EMERGENCY ACTION GUIDELINES

ALLIUM POISONING

THIS DOCUMENT IS INTENDED FOR USE AS A GUIDELINE ONLY. DOSES ARE REFERENCED AS AT THE PUBLICATION DATE. INDIVIDUAL CASES AND TOXIC DOSES MAY VARY.

SUSPECTED/WITNESSED/CONFIRMED INGESTION

of onion, garlic, spring onion, shallots, chives or leeks

Diagnosis is based on history of ingestion, clinical signs and Heinz body haemolytic anaemia +/- methaemoglobinaemia

TOXIC DOSES

- Garlic and onions are the most toxic of the Allium species
- Powdered forms are more toxic on a gram for gram basis than the actual plant material, due to their concentrated nature[1]

Toxic dose not fully understood.

Ingestion of > 5g/kg of Allium species is likely toxic.

ASYMPTOMATIC

INDUCE EMESIS

Dogs: Emedog @ 0.1mg/kg SC

Cats: Alpha 2 agonist[3]

ADMINISTER ACTIVATED CHARCOAL (AC)

Carbodote Prime: (AC + sodium sulphate), single administration.
(Refer to packaging for instructions on how much to administer)

TAKE BASELINE BLOOD AND URINE SAMPLES

Signs of haemolytic anaemia or methaemoglobinaemia may be delayed for 1-7 days post ingestion, so repeat testing is required

Clinicopathological abnormalities may include:

- **BIOCHEMISTRY:** Hyperbilirubinaemia, haemoglobinaemia, methaemoglobinaemia. An increased BUN level may be present caused by transient nephrosis
- **HAEMATOLOGY:** Decreased PCV, haematocrit and haemoglobin concentrations. Following a lag period of 3-5 days, a regenerative response to anaemia may be noted (reticulocytosis, increased MCV, decreased MCHC). Neutrophilia
- **BLOOD SMEARS:** Heinz bodies and eccentrocytosis
- **URINALYSIS:** Haemoglobinuria, bilirubinuria, proteinuria
- **URINE SEDIMENT EXAM:** Haemoglobin or haemosiderin casts

SYMPTOMATIC

CLINICAL SIGNS

1-7 days following ingestion

Ingestion of large quantities may result in clinical signs within 1-2 days of exposure, but typically clinical signs are delayed by up to 7 days[4]

If the ingestion was recent, a patient's breath may smell like onions or garlic

Initially patients may present with signs of gastroenteritis:

- Vomiting, diarrhoea, hypersalivation, abdominal pain, anorexia and dehydration

There is usually a lag of a couple of days before clinical signs secondary to anaemia and intra/extravascular haemolysis are seen:

- Pale mucous membranes, tachypnoea, dyspnoea, tachycardia, jaundice, lethargy, ataxia, exercise intolerance, dark coloured urine, cold sensitivity

SUPPORTIVE CARE

There is no antidote for Allium toxicosis

- Isotonic crystalloid IVFT to replace fluid losses and provide ongoing fluid maintenance to help reduce the risk of haemoglobin-related nephrosis[5]
- Anti-emetics as necessary (e.g., maropitant)
- Gastroprotectants as necessary (e.g., omeprazole)
- Analgesia for abdominal discomfort (e.g., buprenorphine)
- Monitor temperature and treat aberrations appropriately
- Provide oxygenation where appropriate
- If the anaemia becomes severe, administer blood transfusions with whole blood or packed red blood cells

MONITORING

Check the PCV and a blood smear daily for 5-7 days due to the lag time in clinical signs developing

ALLIUM POISONING KEY FACTS

- All parts of the plants are toxic (whether raw, dried or cooked)[4]
- Ingestion of a single large quantity, or ingestion of repeated small amounts can cause toxicity
- Cats are 2-3 times more prone to erythrocyte oxidative damage than dogs, so are extremely susceptible to Allium toxicity
- Due to the nature of the feline spleen and the susceptibility of cat's haemoglobin to form Heinz bodies, 5- 10% of erythrocytes in healthy cats may have Heinz bodies. Significant numbers of Heinz bodies can be seen in cats without signs of haemolytic anaemia due to diabetes mellitus, hyperthyroidism and lymphoma
- Certain breeds of dogs, particularly Japanese breeds such as the Akita and Shiba Inu, are more susceptible to Allium toxicity[4]
- Differential diagnoses of methaemoglobinaemia, Heinz bodies or haemolytic anaemia include: paracetamol (acetaminophen) toxicosis, local anaesthetic toxicosis, zinc toxicosis, immune mediated haemolytic anaemia, naphthalene (mothball) toxicosis, phenol toxicosis.

