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Roundtable Discussion:

from: [ADDISON'S DISEASE: UNCOMMON OR UNDERDIAGNOSED? A roundtable discussion sponsored by an educational grant from Novartis Animal Health](#)

– Drs. Bruyette, Behrend, Scott-Moncrief, Greco, & Kintzer

“Bruyette: The primary complaint we get from clients whose pets are being treated for Addison’s disease is polyuria and polydipsia. I would like the group to discuss whether the cause is the prednisone, the mineralocorticoid, or both. How do you approach the patient that is PU-PD?

Greco: Those are the hardest to deal with. If they’re on Florinef, I switch them to Percorten-V and use a very low dose of prednisone—the smallest dose I can possibly give.

Behrend: What’s the lowest dose you use?

Greco: I might use 1 mg for a 100-lb dog...”

On Florinef/Fludrocortisone dosing at 0.1 mg/10 lb body weight (0.1 mg/5 kg):

from: [Hypoadrenal Gland Disease - Robert M. Hardy - Textbook of Veterinary Internal Medicine, 4th edition](#)

“...Fludrocortisone is a potent oral mineralocorticoid that is useful as daily replacement therapy. It is available in 0.1-mg tablets, and its mineralocorticoid potency is equivalent to that of natural aldosterone. It also has significant glucocorticoid activity. On a milligram basis, it is ten times as potent as cortisol. Thus, it provides for both the glucocorticoid and mineralocorticoid needs of most patients once the cortisol needs during an adrenal crisis are managed. It is administered at approximately 0.1 mg/10 lb body weight (0.1 mg/5 kg) in divided doses every 12 hours. Dosages are adjusted based on normalization of serum sodium and potassium concentrations. Electrolytes should be monitored every 4 to 7 days during the first week or two and then every 3 to 4 months during the first year of therapy. Dogs generally develop increased need for fludrocortisone during the initial 6 to 18 months of therapy. After that time, most have stable mineralocorticoid dosages...”

On Percorten dosing:

CVC 2008 Highlights: Managing atypical and critical cases of primary hypoadrenocorticism in dogs – David S. Bruyette, DVM, DACVIM

from: <http://veterinarymedicine.dvm360.com/cvc-2008-highlights-managing-atypical-and-critical-cases-primary-hypoadrenocorticism-dogs>

“Furthermore, I have found that large dogs (> 50 lb) may need only 0.5 mg/lb DOCP, and if their electrolyte concentrations are normal at four weeks after the first injection, you may be able to effectively treat these patients with an even lower dose. DOCP is also effective when given subcutaneously,⁶ and we have taught our clients how to administer these injections at home, thus saving the expense and time of a trip to the hospital for dogs that are stable.”

Lower initial dose desoxycorticosterone pivalate for treatment of canine primary hypoadrenocorticism - Julia A. Bates, DVM, DACVIM (SAIM)

<http://onlinelibrary.wiley.com/doi/10.1111/avj.12019/abstract>

Link for Interview with Dr. Julia A. Bates:

[Interview with Dr. Julia A. Bates](#)

On Pred dosing & giving it daily:

Treating Small-Breed Addison's Dogs with Low Doses of Prednisone or Prednisolone – Mark E. Peterson, DVM, DACVIM

from: http://animalendocrine.blogspot.com/2013/12/treating-small-breed-addisons-dogs-with.html?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+AnimalEndocrineClinic+%28Animal+Endocrine+Clinic%29

“The glucocorticoid replacement dose I use for prednisone or prednisolone in dogs with Addison's disease is 0.1-0.2 mg/kg/day...So if you are giving your small dog 1.25 mg/day, that means you are giving too much of the drug. That would certainly be enough to induce iatrogenic Cushing's disease, as reflected by the increased appetite.”

“...Administering too much glucocorticoid will cause increased hunger (as you see in your dog). Overdosage of prednisone, prednisolone or any other glucocorticoid can also lead to lethargy, weight gain, enlargement of the abdomen, muscle atrophy, and muscle weakness. Decreasing the dose of the prednisone or prednisolone should help prevent any of these problems.”

“Prednisone tablets are available as 1-mg and 2.5-mg sizes, which can be helpful in dosing small to medium-sized dogs...In addition, both prednisone and prednisolone are available as a syrup/oral liquid or solution, available as a 1 mg/mL concentration...All of these formulations are human-labeled products so your veterinarian may not be familiar with them. Your local pharmacy will know about them, however.”

Q & A: What's the Ideal Prednisone Dose for Dogs with Addison's Disease?

– Mark E. Peterson, DVM, DACVIM

from: <http://endocrinevet.blogspot.com/2011/02/q-whats-ideal-prednisone-dose-for-dogs.html>
(We are highlighting selected quotes but encourage you to read the entire blog.)

