LA Clinical Case Diagnosis by Field Level Methodology

-As a LA practising field Veterinarian

Learning is the continuous process

CaseDiagnosis-1-Approaching a case of Nasal Bleeding in Cattle

Diagnosis?
-Epistaxis!! -**an uncommon condition in cattle**

P/E-unilateral/Bilateral?

Test to Perform

20min whole Blood Clotting Time(**20WBCT**)-To rule out **Snake Envenomation**

Differential Diagnosis

1. **Local Trauma**
2. **Nasal obstruction-F.body/Ethmoid Carcinomas**
3. **Nasal Granuloma- S.nasale**
4. **Snake Bite-Hemotoxic- vipers**
5. **Anti-Coagulant Rodenticides**
6. Coagulopathies/Coagulation Disorders
7. Thrombocytopenia
8. Exercise Induced pulmonary Hemorrhage
9. CHF-especially in Horses
10. Metastatic Lung Abscessess/Vena caval Thrombosis

-Local Trauma-

- Parentral Hemostatic -inj Tranexamic Acid @5-10mg per Kg IV or IM
- NSAID
- CPM

After Recovery

Nasal Schistosomiasis

How to Diagnose it and Treatment options Available

Diagnosis

- On P/E - Cauliflower- like granuloma like growth-Snoring disease
- Nasal Wash –diagnosis of boomerang shaped Eggs

Treatment

- **Anthiomaline (**Lithium Antimony Thiomalate**)** is the drug of choice-given IM ,weekly Intervals for 3 weeks
- **Praziquantel** (25mg/kg) is highly effective ,2 Treatments required 3-5 wks apart

Snake Envenomation Treatment

Treatment- if 20WBCT fails..

- 40 ml of polyvalent snake venom antiserum in 2000 ml NS-Slow IV (each antivenin package contains 10 mL of antivenin) So 4 Vials initially Needed
- Corticosteroids-**Dexamethasone** phosphate 0.5 mg/kg IV
- Fluid Therapy- 5% dextrose IV and
  5 ml of Tetanus toxoid - as single dose.
- Antibiotics-Ceftiofur or Potentiated Aminopenicillins IM for 5days
- **NSAIDs and AntiHistamines are CI (except D**iphenhydramine hydrochloride (10–50 mg, SC or IV, once)as it will potentiates the toxic action of the venom.

Anti-Coagulant Rodenticides

Source- Accidental Ingestion of Rat Bait/or Intentional poisoning (**brodifacoum-coumarine grp)**

Treatment-

1) Oral Adm of Activated Charcoal at 1g per Kg as **Universal Antidote**

2) **Antidote- Vitamin K1 (Phytomenadione)**is used **subcutaneously** at 1-2 mg/kg.- **70Amp** Needed. (1Amp - 55rs)-Available Online

3)Vitamin K3-Synthetic Menadione-Not useful.

Intentional Poisoning using Rat Baits

DD - Anthrax, Rodenticide poisoning, Snake Bite- blood doesn't clotted
-Acute death- Anaplasmosis, clostridial diseases, Acute Leptospirosis
-Acute Bloat, Hypomagnesimia

Case diagnosis-2-Approaching a case of Recumbent Cow/Downer Cow Syndrome

Important Metabolic Elements and their Diseases

Cellular composition-intracellular(Mg,K,Po4) and Extracellular

Downer Cow?- Peripartum Cow- Alert/Creepers/Non Alert-INTERRELATIONS

- Hypocalcemia
- Hypocalcemia with Hypophosphatemia
- Hypophosphatemia with Hypokalemia and HypoMagnesemia