PROGNOSIS

- The prognosis is dependent on the type and quantity of Allium species ingested, the severity of the anaemia and the time between ingestion and supportive treatment[4]
- Heinz body haemolytic anaemia caused by Allium toxicity is usually regenerative and a full recovery occurs within 10-14 days with appropriate symptomatic and supportive care

USEFUL CONTACTS

DÔMES PHARMA
Your partner in poisoning.
www.domespharma.co.uk
T 0800 0385868 | **E** help@domespharma.com

VETERINARY PATHOLOGY GROUP
Toxicology testing.
www.thevpg.co.uk | **T** 0113 2870175

PET BLOOD BANK
Access to blood and plasma products.
petbloodbankuk.org | **T** 01509 232222

VETERINARY POISONS INFORMATION SERVICE (VPIS)
Dedicated poisoning information service.
www.vpisglobal.com | **T** 0207 30 55 055

TOX BOX/ELIXIR SERVICE
Immediate access to emergency poisoning products.
www.vpisglobal.com | **T** 0207 30 55 055

PRODUCTS

EMEDOG

- Veterinary licensed apomorphine for dogs
- Packs of 5 or 20x 1ml vials, with a 3-year, unopened shelf life



DON'T FORGET ACTIVATED CHARCOAL!

- Activated charcoal helps in the adsorption of multiple undesirable substances[6]
- Available as liquid or gel
- Repeated adminstrations will be required for substances that are enterohepatically recycled
- Take a look at our range of activated charcoals

THE CARBODOTE RANGE

Carbodote is a complementary feed.

THE ANTI-TOX RANGE
BE PREPARED FOR POISONING

TO FIND OUT MORE ABOUT THE ANTI-TOX RANGE FROM DÔMES PHARMA, VISIT WWW.DOMESPHARMA.CO.UK

DÔMES PHARMA

Emedog, 1 mg/ml, solution for injection for dogs contains Apomorphine. **Legal category** POM-V. For the induction of emesis in dogs. **Use medicines responsibly. www.noah.co.uk/responsible.** For further information and to view the full Summary of Product Characteristics, please contact TVM-UK Animal Health Ltd, Kirtlington Business Centre, Slade Farm, Kirtlington, Oxfordshire, UK. OX5 3JA. **Tel.** 0800 0385868. **Email** help@domespharma.co.uk. Dômes Pharma is the trading name of TVM UK Animal Health Ltd. Prescription decisions are for the person issuing the prescription alone.

Reference: 1. Robertson J.E., Christopher M.M., Rogers Q.R. (1998). Heinz body formation in cats fed baby food containing onion powder. J Am Vet Med Assoc. Vol 212 (8) pp. 1260-6. **2.** Lee K-W, Yamato O, Tajima M, et al. (2000). Hematologic changes associated with the appearance of eccentrocytes after intragastric administration of garlic extract to dogs. Am J Vet Res. Vol 61 (11) pp. 1446-50. **3.** Harvey, A, Tasker, S (eds.) (2013) BSAVA Manual of Feline Practice. Gloucester: British Small Animal Veterinary Association Pp. 139. **4.** Salgado B.S., Monteiro L.N., Rocha N.S. (2011). Allium species poisoning in dogs and cats. J Venom Anim Toxins incl Trop Dis, 63 Refs ed. Vol 17 (1) pp. 4-11 **5.** Cope R.B. (2005). Alliumspecies poisoning in dogs and cats. Vet Med. 100 (8):562-566. **6.** TVM329CarbAd.

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