some cases, that can eventually prove fatal.

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Author: Kingsbrook Animal Hospital