- Physical injury during Parturition-CALVING PARALYSIS

Treatment protocol for Metabolic disorders.,

- **Never** give Calcium Oral Gel prep., in a Recumbent or Downer Cow (it is Contra-Indicated)
- **Never** Give **too much Bottles** of Calcium in unresponsive Cow
- **Never** give **Phosphorous IV** along with CBG and Mifex IV
- **Never** give **Magnesium** on day 1 itself
- Never overdose oral KCL-it will induce **HypoMagnesemic Tetany**
- **Never** give **Isofluperidone** in Recumbent Cow so as for Treating it for Ketosis
- **Never** Give **Dextrose hypertonic solutions** 25% or 50% in an Active Alert Downer Cow
- **Never** Give **Anti bloat Agents** assuming that the DC has Bloat-it's a Postural Bloat
- **Never** Give too much of Antihistamines **Phenaramine Maleate** Recommended Dosage(0.5mg per kg…ie..5ml-10ml)

Recumbent Cow

1. Acute Ruminal Acidosis
2. Toxemic Cdts-Coliform Mastitis,Metritis
3. Peritonitis
4. EF –Hypocalcemia-Lameness
5. Recumbency due to Anaemia/Hypoproteinemia
6. Recumbency due to Debility and Dehydration
7. Recumbency during Late Term Pregnancy
8. Oestrus Induced-Hypocalcemia
9. Recumbency due to Heat Stroke or inclement weather cdts.
10. Recumbency in calf

Downer Cow Syndrome-post Calving

Treatment Protocol administered in Downer Cow Syndrome

- **Inorganic Phosphorous**–Parentral-NOVIZAC 50ml SID 0r Urimin 60-70ml IV
  -Oral SAP(P Soda or Sodaphos) @ 50g bid for 5days

- **Potassium Chloride @ 0.2-0.4g per Kg bt wt**-ORAL
  Epidural Inj of Thiamine +Dexamethasone -Intracellular Potassium Retension(IVJ 1970 by Rao)

- **PAIN MANAGEMENT**-Tolfenamic Acid @ 2mg per kg/Flunixin @ 2mg per kg IV (Complications of Overdosage)

- **Anti-Histamines**-0.5mg/kg-why!?

- **Methylated Cobalamine(B12)** IM-Why!?-

- **Supportives like Vitamin Ad3E** on 3 days once-Why!?

- **Oral Magnesium Sulphate**-50g bid for atleast 5days-why!?

- Oral Rehydration-alert cow,parentral Fluid Therapy in depressed Recumbent Cows
- **ASSISTED LIFTING USING SLINGS**-Most IMPORTANT in progress of the Treatment

Inorganic phosphorous Vs Organic phosphorus

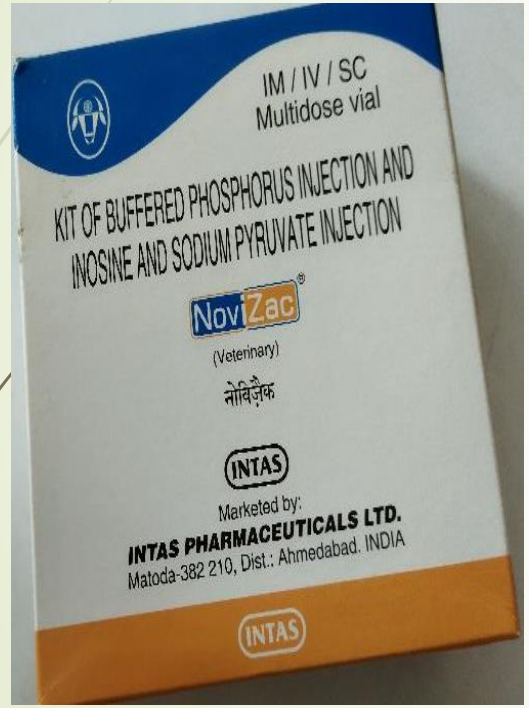
- **INORGANIC PHOSPHOROUS-as phosphates**
- **INJ NOVIZAC 50ml** (INTAS)-as Phosphate- Single dose for 450kg btwt IV
- **INJ URIMIN -** (SAPas ip8%w/v) (VIRBAC)-50ml 3 doses 12hrs interval IV
- **INJ ALPHOS-40**(SAPas ip 8%w/v)
- **Oral-Sodaphos (SAP)-**zydus-50g bid
- **Oral P-Soda** (SAP)-Hexter-50g bid

