


CNS DEPRESSION



CNS Toxicities DEPRESSION

Differential diagnoses:

- Alpha chloralose (bird pesticide)
- Barbiturates in euthanased animals
- Ethylene Glycol (antifreeze)



CNS DEPRESSION

Differential diagnoses:

Macrocyclic Lactones - Avermectins,
e.g. ivermectin, abamectin

Marijuana



CNS DEPRESSION

PROBLEMS:

- Ataxia and incoordination
- Depression
- Hypothermia
- Stupor
- Coma

CNS DEPRESSION

ALPHA CHLORALOSE -

Sources:
Anaesthetic - research
rodenticide

NZ - bird pesticide

Secondary poisoning of dogs & cats



CNS DEPRESSION

ALPHA CHLORALOSE -

Mechanism of Action
CNS depressant of ascending
reticular formation

small doses - myoclonic movements

hypothermia (except some dogs)

CNS DEPRESSION

ALPHA CHLORALOSE

"Anaesthetised"

Hypothermic

Depressed

Convulsions

Cats - clawing, hissing
convulsions



CNS DEPRESSION

ALPHA CHLORALOSE TREATMENT

Symptomatic and supportive care

Warm environment

Anticonvulsants

Oxygen

Osmotic diuresis (mannitol)



CNS DEPRESSION

MARIJUANA

Sources?

Plant ingestion

Baked goods (brownies)

Dried plant material



**CNS DEPRESSION
MARIJUANA Toxicity**

THC - tetrahydrocannabinol

anti-emetic effects?

lipophilic, absorbed across GIT & lung

enterohepatic circulation

3 g/kg may cause death, very rare in dogs

Excreted within about 24 hours (1 off)

**CNS DEPRESSION
MARIJUANA**

"Stoned", eyes-glazed look

Pinpoint pupils

Depression

± Excitation

"munchies"

Dogs - "hallucinate", bark, dry mm,
vomit, salivate, ataxia



CNS DEPRESSION

MARIJUANA TREATMENT

Decontaminate with Activated
Charcoal and laxative

Usually wears off within 24 hours

Symptomatic and supportive care

Diazepam



CNS DEPRESSION
 Macrocyclic Lactones
 Abamectin Sources

Abapor, Bomatak A, Genesis,
 Paramectin Pour-ons at 10 mg/ml

81 licensed products containing
 abamectin

pour-ons, drenches, injectables

Routes
 oral
 dermal
 injectables

Abamectin & Ivermectin
 Mammalian Toxicity

Mechanism of Action - Mammals
 GABA neurotransmitter in CNS
 Decreases neuron excitability

MDR1 mutations in dogs - low doses
 p-glycoprotein defect in
 the blood-brain barrier

Normal dogs - high doses

Macrocyclic Lactones Ivermectin & Abamectin

Enterohepatic circulation
 Excreted in faeces
 Most appear to have long T1/2 (days)

CNS

Ivermectin & Abamectin - Clinical Signs

Heading dogs and Huntaways
Ataxia, stiff gait, high stepping
progressive ataxia, ± blindness
muscle weakness
abamectin poisoning - ataxia & blindness,
reported in horses



Suspected Abamectin - Clinical Signs



Ivermectin

Tyke - collie 1 yr old male

Horse wormed on Saturday morning. Tyke ingested some of the paste that horse spat out. Tyke presented several hours later in ataxic state. Within 48 hours was "comatose". Treated at Massey University for 3 weeks before "normalised"

Clinical Signs:

COLLIE OR COLLIE CROSS (MDR1)

- Dilated pupils
- Hypersalivation
- Progressive ataxia, stiff gait
- Muscle tremors
- Blindness (reversible)
- CNS depression
- Coma and death



CNS DEPRESSION

AVERMECTINS - Diagnosis

Brain, plasma, liver, fat

History

Clinical signs

Abamectin & Ivermectin

Pathology

No Gross or histopathological changes

Beagle puppies 11-12 weeks old - SC dose

Doses > 9.4 mg/kg ivermectin died

Pathology:

thymus - haemorrhage

lung - congestion & oedema

lung - acute suppurative pneumonia

skin oedema

CNS DEPRESSION

AVERMECTIN TREATMENT

Symptomatic and supportive care

Activated charcoal (repeat 6-8 hr)

Advise clients:

Prevent animal access to these products
when using pastes, drenches or pour-ons

Decontamination as soon as possible will
reduce the likelihood of a long recovery
period.

CNS DEPRESSION

BARBITURATES

Respiratory depression

Ataxia, disorientation

CNS Depression

Hypothermia



CNS DEPRESSION

BARBITURATES TREATMENT

Symptomatic and supportive care

arrhythmogenic

hypothermia \Rightarrow ventricular
fibrillation and cardiac arrest

Alkaline diuresis e.g. phenobarbitone

CNS DEPRESSION

SUMMARY

"Anaesthetised-like state" or
stuporous

Hypothermia

Osmotic vs Alkaline diuresis



Jack Russell
Ataxic
Blind
Differentials?
Diagnosis?
Treatment?

Is it poisoned?

- Huntaway farm dog presents with ataxia, drooling and blindness.
- The owner doesn't know what the dog was exposed to.
- What questions would you ask the owner?