# THE GREAT PRETENDERS

Presenter: Dr. Keyur Bhimani (Junior Resident)
Under Guidance of: Dr. Varsha Shinde (Prof)
Department of Emergency Medicine
DR. D.Y.Patil Medical College, Pimpri

# INTRODUCTION

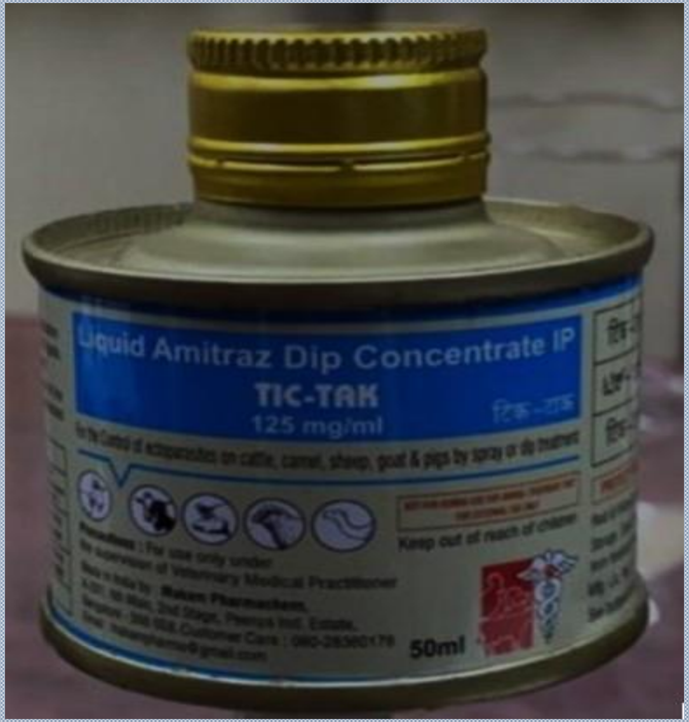
- "Agricultural region, three critical patients present with classic cholinergic signs suggestive of organophosphate poisoning. But the story hides deeper challenges..."
- Challenge: Are these all-organophosphate poisonings?
- Goal: Uncover the true nature of these ‘great pretenders.’

# CASE 1

- 53-year-old male, agriculture worker
- Unknown pesticide ingestion 3 hours prior
- Obtundation, bilateral small pupils, bradycardia 56 bpm, unrecordable BP, $O_2$ sat 85%, random blood sugar of 295 mg/dl
- No excess secretions, lungs clear
- Initial intervention: Atropine 6 mg IV + Oxygen therapy

# CASE 1—THE TWIST

- Labs: Serum cholinesterase normal, mild leukocytosis, elevated liver enzymes
- Patient Neurological condition decline : GCS drops to 4/15, pupils dilate, respiratory effort weakens
- ABG shows type II respiratory failure → Intubated
- Hypotension refractory to fluids →inotorpes infusion started
- Family presents pesticide container — Amitraz 12.5% EC



# CASE 1—CHANGE IN MANAGEMENT

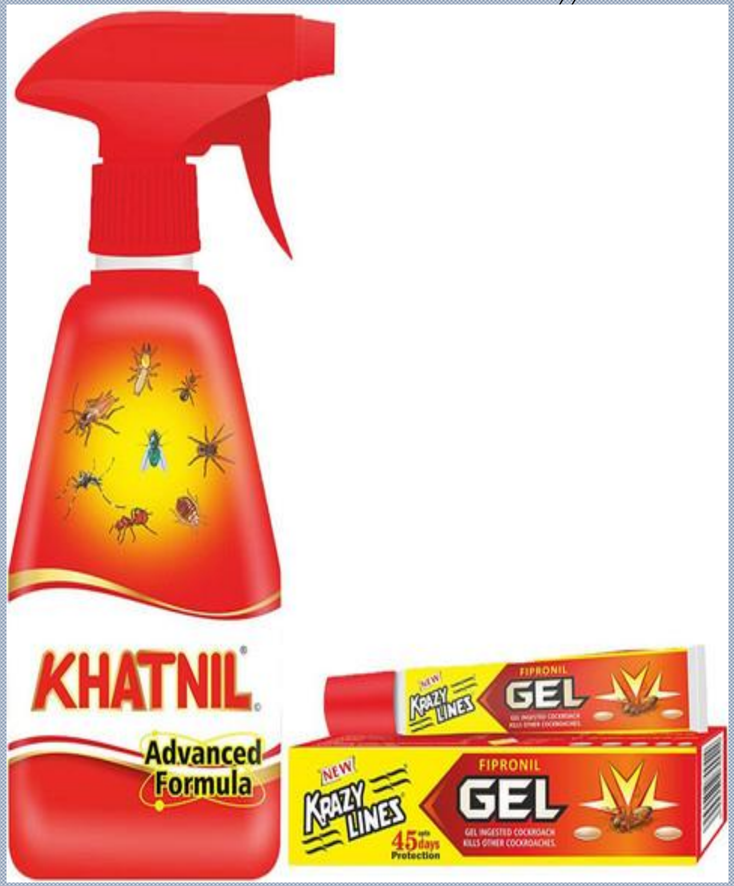
- Management revised after diagnosis: atropine discontinued (limited efficacy in Amitraz)
- Focus on supportive care: ventilation, vasopressors
- Gradual neurological recovery; extubated after 4 days with gradual recovery

# CASE 2 - PRESENTATION

- A 21-year-old male, insecticide ingestion [ “Khatnil spray” ]
- Vomiting, altered mental status, bilateral miosis, bradycardia 58 bpm, respiratory distress
- Crepitations, copious oral secretions
- Patient intubated; atropine given