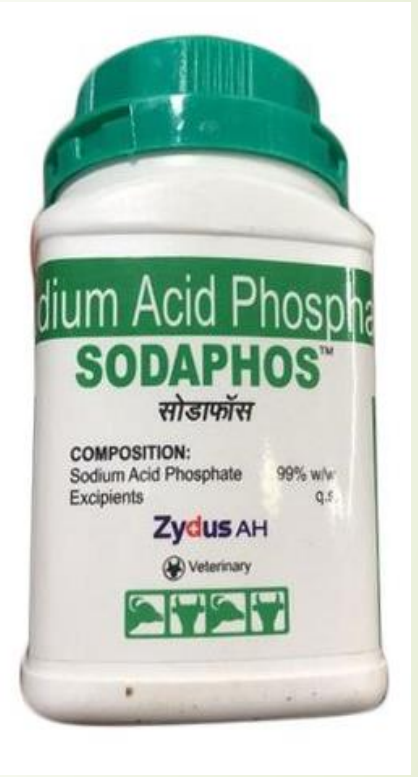
- **ORGANIC PHOSPHOROUS-phosphonic acids and phosphan form**
- **INJ TONOPHOSPHAN VET**-MSD (SS4DM2MPPA as organic p 20%)
- **INJ T-PHOS**(SS4DM2MPPA as organic p 20%)-zydus
- **INJ CATOSAL**(Butaphosphan +B12)-bayer
- **INJ INJECTIPHOS**(Butaphosphan +B12)-zydus
- **INJ SYNKOMET** (Butaphosphan +B12)- intas

CLINICAL POINTS – Phosphorous usage

- INJECTABLE/ORAL-**ONLY INORGANIC PHOSPHATES in all cases**
- It is **undesirable** to adm parentrally Sodium Acid Phosphate(SAP) along with Calcium and Magnesium salts **IV-Rapid infusion-precipitation** of Ca and Mg salts
- IV adm of **PHOSPHATES** can be done after 2hrs where the animals not able to take oral Medications
- Parenteral adm of **organic phosphorus** (inj toldimphos, butaphsphan, phosphite, or hypophosphite) as **phosphite** are unsuitable for increasing plasma phosphorus
- Phosphorus depletion may **ALSO occur** after oral or parenteral carbohydrate adm and after parenteral insulin administration as a result of increased cellular phosphorus uptake in combination with glucose.
- **Rapid Infusion of Phosphates** –low bioavailabilty-after 2hrs-it will be excreted via Kidneys-so little parentral usage only
- **PHOSPHITES**- Metabolic Modifiers-can be used in other conditions like SI

Kits for Phosphorous supplemention





Clinical points –**Potassium chloride usage**

- **Prolonged Recumbency**—Increase in permeability of Sarcoplasmic membrane-loss of K from intracellular to Extracellular –Excretion via Kidneys—Hypokalemia (**andrew et al, 1992)**

- **Muscle weakness** –Lowers resting membrane potential –decreased Excitability of NM tissues-Downer Cow syndrome **(Radostits et al,2000)**

- **Other Cdts causing Hypokalemia**

- Over dosage of **Bicarbonate solutions in** Acute Ruminal Acidosis-Alkalosis-Renal Excretion

- **Multiple dosing of Isofluperidone** in Ketosis-Mineralocorticoid activity-Renal Excretion
- Fluid Therapy in diarrhea-Enteritis**-ABOMASAL STASIS**-Hypokalemia

