Colorado River Toad

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The Case

• Rainy summer evening

• Dog playing in backyard

• Look out to find they have something in their mouth…
Deterioration of Animal

- Profuse salivation within 30 minutes
- Vomiting
- Excessive panting
- Disorientation
While at Vet ER

- Seizures ensued
- Irregular heartbeat
- Passed away from respiratory arrest
What Happened?

- Absorption of toxins from toad’s skin through mucous membranes
- Varied symptoms resulting from numerous toxic compounds
- No immediate action taken to reduce potential exposure
Colorado River Toad

• *Incilius alvarius* (formerly *Bufo alvarius*)

• Also known as the Sonoran Desert Toad

• Toxins secreted from parotoid and tibial glands

• Nocturnal and most active from May-September
Up Close and Personal

*I. alvarius* Secretions

- Epinephrine, norepinephrine, dopamine
- Serotonin
- Bufogenins, bufotenine
- 5-MeO-DMT
  - Unique to *I. alvarius*
Probable Bufalin Mechanism?

5-MeO-DMT Mechanism

Reckweg JT, Uthaug MV, Szabo A et al. The clinical pharmacology and potential therapeutic applications of 5-methoxy-N,N-dimethyltryptamine (5-MeO-DMT). J Neurochem. 2022;162(1):128-46. Figure 3.
Recreational/Medicinal Use?

What Can Be Done?

Managing Signs/Symptoms

- **Salivation**
  - Atropine (pending cardiac assessment)

- **Arrhythmias**
  - Tachyarrhythmias
    - Propranolol
    - Lidocaine
    - Phenytoin
    - Procainamide
  - Bradyarrhythmias
    - Dopamine
    - Atropine

- **Seizures**
  - Benzodiazepines
  - Barbiturates

- **Severe arrhythmias**
  - Digoxin-specific Fab
Epidemiology

• No widespread data available regarding frequency

• Pet exposures may be more prevalent than expected

• Some human deaths attributed to accidental/recreational use
Conclusion

• Widespread potential for *I. alvarius* exposure in the Sonoran desert

• Signs/symptoms may vary depending on animal, exposure

• Reducing absorption of toxin mainstay of immediate management

• Basic supportive and symptomatic care as needed