# CASE 2—REVELATION

- Serum cholinesterase normal
- Further history reveal Fipronil gel ingestion
- Addition of benzodiazepines for seizures; continued supportive ventilation
- Extubated at 18 hours with good recovery

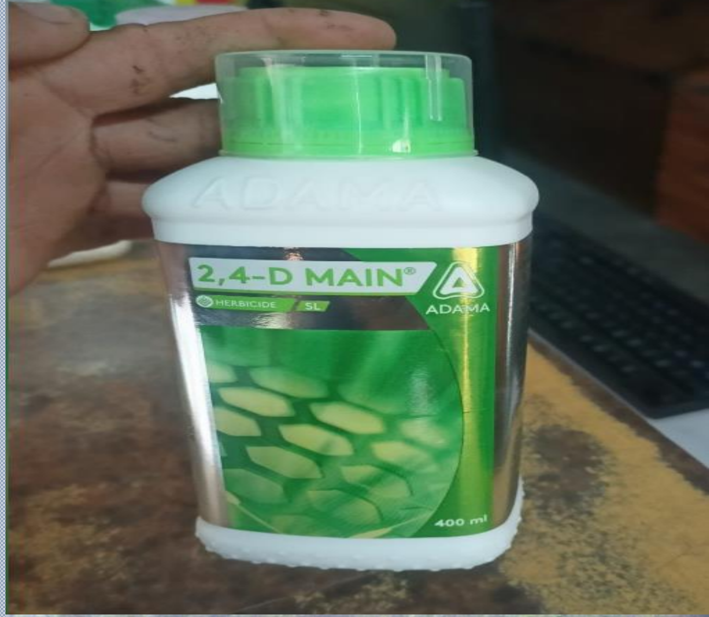


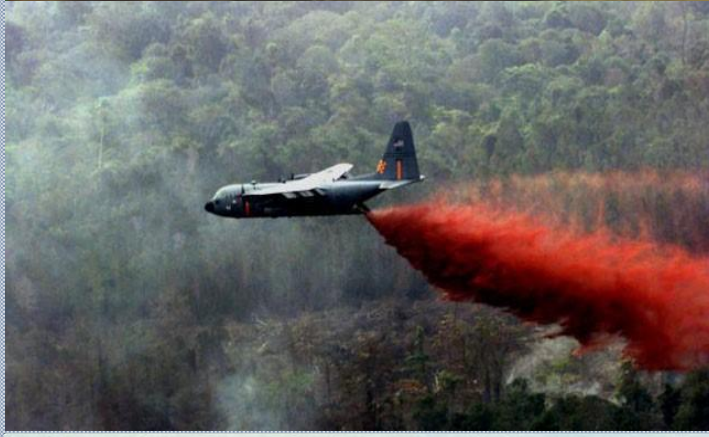
# CASE 3 - PRESENTATION

- 32-year-old male referred after atropine at outside hospital for suspected OP poisoning
- Vomiting, altered sensorium, bradycardia 52 bpm, hypotension 90/60 mmHg
- Copious secretions, constricted reactive pupils, decreased muscle tone, dark colored urine

# CASE 3 —
# THE DIAGNOSTIC GAME CHANGER

- Persistent symptoms despite atropine raise suspicion
- Serum CPK ordered — result: 12,400 U/L (marked rhabdomyolysis)
- Blood gas analysis shows Metabolic acidosis
- Family provided container: 2,4-D herbicide confirmed 2,4-Dichlorophenoxyacetic Acid
- Diagnosis changed to 2,4-D poisoning **(AGENT ORANGE)**



# CASE 3—ADAPTED MANAGEMENT

- Atropine stopped (ineffective in 2,4-D)
- Intravenous hydration and urinary alkalinization with sodium bicarbonate initiated
- Close renal function monitoring;
- clinical and lab improvement over 72 hours
- Discharged in stable condition

# The Differential Diagnosis Table — Who's Who?

| Feature | Amitraz | Fipronil | 2,4-D | Organophosphates |
|---|---|---|---|---|
| Mechanism | A2 adrenergic agonist | GABA receptor blocker | Mitochondrial myotoxicity | AChE inhibitor |
| Secretions | Minimal/absent | Present | Copious | Prominent ("SLUDGE") |
| Pupils | Miosis → mydriasis | Miosis | Miosis (reactive) | Pinpoint, fixed |
| CNS | Depression → coma | Seizures possible, agitation | CNS depression, hypotonia | Confusion, seizures |
| Cholinesterase | Normal | Normal | Normal | Decreased |
| CPK | Normal | Normal | Elevated significantly | Normal |
| Atropine Response | Limited (bradycardia) | Variable | None | Dramatic improvement |
| Essential Tx | Support + dopamine | Support + benzos | Support + Urinary alkalinization | Atropine + oximes + support |

# DISCUSSION — DIAGNOSTIC CHALLENGES IN PESTICIDE POISONING

- Organophosphate (OP) poisoning is common but not always the culprit.
- Amitraz, Fipronil, and 2,4-D pose a significant diagnostic challenge as mimickers.
- Accurate differentiation impacts management and outcomes.

# SUMMARY & DISCUSSION

- Mimickers closely resemble OP toxidrome but require distinct management
- These “great pretenders” test clinical vigilance
- **Accurate history and pesticide identification** are critical
- Avoid reflex treatment—rather, tailor therapy to clinical and lab data
- Understand limitations of atropine and oximes—monitor clinical response
- **Supportive and tailored care** essential to improve outcomes

# TAKE-HOME MESSAGE

- Physicians Maintain broad differential—don’t rush to label as OP poisoning
- Employ ABC approach rigorously for initial resuscitation
- Confirm diagnosis with targeted labs and history whenever possible
- Recognize mimickers to avoid unnecessary antidote usage and optimize patient care."

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# THANK YOU