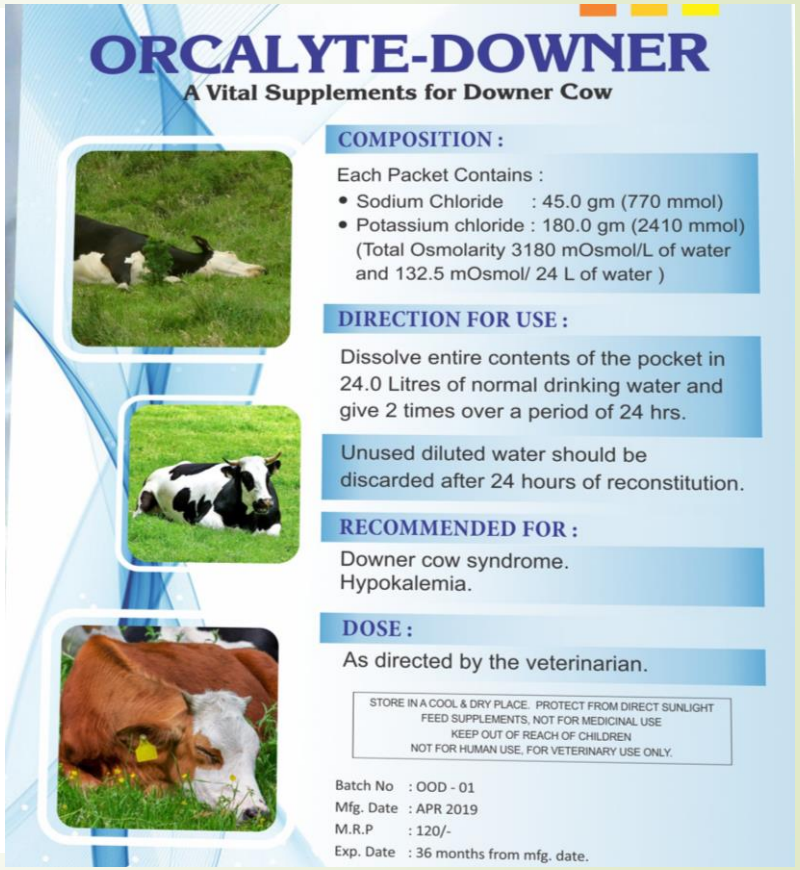
- **Dosage calculations-parentral Vs oral**

- **Oral safe**-0.4g per kg-bid ie 120g bid-severe Hypokalemia
- Injectable-**unsafe**-only after Lab investigations-cardiac arrhythmias-VF and Death.

Available potassium kits

Lab Grade KCL
500gms-MRP 232

200ml has only 20g-
MRP 60rps



Orcalyte Downer-MRP 120

After Recovery

Recumbent Cow due to Acute Ruminal Acidosis

Acidosis induced Hypocalcemia

Complications of Acidosis

- PEM
- Hepatitis(Liver Abscessation)
- Laminitis
- Rumenitis
- Secondary Hypocalcemia
- Caudal vena cava Thrombosis

Acute Ruminal Acidosis-clinical points

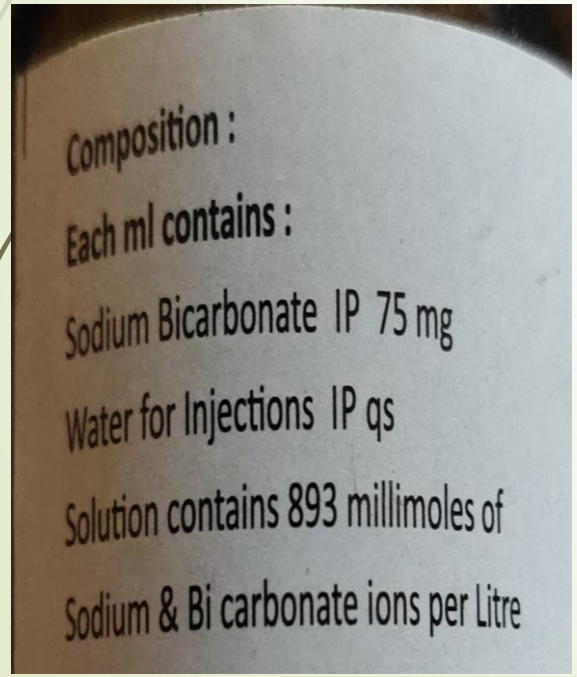
- Early the Treatment –Faster the recovery---**HR is prognostic Indicator**
- **Adm Of oral Antacids**-Sod Bicarbonate @ 1g per kg bt wt-5litres of water(one quarter of initial doses can be given every 6 hrs)
- **Primary Treatment**---Sodium Bicarbonate IV in NS–dose Calculation
- If IV Sodium Bicarbonates are used,,it is undesirable to adm oral Antacids
- Ab targeting Gram positive S.bovis esp..**Procaine Penicillin G**, OTC or ST
- NSAIDs -Flunixin for Endotoxemia and Antihistamines and Thiamine @ 10mg per Kg q24hrs for 3days
- Fluid Therapy for Rehydration-RL and NS---Strictly No DEXTROSE
- Acidosis induced Hypocalcemia-Atonic Rumen-CBG SC/IV

