



Steroids in BPD

Steroids are medications that can be helpful with many medical conditions, including reducing swelling of different kinds. Some examples of steroids are hydrocortisone cream to help with itchy skin, and an inhaler to treat asthma. Many mothers receive an injection of steroids prior to delivering their baby prematurely which helps improve baby's lung maturity and function. In this chapter, we will discuss how steroids may help preterm babies who already have BPD, or who have a high chance of developing it.

Since inflammation is a big part of BPD, steroids can be used to reduce swelling and decrease inflammation. While inflammation is the body's natural way to react to stress, it can also lead to damage in the body. Steroids can help the tissue heal by decreasing inflammation, and sometimes even prevent further injury. So, it's not surprising that they can help babies avoid BPD or help heal from lung injury. Of note, steroids are sometimes used to treat low blood pressure, electrolyte problems, and low blood sugars, and some babies receive this medication for problems unrelated to BPD.

Giving steroids early

Research shows clear benefit of steroids given to babies less than 30 weeks' gestation in preventing BPD. Unfortunately, steroids can have some important short- and long-term side effects, especially at high doses and when given early in life (before 7-14 days of life). Some of these serious side effects are:

- Injury to the intestine
- Higher blood glucose levels
- Higher chances to get an infection
- Decreased bone health
- High blood pressure
- Decreased growth

Research shows that infants who received early, higher dose steroids had a greater rate of cerebral palsy in early childhood compared with those who did not receive steroids.

Given these possible short-term and long-term side effects, we carefully limit steroid medications for preterm infants in the first two weeks of life.



Giving steroids later

What about giving steroids to babies later in life, after 14 days of age? Some research shows that later steroids are likely to improve survival and even survival without cerebral palsy. However, the best dosing, time, and type of steroids to give remain a question.



What we know

- Babies who might benefit from a course of steroids to improve lung function are already at high risk of having severe BPD.
 - This places them at risk of needing home oxygen or other advanced breathing support in order to survive.
 - They also have a higher risk of cerebral palsy and developmental problems.
- There is some evidence that receiving steroids may slightly decrease the severity of BPD and risk of these problems, but unfortunately, we do not have a way of predicting who will and will not respond to steroids.
 - Some new research studies looking at genetics are trying to answer this important question, so that babies are not exposed to steroids unnecessarily.

Some parents ask if there are other ways to give steroids to help improve lung function without side effects in infants with BPD. Inhaled steroids (given through an inhaler or ventilator tubing) may show some promise. There are many kinds of inhaled steroids, but more research is needed.

Your medical team will think carefully about whether this medicine should be recommended for your baby and will discuss risks, benefits, and alternatives with you.