

Prednisolone in the Development of Diabetes Mellitus in Cats

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In the literature

Nerhagen S, Moberg HL, Boge GS, Glanemann B. Prednisolone-induced diabetes mellitus in the cat: a historical cohort. *J Feline Med Surg.* 2021; 23(2):175-180.

FROM THE PAGE ...

Most cats that develop diabetes mellitus (DM) are classified as having type 2 diabetes, which is caused by relatively impaired insulin secretion and insulin resistance.¹ Uncommonly, cats can develop DM secondary to hypercortisolemia, hypersomatotropism, or autoimmune destruction of the endocrine pancreas. Therefore, it is prudent to evaluate for the cause of insulin resistance in most cats with DM. Physical inactivity, previous steroid administration, male sex, and consumption of dry food have been shown to be risk factors for the development of DM.^{2,3} However, the risk associated with prednisolone therapy on the development of DM is poorly described in the literature.

This retrospective study evaluated cats given prednisolone (≥ 1.9 mg/kg/day) for at least 3 weeks. The cats were monitored for at least 3 months after initial therapy. Of the 143 cats evaluated, 9.8% developed DM; most (85.7%) developed DM within the first 3 months of prednisolone therapy. No risk factors were observed to be associated with the development of DM in these cats; obesity and sex were not associated with increased risk. Although no significant difference was found among cats that did not develop DM, the median prednisolone dosage was higher in cats that did develop DM (3.5 mg/kg/day vs 2.9 mg/kg/day). This might be due to the small sample size of diabetic cats. In humans, steroid dosage is a risk factor for development of secondary DM⁴; larger studies in cats are required to evaluate this further. Lower dosages of prednisolone (≈ 5 mg/cat/day [NOT mg/kg]) are commonly used to treat inflammatory diseases (eg, inflammatory bowel disease, asthma). Anecdotally, DM has been observed in these patients; however, formal evaluation has not been done for lower dose or prolonged steroid administration, and until this has been evaluated, cats receiving any dosage of steroids should be considered to have increased risk for developing DM. Pet owners should be educated to monitor for clinical signs suggestive of disease.

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... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Steroid therapy may result in insulin resistance and DM in cats. Most (64.3%) cats that developed DM in this study required insulin therapy and/or reduction of the steroid dosage for management of DM.
- 2** Although DM can occur at any time, most cats developed DM within the first 3 months of prednisolone therapy. It is important to educate owners on how to monitor for polyuria, polydipsia, and polyphagia, so cats that develop DM can be identified. Unlike dogs, cats do not normally exhibit polyuria/polydipsia with corticosteroid therapy.
- 3** Tapering to the lowest effective steroid dosage as soon as possible may help reduce the risk for secondary DM; however, this requires further evaluation.

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CASE IN POINT ▶ CONTINUED FROM PAGE 86**References**

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Suggested Reading

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