“For dogs with spontaneous hypoadrenocorticism (Addison's disease), it makes the most sense to me to give the glucocorticoid supplementation on a daily basis...There is no reason to give alternative day steroids to avoid adrenal suppression in these dogs, because the adrenals are already permanently atrophied or destroyed in dogs with Addison's disease. If you give alternate day prednisone, they would have no glucocorticoid reserve on the off day.”

“I dose prednisone or prednisolone at 0.1-0.2 mg/kg/day. If the dog develops polyuria and polydipsia (PU/PD) or any other signs of iatrogenic Cushing's syndrome, I would lower the dose as needed. I rarely, if ever, give a higher dose than 5-mg per day to ANY dog. The 5-mg dose is the average human maintenance dose, and we see very few dogs that weigh over 70 kg.”

“Unfortunately, there is not a test to determine the ideal or lowest dose of prednisone or prednisone in dogs (or cats) for glucocorticoid replacement. We must base the dose of how the dog feels, as well as looking at side effects.”

“...Well, you are correct in that I don't generally treat any dog with Addison's disease (or hypoadrenocorticism) with a total daily dose of prednisone (or prednisolone) higher than 5 mg. But this is the physiologic dose needed to replace the dog's deficient cortisol secretion characteristic of Addison's disease. We only give a small dose to those dogs because we provide this amount of prednisone to them every day for the rest of their lives (generally daily for months to years). Veterinarians commonly use much larger doses of prednisone and other glucocorticoid drugs for a variety of other reasons. For example, we may use higher doses of the drugs because of their anti-inflammatory or immunosuppressive properties. Or sometimes we use the drug just simply to help stimulate the appetite. In these instances, these higher doses are not generally given for longer than a few days or weeks because the higher doses will lead to signs of iatrogenic Cushing's syndrome. But sometimes in dogs with severe disease (such as cancer), we don't have any choice other than to use these drugs to make our dogs feel better.”

Canine Addison's Resources & Education (CARE)

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“...During times of hunts or other strenuous exercise, it would be useful to monitor blood glucose values, especially if he is showing signs of low blood sugar (weakness, lethargy). It may be useful to provide extra glucocorticoid supplementation during those times of work, and of course, a high quality diet is essential. So yes, a performance dog food with higher protein and fat content would be good. And of course, if he develops lethargy, weakness or disorientation, it would be a good idea to feed him extra at that time, even if you cannot measure a blood sugar immediately.”

“The most common signs of overdosage of prednisone (or any other glucocorticoid or cortisone-type drug) that we see in dogs include the following:

1. Increased thirst and urination;
2. Increased appetite;
3. Weight gain”

“An 85 pound dog should never need more than 5-mg of prednisone or prednisolone a day. That's the human adult maintenance dose (so even a 175 pound man would not be treated with higher doses than that). The high pred doses explain the increase in hunger, thirst, and urination. The high doses can also cause lethargy and weakness with time...Remember that the 5-mg tablet size is the daily maintenance dose for the average-sized human patient. So at 85 pounds, that's at least twice the amount that you should be giving...Remember that I'm not saying that your veterinarian has done anything "wrong." Vets have been taught that these doses of prednisone are appropriate to give to dogs. That is certainly true in the short-term, but not for life-time use.”

“Your dog's prednisone maintenance dose is 2.5-5 mg per day. Chronic administration of 10 mg a day will likely lead to muscle atrophy and other signs of iatrogenic Cushing's disease (pot belly, enlarged liver, hair thinning, insulin resistance, predisposition to other infections). It's possible that the skin changes you describe are related to the drug. Remember that giving prednisone will make the patient "full better" even if the original problem isn't cured. It sounds like there is something else going on - I can't tell you what it is-- but no dog weighing 60 pounds needs 10 mg a day to control Addison's! You need to talk to your vet about further investigation into your dog's problems.”

“The liver changes we see with glucocorticoids lead to enlargement of the liver and increased brightness of the liver on ultrasound evaluation. The glucocorticoids also induce an isoenzyme of alkaline phosphatase that can lead to marked elevations on that enzyme. The ALT and AST can also be high in these dogs. Classically, the serum alkaline phosphatase will always be higher than the ALT or AST. In your dog, it's certainly possible that the prednisone dose is too high. If you giving more than 0.1 mg/kg/day, I'd certainly drop it down to that level. Switching to prednisolone or methylprednisolone (Medrol) would be a good idea so the liver doesn't have to metabolize the prednisone. Overall, if this doesn't work, I agree that a further workup (eg, bile acids, liver biopsy) would be indicated.”

“If you don't give enough prednisone, your dog will develop a decreased appetite, vomiting, or diarrhea. So if that doesn't happen and your dog is acting normally, the dose should be adequate.”

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