

Small

# FAT IN THE BLOOD

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C&T No. 58

'Money Penny' was a one-year-old FN British-shorthair when she presented to me with a severe non-regenerative anaemia (PCV 8%) and was ultimately diagnosed with non-regenerative immune mediated haemolytic anaemia.

She received a typed whole blood transfusion and dexamethasone (0.2 mg/kg IV) and subsequently developed high output heart failure with pleural effusion, requiring needle thoracocentesis. Her anaemia eventually resolved with hefty doses of prednisolone (approximately 2mg/kg BID for 3 weeks before commencing dose reduction) and chlorambucil (2mg per cat every other day). With a gradual taper of medications, she has now been in remission for a number of months. Her similarity to the previous case (C&T No. **UPDATE THIS**) was the development of a hypertriglyceridemia and hyperglycaemia, suspected to be secondary to glucocorticoid administration.

In healthy human patients receiving oral prednisolone, there was a significant increase in levels of very low-density lipoprotein-triglyceride (VLDLs), very low-density lipoprotein-cholesterol, high density lipoprotein-cholesterol and apolipoprotein (what a fatty mouthful...). All values returned to baseline within 2 weeks of stopping the prednisolone. (Ettinger Jr *Metabolism*, 1988).

Some cats (and many dogs, including those with endogenous hypercortisolaemia) seem equally sensitive to corticosteroid effects although there is little information in the literature linking corticosteroid usage to lipid abnormalities (there is more if you are a Schnauzer). One study demonstrated some Burmese cats in Australia had delayed triglyceride clearance compared to other cats (Kluger *et al* JFMS 2009) and this may explain an increased susceptibility to the development of lipid aqueous, pancreatitis and diabetes mellitus. A case report describes a DSH cat who developed transient corneal lipidosis and hypertriglyceridemia following intravenous lipid rescue therapy for permethrin toxicosis (Yuh *et al* Can Vet J 2018). The cat's signs resolved within 72 hours without intervention.



Figure 1. Money Penny

After successfully navigating the stormy waters of severe anaemia, heart failure (tri-cavitary effusions) plus thrombocytopenia, **the development of the hypertriglyceridemia and hyperglycaemia just as the patient's anaemia** was starting to improve caused more than just a few grey hairs to develop. There was gnashing of teeth and stamping of feet to say the least.

Clinically, Money Penny was improving. Although she had developed PUPD, this could have been explained by multiple mechanisms in addition to diabetes and after thorough discussions with her owner (who of course was a human medical specialist in immunology) we elected to attempt a more rapid prednisolone taper by the addition of chlorambucil and monitoring Money Penny's urine at home via dipstick for signs of ketonuria. We planned to commence insulin treatment if she became ketotic.