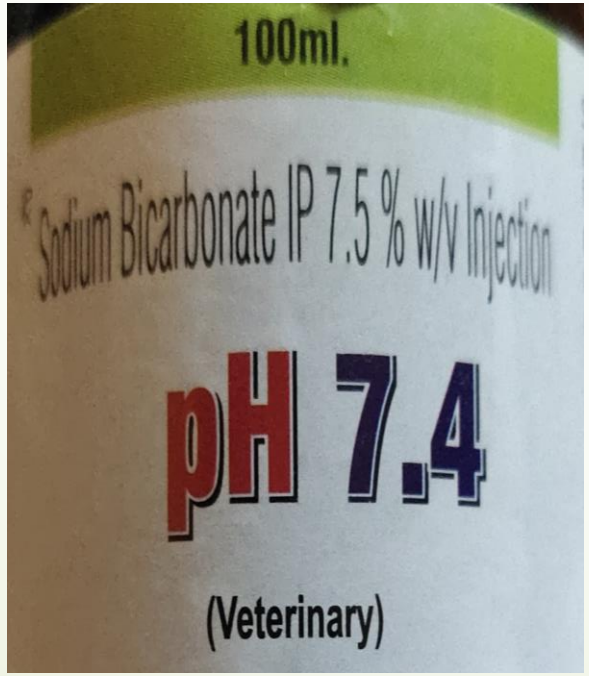
Dose of Sodium Bicarbonate –Mild/Modeate/Severe

- Method 1

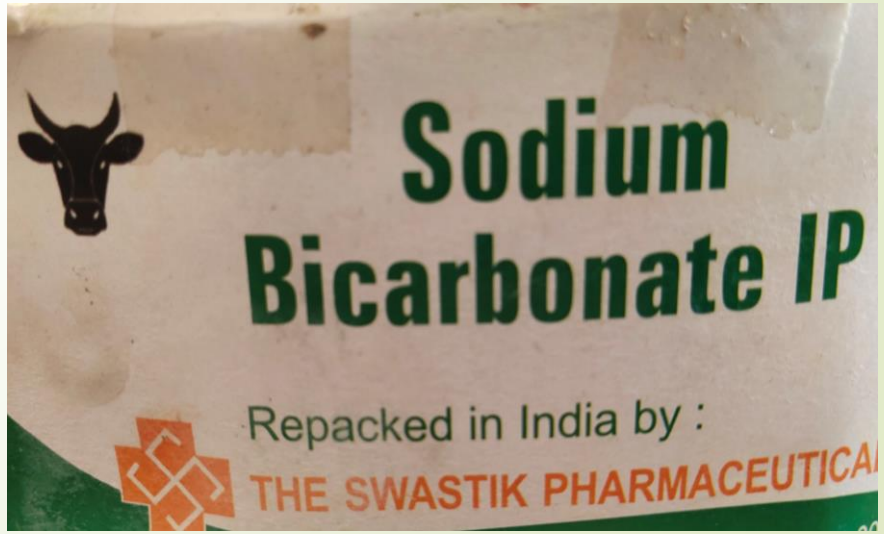
0.3*Base deficit*body weight = meq of NaHCo3

