

Definition:

Poisonous algae are found in stagnant water such as local lakes/ponds

Signs:

Sudden seizures/fits, general unwellness and collapse

Advice:

Gravely serious, go to a vet ASAP and avoid local lakes/ponds if possible

OVERVIEW

- Cyanobacteria (the proper name for the blue-green algae) blooms can occur in fresh and brackish (stagnant) waters, and in backyard ponds where algae material is concentrated
- Nutrient-rich runoff, increased water temperatures, and stagnant water conditions favor toxic bloom formation
- Blue-green algae exposure can lead to an acute liver and nervous system toxicity in animals and humans
- Hepatotoxic (liver toxicity) blue-green algae poisonings are more frequently reported than neurotoxic (nervous system toxicity) algae intoxication
- Toxin-producing cyanobacteria include *Microcystis*, *Anabena*, *Aphanizomenon*, *Oscillatoria*, *Lyngbya*, and *Planktothrix* species
- Microcystins are hepatotoxic blue-green algae toxins that have been found worldwide
- Anatoxins are neurotoxic blue-green algae toxins

GENETICS

- Not applicable

SIGNALMENT/DESCRIPTION OF PET

Species

- Dogs

Breed Predilections

- Dogs—none reported in cats

Mean Age and Range

- Dogs—none

Predominant Sex

- None

SIGNS/OBSERVED CHANGES IN THE PET

Historical Findings

- Taking in the algae/toxins may or may not have been noted

Physical Examination Findings

- Hepatotoxic
- Diarrhea, weakness, shock; rapid progression to depression, coma, and death
- Neurotoxic
- Onset of rigid muscles and tremors within minutes to a few hours after exposure; rapid progression to paralysis, blue-discolored skin and membranes (known as “cyanosis”), and death

CAUSES

Taking in the algae/toxins

RISK FACTORS

- Access to and eating of toxin-contaminated water and/or algae material
- Blooms more common in nutrient-rich water in warmer months
- Blooms concentrated through wind or by removal into containers
- Certain algae reside in the sediment at the bottom of ponds and lakes so dogs mouthing material such as rocks from such sediment can be at risk
- Access to water with visible algae blooms
- Removed algae from ponds with discarded material not removed safely, dumped algae access

TREATMENT

HEALTH CARE

- No available antidote
- Rapid onset typically prevents timely intervention; digestive system cleansing and treatment with activated charcoal can be attempted but the effectiveness is not known
- Hepatotoxic (liver) form: supportive care, close monitoring, and case-specific intravenous fluids to correct low blood sugar, also vitamin K1, and plasma transfusions may be used

- Neurotoxic (nervous system): supportive care and seizure control as needed

DIET

- Good quality diet

SURGERY

- Not applicable

MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all-inclusive

- Activated charcoal to bind toxin in the digestive system
- Intravenous fluids: prevent dehydration, flush toxin out of the body, correct low blood sugar
- Vitamin K1
- Blood products: use is dependent on test results
- Diazepam, phenobarbital for seizure control as needed
- Methocarbamol as needed for muscle relaxation

FOLLOW-UP CARE

PATIENT MONITORING

- Hepatotoxic form: liver function and blood clotting checks
- Neurotoxic form: check temperature, respiratory function, body oxygen levels (known as “oxygenation”)

POSSIBLE COMPLICATIONS

- Hepatotoxic form: blood coagulation disorders (DIC), change in mental status due to ammonia buildup in the bloodstream (known as “hepatic encephalopathy”)
- Neurotoxic form: blood coagulation disorders (DIC), breakdown of muscles producing myoglobin (free muscle pigment) buildup (known as “rhabdomyolysis”), with the attendant myoglobin in the urine damaging the kidneys (kidney failure)

EXPECTED COURSE AND PROGNOSIS

- Prognosis—poor to guarded, often lethal

KEY POINTS

- Very fast-acting toxin, two main types of syndromes
- No known antidote

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