

Medical waste poisoning in a cat and the success of healing therapy at the Veterinary Teaching Hospital of Educational Mandalika University

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ABSTRACT: Poisoning in cats is often caused by their behavior, which often investigates what they see and find. This paper reported a case of poisoning in a cat with the results of clinical examination, haematological examination, and therapy in a three-year-old cat with symptoms of weakness, paleness, and vomiting foamy fluid. Haematological examination revealed that the cat had an infection and hyperchromic macrocytic anemia. Therefore, the cat was diagnosed with poisoning. Treatment with antidote, ringer lactate supportive therapy, anti-inflammatory, and multivitamins was administered as follow-up treatment until he recovered for a week at the Veterinary Teaching Hospital of Educational Mandalika University.

Keywords:

cat, poisoning, haematology, anemia, macrocytic hyperchromic

■ INTRODUCTION

According to the American Society for the Prevention of Cruelty to Animals, the Animal Poison Control Center, and the British Animal Poison Information Service, symptoms of toxicity in cats usually appear after cats are exposed to pesticides, rodenticides, household cleaning supplies, poisonous plants, heavy metals, foods, human therapeutic drugs, animals, and industrial products (Merola & Dunayer 2006, Grave & Boag 2010). In humans and animals, poisoning is caused by a synergy between toxic agents and biological systems; therefore, conditions such as these can cause health problems and potentially death (Nogueira 2012).

Intoxication is the state of disturbance caused by toxic agents. This interaction is potentially fatal to humans and animals. In veterinary medicine, poisoning cases have a significant impact on survival. The following five causes of animal poisoning must be examined: poisonous plants, pesticide contamination, and moldy food (Alnasser *et al.* 2020). Some active toxic ingredients in cats include acetaminophen/paracetamol, a type of acid, alcohol, chlorine, cleaning agents, fertilizers, petrol, diesel oil, xylitol, insecticides, gasoline, paints, medicines, chemicals, paint solvents, and rat poisons (Karlina & Haryanto 2016, Hermawan & Nurak 2023).

Cats, as pets that are very popular among humans, are suitable for modern lifestyles. Cats have specific characteristics that are very likely to influence behavior and thus influence

the occurrence of poisoning (Anjos & Brito 2009). Cat behaviors, such as hunting, investigating, and licking, increase exposure to toxic active ingredients, resulting in poisoning (Grave & Boag 2010). This paper reports a case of poisoning in a cat and its successful treatment at the Veterinary Teaching Hospital (VTH) of Educational Mandalika University (UNDIKMA).

■ CASE

Signalement: A 2-year-old female cat named Oyen was examined at the VTH of UNDIKMA, West Nusa Tenggara (Figure 1). **Clinical symptoms:** Weakness, convulsions, and vomiting of foamy fluid. **Clinical examination:** Body weight 3 kg, mucosa pale, skin turgor more than 2 s, rectal

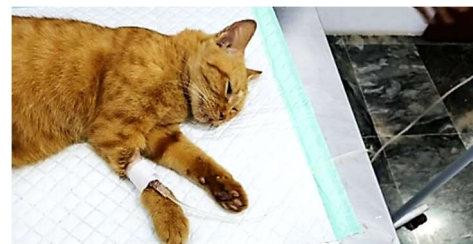


Figure 1. The condition of Oyen's cat when it first arrived at the Veterinary Teaching Hospital of Educational Mandalika University.

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temperature 35°C, respiratory rate 29 x/min, pulse 110 x/min. **Supporting examination:** Blood haematology examination. **Diagnosis:** Poisoning. **Prognosis:** Dubius. **Therapy:** Atropine injection 0.1 ml/kg BW, Ringer lactate supportive therapy, Deksameton (Glucortin®) 0.1 ml/kg BW, Multivitamin (Injectamin®) 0.1 ml/kg BW.

■ RESULTS AND DISCUSSION

Haematological examination showed an increase in white blood cells (WBC) or leukocytosis (Table 1), indicating that toxic agents have entered the body and that white blood cells play a role in fighting poisonous agents. The lymphocytes showed normal values. However, granulocyte count increased, interpreted as granulocytosis, and RBC count decreased, interpreted as erythropenia. Meanwhile, MCHC and MCH levels increased, indicating hyperchromic macrocytic anemia. Granulocytosis occurs when there are too many granulocytes in the bloodstream. The term “granulocyte” refers to a category of white blood cells that include neutrophils, eosinophils, and basophils that all work together to fight inflammation, infection, and allergens in the body.

An increase in the MCHC and MCH levels indicated the occurrence of hyperchromic macrocytic anemia. The occurrence of liver disorders due to poisoning in cats has an impact on the liver condition. This was illustrated by an increase in MCHC levels on hematological examination. An increase in MCH level is a sign of macrocytic anemia. This occurs because of a deficiency of vitamin B in the body and is also an indicator of liver disease. MCHC levels that were too high indicated that the cells were hyperchromic. This means that there is a high concentration of hemoglobin in each red blood cell. This is indicated by the denser red color. The MCHC value measures the amount of Hb in units of red blood cells (Beck 2009).

Erythropenia is a condition in which low erythrocyte levels can be caused by several factors. The lack of nutrition needed by cats to produce red blood cells is caused by a lack of iron. Low levels of erythrocytes were indicated by the cat's body being weak, pale, and short of breath. Anemia is a patholo-

Table 1. Haematological profile of an Oyen cat with a case of poisoning at the Veterinary Teaching Hospital of Educational Mandalika University (UNDIKMA), West Nusa Tenggara of INDONESIA.

Parameters	Result	Unit	Normal Value	Interpretation
WBC	29.0	10 ⁹ /L	5.5 - 19.5	Leukocytosis
Lymph	6.0	10 ⁹ /L	0.8 - 7.0	Normal
Gran	20.2	10 ⁹ /L	2.1 - 15.0	Granulocytosis
RBC	4.41	10 ¹² /L	4.60 - 10.00	Erythropenia
HGB	9.4	g/dL	9.3 - 15.3	Normal
MCHC	42.1	g/dL	30.0 - 38.0	Hyperchromic
MCH	21.3	pg	13.0 - 21.0	Macrocytic
PLT	261.0	10 ⁹ /L	100 - 514	Normal

Note: WBC=white blood cells, Lymph=lymphocyte, Gran=granulocyte, RBC=red blood cells, HGB=haemoglobin, MCHC=mean corpuscular hemoglobin concentration, MCH=mean corpuscular hemoglobin, PLT=platelets.

gical condition or diagnostic problem rather than a disease. The main significance was the reduced capacity of the blood to transport O₂ to tissues. Anemia occurs due to the increased loss of erythrocytes due to blood loss, accelerated erythrocyte destruction (pathological hemolysis), and decreased effectiveness of erythrocyte production. Anemia can be categorized based on the marrow response, namely regenerative anemia and nonregenerative anemia. Regenerative anemia is anemia accompanied by reticulocytosis, whereas non-regenerative anemia is anemia that is not accompanied by reticulocytosis (Stockham & Scott 2008). Weakness, vomiting of frothy liquid, tongue, and gums that looked pale in the cat were clinical symptoms observed when a cat was poisoned. This was caused by poisoning that had spread into the cat's body, which inhibited oxygen from entering the body. Such conditions make cats unstable (Hermawan & Nurak 2023).

■ CONCLUSION

The blood profile of the patient in this case with medical waste poisoning showed infection and inflammation, leading to hyperchromic macrocytic anemia. Administration of anti-dots, anti-inflammatory agents, multivitamins, and supportive therapy for body fluids can threaten this cat.

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