Unit : Hypomagnesaemic Tetany in Cattle
Lesson : 3

Diagnosis and Differential diagnosis

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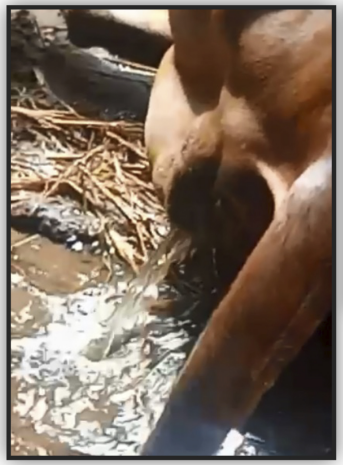
Clinical Pathology

1. Serum magnesium analysis
   - Normal - 1.7 to 3.0 mg/dL
   - Subclinical hypomagnesemia -1 and 2 mg/dL
   - Tetany - below 1.2 mg/ dL
2. Concurrent Hypocalcemia (5 to 8mg/dl) and hyperkalemia >5mg/dl.
3. An acute-phase inflammatory response - Leukocytosis and increased numbers of neutrophils and monocytes

Urine Analysis – xylidyl test

- **Urine magnesium concentrations below 1.0 mg/dL (0.4 mmol/L) indicate a danger for tetany**



R1.	**Buffer**	
	Tris Buffer	500 mmol/l, pH 11.25
	EGTA	90 µmol/l
	Sodium Azide	0.09% w/v
R2.	**Xylidyl Blue**	
	Xylidyl blue	0.28 mmol/l
	Detergent	
	Sodium Azide	0.09% w/v

Mg Concentrations in CSF

- In normal animals CSF concentrations - 2.0 mg/ dL.
- Magnesium concentrations in CSF of 1.25 mg/dL - tetanic cows with hypomagnesemia.
- CSF is diagnostic if collected within 12hrs of death.

Vitreous Humor

- **Vitreous humor - < 0.55 mmol/L up to 48 hours after death indicate the presence of hypomagnesemia**
- **Addition of formaldehyde 4% to vitrous humor will enabled estimation upto 72hrs of sampling.**

Differential Diagnosis

- Lead poisoning
- Rabies
- Nervous form ketosis

Lead poisoning

Rabies

Differential Diagnosis

Bovine spongiform encephalopathy

Nervous form ketosis

Thank you