

## The Uses and Abuses of Corticosteroids Stephen Sheldon, D.V.M.

Dr. Danny W. Scott, a professor of veterinary dermatology, writes "glucocorticoids (corticosteroids) are decidedly the most used and abused medicaments in veterinary medicine." He is correct. Part of the reason is that corticosteroids are used to treat so many conditions; quite well I might add! Nonetheless, they are a very feared drug by the general public. Read on and relax a bit...knowledge is good.

Corticosteroids (or glucocorticoids, steroids) are hormones naturally secreted by the adrenal glands. They have strong antiinflammatory and immunosuppressive properties. They are not the same 'steroids' taken by bodybuilders; those are anabolic steroids which are derivatives of sex hormones (ie. testosterone). In 1949 scientists figured out how to make hydrocortisone and modern medicine hasn't been the same since. I think we call it a paradigm shift. However, after years of use we discovered there were adverse effects.

After reading this paragraph you'll understand why they were hailed as miracle drugs. Here's a partial list of their indications: Inflammatory diseases, inflammatory bowel disease, asthma, chronic bronchitis, hepatitis, colitis, enteritis, gingivitis, stomatitis, encephalitis, allergy, flea allergy, contact dermatitis, hot spots, itching, seborrhea, food hypersensitivities, immune mediated diseases, systemic lupus, pemphigus, arthritis, hypercalcemia, cancer, intervertebral disc disease, spinal cord trauma, nephritis, shock, trauma, cerebral edema. Are you impressed yet?

Veterinarians use cortisone most for skin related diseases, especially those Veterinarians that practice in subtropical climates like South Florida. Between 50% and 75% of the cases presented to a Veterinarian here are skin cases (it's not hard to choose lectures when attending continuing ed classes!). Steroids are a very effective part of managing skin cases but remember they are just that...only a part. Often times they are the only effective means of controlling a condition (ie. hot spots or pyotraumatic dermatitis) and can be used properly and judiciously. Other times, for example inhalant allergies, we use cortisone: 1) as infrequently as possible 2) at the lowest possible doses 3) on an every other day dosage where possible and 4) in conjunction with other allergy remedies (ie. shampoos/rinses, antihistamines, essential fatty acids etc). We then try to taper a patient with allergies completely off the drug. Sometimes we're successful; sometimes we're not.

Corticosteroids do however, have side effects. Most of these relate to alterations of the HPA axis (hypothalamus, pituitary, adrenal). In simpler terms, if you supply the body with cortisone through either injection, oral, topical, ophthalmic, or otic preparations, it sends a signal to the adrenal glands to stop making cortisone. The problem is other areas of the adrenal gland respond as well and the glands can shrink or atrophy. And you need your adrenal glands for other metabolic functions like electrolyte and mineral balance to name a few. Besides problems with the HPA axis, corticosteroids can cause sodium and water retention, increased thirst and urination, liver disease called steroid hepatopathy, insulin resistance, and stomach ulcers. That is just a partial list!

Not all cortisones are created equal either! Some are much stronger than others; some last longer than others; and some suppress the HPA axis more than others. It is key for your Veterinarian to know the difference between the forms and when they are indicated. The same cortisone used to treat skin disease (prednisone) is not the same one used in spinal cord trauma (methylpred succinate) or in feline gingivitis (methylpred acetate). The severity and type of condition being treated also dictate which type of cortisone is used and for how long. For short term therapy as indicated in emergencies (ie, shock, trauma) we use long-acting and strong preparations because a single dose is usually all that is needed. Chronic conditions requiring continued therapy (ie. immune mediated disease, cancer, certain skin conditions) are best treated with relatively short acting drugs like prednisone. The doses are then tapered to the least amount of drug needed to control the disease given only every 2nd or 3rd third day (called alternate day therapy). In this type of regimen side effects are minimized and alterations to the HPA axis are also lessened. When treating a chronic condition your pet may initially respond and then for no good reason stop (steroid tachyphylaxis); if steroids are indicated your veterinarian should try a different one. Often we can return to the original steroid at a later date; no one knows why with any certainty. Remember, all cortisones are not created equal.

Another formulation of cortisone, called repository glucocorticoids (methylpred acetate and triamcinalone acetonide) are often used in Veterinary Medicine. They are usually used for short term intensive therapy for inflammatory and skin conditions. They are intermediate in their strength but are released over a period of weeks. They have great advantages for the Veterinarian and client who have difficulty medicating the animals. The disadvantage is you can't get rid of them if there are side effects. Fortunately they are tolerated very well and many authors report no problems using them 2-3 times a year if needed for dogs. Cats can receive them 2 weeks apart until the condition responds and then every 8 weeks if needed safely.

The glucocorticoids are a wonderful class of drugs to have available. We would be hard-pressed to treat pets without them. We need to respect corticosteroids, both for their ability to cure and their potential for harmful side effects. We need to understand their indications and communicate to our clients our goals and objectives of treatment.

Medicine is always risk versus benefit. There are many benefits of using corticosteroids

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