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Ms. Randall A & P (compliments of biologycorner)

Article

Corticosteroids: a miracle drug that must be handled with care; The miracle, and risk, of extended steroid use

by JANE E BRODY ; International Herald Tribune 11-12-2009

Steroids -- corticosteroids, that is, synthetic versions of the natural hormone produced by the adrenal glands -- are indeed miracle drugs, capable of restoring the health and saving the lives of countless people with a wide spectrum of serious ailments. Prednisone may be the best known, but there are scores of others, some tailor-made to counter specific ailments. By suppressing the immune response and inflammation, steroids can keep a host of autoimmune diseases and allergic reactions from ravaging the body. They are the cornerstone of treatment for ailments like rheumatoid arthritis, asthma, ulcerative colitis, temporal arteritis, psoriasis and even cases of poison ivy.

But as with any strong remedy, corticosteroids come with a downside: side effects that can sometimes be as serious as the ailments they are intended to treat.

Last week I told about a friend with severe asthma who developed a rare complication that forced him to stop using the steroids that for decades had helped him breathe. He was losing his vision to steroid-caused macular degeneration. He found an alternative nondrug therapy, the Buteyko breathing method, that seems to have kept him well and steroid-free for many months.

But most people who depend on steroids are not so fortunate. For them, using the drugs year in and year out is a balancing act between benefit and risk. Knowing what those risks are and how they can be minimized can help people who depend on steroids to be alert to early warning signs of trouble and to take measures to counteract it.

The likelihood of serious side effects depends on how long steroids are used, how they are taken, what type of corticosteroid is prescribed and how high the dose must be to keep the ailment under control. They tend to cause fewer complications when applied to the skin, or when inhaled for days or weeks for an allergic reaction or asthma. Injected steroids or oral doses taken for months or years -- to treat rheumatoid arthritis, for example -- are far more likely to cause serious side effects, as are injected steroids.

So an over-the-counter steroid like hydrocortisone, applied to small areas of skin to relieve poison ivy or eczema, is unlikely to have any untoward effects.

But when injected repeatedly into a muscle or joint, corticosteroids can cause weakening and degenerative changes that limit their usefulness in treating chronic athletic or overuse injuries.

In most people, chronic use of inhaled steroids, considered medically essential to control most cases of asthma, has few if any adverse effects. Children may experience retarded growth, but studies have shown that they eventually catch up and achieve a normal height.

When corticosteroids are taken orally for less than three months, they are associated with temporary side effects like depression, an increased appetite, insomnia, mood swings and weight gain (partly from water retention).

Steroids taken orally for more than three months can have more profound and sometimes irreversible effects. Serious side effects are more likely when steroids are taken in high doses for a year or longer.

In addition to weight gain, side effects may include high blood pressure, deteriorating bones that can result in osteoporosis, diabetes, thinning of the skin, muscle weakness, moon face (caused by increased fat deposits, which may also occur in the stomach, chest and upper back), cataracts, glaucoma, ulcers, easy bruising, increased sweating, acne, arterial deposits that can lead to heart disease and, because of their effect on immunity, delayed healing of wounds and an increased risk of infection that can persist for a year or more after the medication is stopped.

Excess weight resulting from steroid use is normally lost within six months to a year after the drug is stopped and appetite returns to normal.

When prescribed a corticosteroid, the most important thing is to follow dosing instructions to the letter. Use no more than is needed, and never abruptly stop steroids. The drugs suppress the function of your adrenal glands, which need time to recover. When the condition under treatment abates, gradually reduce the steroid dosage as instructed by your doctor.

QUESTIONS:

- Where are natural corticosteroids produced?
 - thymus
 - adrenal glands
 - pituitary
 - pons
- What is the best known corticosteroid?
 - prednisone
 - colitis
 - testosterone
 - aspirin
- In general, corticosteroids work by:
 - elevating the blood pressure
 - improving circulation
 - reducing swelling
 - suppressing the immune system
- Corticosteroids are used to treat what ailment(s)?
 - asthma
 - arthritis
 - psoriasis
 - all of these
- Long term use of a steroid inhaler by children can cause what side effect?
 - delayed sexual development
 - slowed growth
 - mood swings
 - weight gain
- More serious side effects occur when steroids are:
 - taken for long periods
 - injected
 - taken in children
 - prescribed by doctors
- Why is it necessary to slowly stop the use of steroids, rather than abruptly stop usage?
 - the heart could suffer damage
 - the adrenal glands need time to start producing natural hormones
 - seizures can occur from withdrawal
- What is the theme of this article?
 - Steroids can help treat illnesses, but there are also risks
 - Steroids should only be taken with a doctor's supervision
 - Steroids are dangerous and should not be legal
- Based on the context of the sentence in the last paragraph, what do you think the definition of "abates" is?
 - becomes worse
 - stops working
 - goes away
- Based on the context of the article, what do you think an "autoimmune disease" is?
 - when your immune system reacts to things it should not
 - an ailment that is easily transmitted from one person to another
 - a problem caused by the extended use of steroids