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Bronchiolitis

Bronchiolitis is an infection of the small airways of the lung (the bronchioles). It is a common condition of babies. Most affected babies are not seriously ill and make a full recovery. Sometimes it becomes more serious and hospital care may be needed.

Understanding the lungs

Air travels into the lungs via the windpipe (trachea), down larger branching airways (bronchi) and into the smaller airways (bronchioles). The bronchioles are the smallest airways before the air enters the millions of tiny air sacs (alveoli) of the lung. Oxygen from the air passes into the bloodstream through the thin walls of the alveoli.



What is bronchiolitis?

Bronchiolitis means inflammation of the bronchioles. It is usually caused by a virus called the respiratory syncytial virus (RSV). Other viruses are sometimes the cause. RSV is a common cause of colds. In some babies RSV can also infect lower down the airways to cause bronchiolitis. RSV is spread in tiny water droplets coughed and sneezed into the air. Infected bronchioles become swollen and full of mucus.

Who gets bronchiolitis?

It is estimated that as many as 1 in 3 babies in the UK under the age of 12 months develop bronchiolitis at some point. It most commonly occurs in babies aged 3-6 months. For most it is not a serious illness. However, about 3 in 100 babies are admitted to hospital with bronchiolitis before they are 1 year old. Babies at higher risk of developing a more serious illness with bronchiolitis include:

- Premature babies.
- Babies with heart conditions.
- Babies who already have a lung condition.

What are the symptoms of bronchiolitis?

Bronchiolitis in the UK usually occurs in the winter months (November to March).

- Cold symptoms: a runny nose, cough and mild high temperature (fever) are usual for the first 2-3 days.
- Fast breathing, difficulty with breathing and wheezing may develop as the infection travels down to the bronchioles. The number of breaths per minute may go as high as 60-80.
- The nostrils may open out (flare) and the cough becomes worse.
- You can often see the muscles between the ribs moving inwards during each breath. This is because the baby needs more effort than normal to breathe.
- The baby may have difficulty feeding and taking drinks. This is because the baby is ill and becomes tired easily. The baby may struggle to breathe and to feed at the same time.

Typically, symptoms peak in severity 2-3 days after starting. The severity of the illness can vary from mild (being a bit worse than a heavy cold) to severe with serious breathing difficulties. After peaking, symptoms then usually gradually ease and go within 1-2 weeks. An irritating cough can linger a bit longer. In some cases the irritating cough may grumble on for several weeks after the other symptoms have gone.

Some children develop wheezy chests and coughs more easily after a bout of bronchiolitis, especially when they have a cough or a cold. This is called post-bronchiolitic syndrome and usually goes away in time. In a minority of cases the wheezy symptoms may develop on and off for several years, particularly with coughs and colds.

What is the treatment for bronchiolitis?

Bronchiolitis is a self-limiting illness. This means it will normally go as the immune system clears the virus. There is no medicine that will kill the virus. Antibiotic medicines do not kill viruses and are not usually prescribed. The aims of treatment include the following:

- To make sure the baby does not become low in body fluids (dehydrated). This may occur if the baby does not feed or drink well.
- To help with breathing if this becomes difficult.
- To be alert for possible complications.

Home treatment

Symptoms do not become severe in most cases. A doctor will check that your baby is not showing signs of dehydration and is able to breathe reasonably well. It is usually a good sign if your baby is drinking and feeding well. Breathing may be easier for your baby if he or she sleeps with the head of the cot slightly raised. Consult a doctor if your baby appears to become worse. In particular:

- If your baby does not feed or drink well.
- If the number of breaths each minute increases.
- If your baby is struggling to breathe.
- If your baby loses a good pink colour and becomes pale or blue.

Hospital treatment

About 3 in 100 babies with bronchiolitis are admitted to hospital. For most it is a short stay until they are over the worst of it. The main reason for hospital admission is concern over poor drinking or feeding. In hospital a baby can be fed by a tube passed into the stomach if necessary. Extra oxygen may be given if breathing is difficult. About 2 in 100 babies admitted to hospital with bronchiolitis need help with breathing for a while (assisted ventilation) until the infection goes.

Some babies become seriously ill, or develop pneumonia as a complication. Intensive care is needed in a small number of cases.

Many types of treatments have been tried over the years. Unfortunately, research has shown that none of them makes a big difference to the course of the illness. That is why treatment is supportive, whilst the child's immune system kills the virus.

Can bronchiolitis be prevented?

Not usually

RSV infection, commonly responsible for bronchiolitis, causes many coughs and colds in adults and children. It is impossible to avoid it totally. It may be sensible to keep young babies away from people with coughs and colds. However, this is often not possible. There is a vaccine available but it is only administered to babies and children with severe chest or heart conditions or problems with their immune system.

Breast-feeding and not smoking may be protective

Babies with bronchiolitis who have been breast-fed and those who live in a smoke-free home, tend to get a less severe bout of the illness. This is compared to non-breast-fed babies and those who live with smokers. This is because 'passive smoking' by a baby affects the lining of the airways, causing less resistance to infection. Also, breast-fed babies receive antibodies that are transferred from their mother which may be protective.

Antibody injections

Monthly antibody injections from birth may help to limit the severity of bronchiolitis if it should occur. This may be considered for babies who are very premature, or who have severe chest or heart conditions. The aim is to limit the severity of bronchiolitis if it occurs.

Further reading & references

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