Figure 2. Money Penny receiving a fresh whole blood transfusion

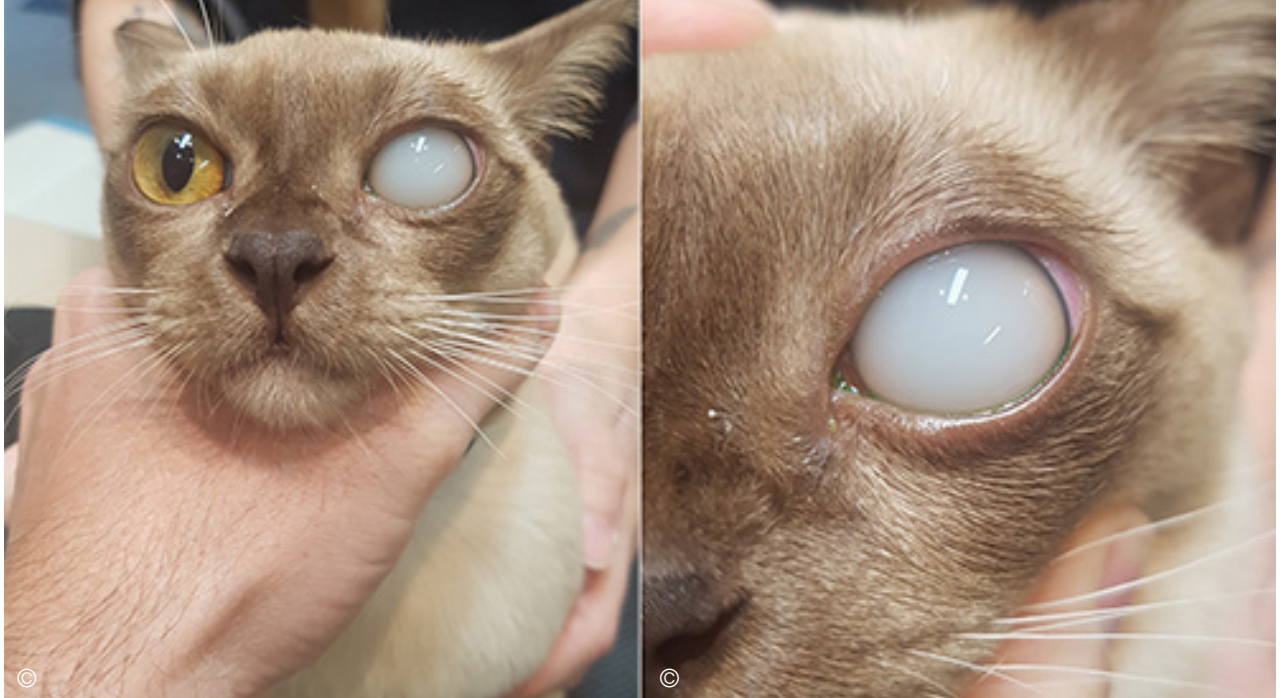


Figure 3. A & B. Burmese cats may have an increased susceptibility to the development of lipid aqueous, pancreatitis and diabetes mellitus

As her prednisolone dosage was reduced, her triglycerides returned to normal and the hyperglycaemia resolved, and she has remained in remission with her anaemia off all medications for a number of months.

heart failure following blood transfusion and dexamethasone, so close monitoring in post-transfusion period is just so important. Even if patients are discharged, make sure owners monitor resting breathing rates at home.

**I learnt numerous lessons from this patient:**

Firstly, a reminder that anaemia severity at presentation in cats does not predict survival (Korman *et al*, JFSM 2013) and young cats with immune-mediated anaemias can do very well.

Thirdly, prednisolone is a drug not to be trifled with—it has so many systemic effects which can be unpredictable. I will definitely be watching triglyceride and glucose levels in any Burmese and British shorthair closely in the future.

Secondly, it is easy for anaemic cats to develop

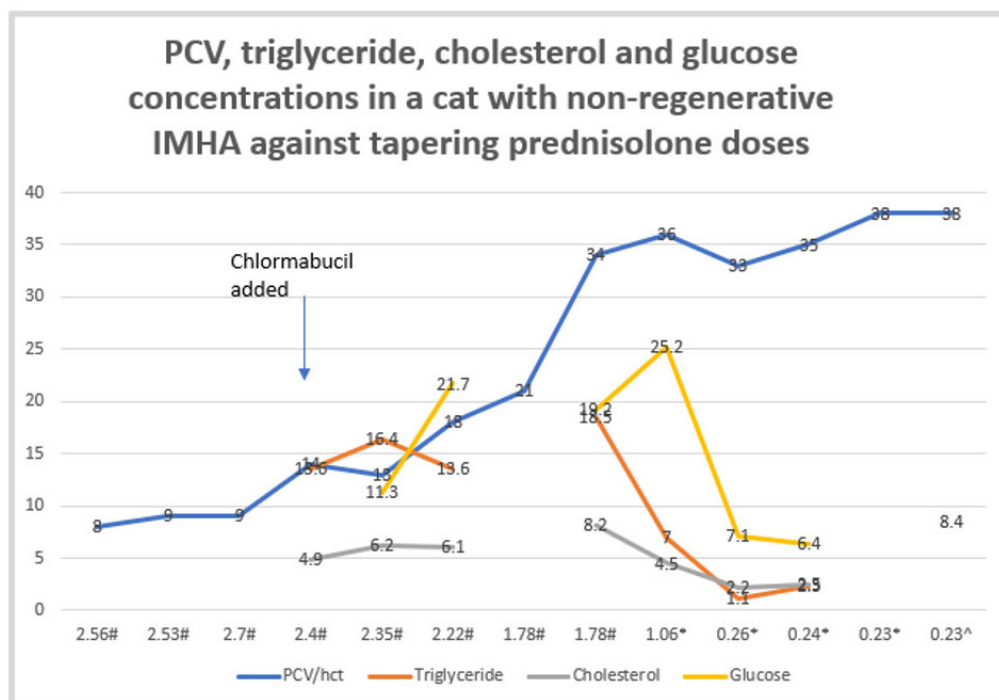


Table 1. Prednisolone doses on the y axis are calculated as mg/kg/day-#twice daily, \*once daily, ^every other day. Treatment started with 2.56 mg/kg/day on 14/10/19 and concluded with 0.23 mg every other day 19/8/20.