LANTANA CAMERA ASSOCIATED HEPATIC AND RENAL TOXICITY IN BULLOCKS – A CASE REPORT

DR. B. ANIL KUMAR
ASSISTANT PROFESSOR
COLLEGE OF VETERINARY SCIENCE
KORUTLA-505 326
KARIMNAGAR DISTRICT, TELANGANA.
Overview

- Lantana was introduced in India in 1807 as ornamental herb.
- Species effected: cattle, sheep, goat, horses, pigs, wild animals, rabbit, guinea pigs
- 1st poisoning reported in Australia (Townville) in 1910
- 1st Incidences of Poisoning in buffalo (Kangra valley, H.P.), sheep, goats (Rampur bushier)
- Toxic principle: Lantadine A,B,C,D (Triterpanoid) effect bile canaliculi
- Known to cause Hepatotoxicity, nephrotoxicity and photosensitization.
Toxicodynamics

Ingestion of plant
Absorption from rumen and S I
Liver
Metabolism
Secretion of metabolates in to bile
Injury to bile canalicular membrane
Cholestasis, hepatitis
Retention of bilirubin, phylloerythrin and ruminal stasis
Jaundice
Photosensitization
pH alkaline (NH$_4$ & N$_2$)
Renal damage
Symptoms

- Anorexia
- Ruminal motility ceases up after 6 hr and atony seen after 24 hrs
- Complete constipation/impaction
- Rumination ceased
- Dehydration
- Icterus after 2-4 days
- Skin changes due photosensitization
- Death due to hepatic and renal failure
Diagnosis

• History

• Clinical sign

• Laboratory test:
  
  Liver: ALT, AST, ALP, GGT & Bilirubin
  
  kidney: BUN & Creatinine,

• HPLC: Diagnosis of lantadine in the ruminal content, peaks on chromatogram 2.43 min and 7.01 min (Narendra Vyas, and Ameeta Argal, 2014)

• Thin layer chromatography
PARTICULARS OF OWNER & ANIMAL

• Case No. 69 & 70 Date: 11-07-2014

• Owner Particulars: S. Ravi,
  Chaulamaddi Villaga, Korutla Mandal
  Karimnagar district, Telangana.

• Animal Particulars:
  Species : Bovine  Breed : ND
  Sex : Male (Bullock)  Age : 10 years
  Colour : White
History

• Two Bullock were brought to the Teaching Veterinary Clinical Complex, College of Veterinary Science, Korutla with the history of anorexia and voiding scanty faeces since 3 days.

• Owner has reported that 4 days back, unknowingly two bulls had entered the near by village and were there for one entire day.

• Next day owner found them grazing on lantana plants.

• From that day onwards they were not taking feed and voiding scanty faeces.

• Owner has taken them to near by Veterinary hospital for 2 days but there was no improvement. There treated with rumentorics and B-complex injections.
CLINICAL EXAMINATION

- Detailed clinical examination has revealed,
  
  Temp : 102 °F
  Pulse : 84/ minute
  Heart rate : 47 beats/ minute
  Resp. rate : 37/ minute
  C.M.M. : Icteric (Moreicteric in one animal)
  B.M.M. : Normal
  Rumen motility : Atony
  Rumen liquor pH: 8.0
  Lymph nodes : Normal
General body condition : Lean and severely dehydrated
Demeanor : Dull and very weak
• Profuse frothy salivation also noticed
• We have collected dung, urine and blood.
• Faecal sample is negative for parasitic ova
• Peripheral blood smear is negative for haemoprotozoans
• Urine examination:
  • Colour : Deep yellow
  • Odour : Slight pungent
  • Hay’s test : positive for bile salts
SERUM ANALYSIS

- ALT values (IU): 74.3 IU/micro lit. (14-38)
- ALP values (IU): 235.3 IU/micro lit. (90-170)
- BUN values (mg%): 41.26 mg (20-30)
- Serum Creatinine (mg %): 4.39 mg % (1-2)
- Serum Bilirubin (mg %): 0.84mg % (0.1-0.5)
- Indicating both hepatic and renal insufficiency.
TREATMENT

• Animals are treated with the following medication

  ❖ Inj. DNS 5D @ 1350 mL i.v
  ❖ Admin. of activated charcoal @1.0kg in 10 liters of water
  ❖ Magnesium sulphate @50gram p.o

  ❖ Inj. Histaminal 20 mL i.m
  ❖ Inj. Enrofloxacin 20 mL i.m
  ❖ Inj. Melonex 15 mL i.m

  ❖ Inj. Belamyl 20 mL i.m

  ❖ Rumentas bolus @ 4 boli daily for 3 days
  ❖ Prescribed Liv-52 syrup @ 50 ml orally BID for 15 days.

1st Day
• Bullocks started defaecating by 2\textsuperscript{nd} day and started taking green grass from 4\textsuperscript{th} day onwards and recovered fully by 7\textsuperscript{th} day.
THANKYOU