Each ml has 0.9meq of NaHCo3 or each ml has 75mg





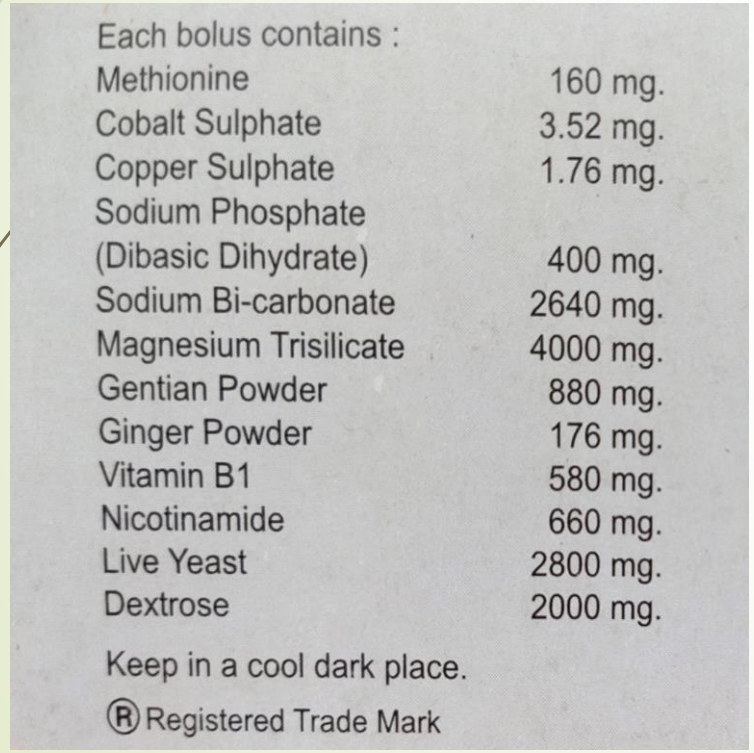
- Method 2
- **Thumb Rule**
- **For 500kg cow,Adm 125g of Sodium Bicarbonate in 10litres of isotonic solution Iv for every 2% dehydration-10-20mins**

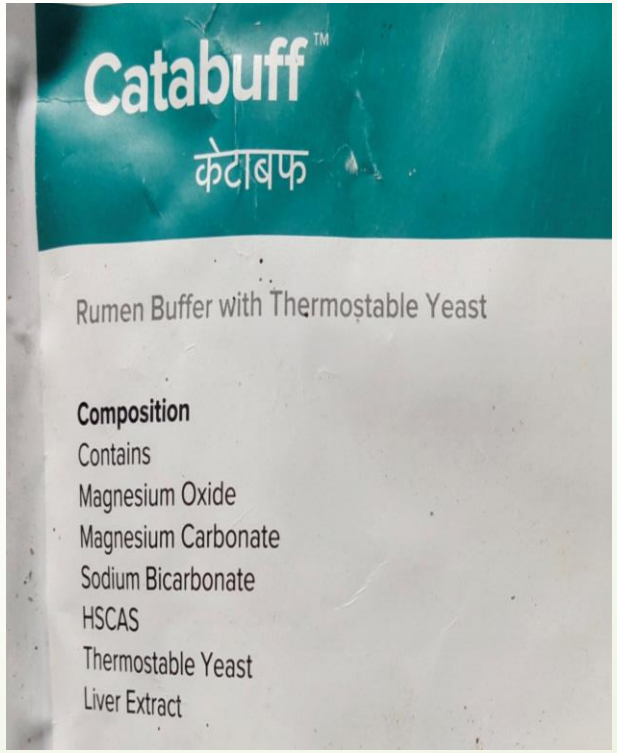


Available oral Antacids

1-Powder Catabuff (Hester)-205MRP

2-Bolus Floratone Forte (Concept Pharma)-105MRP





Downer due to Toxemic Cdts- Mastitis /Metritis

Clinical Points –Coliform Mastitis or Metritis

- **Aggressive Fluid Theraphy**-to dissolve EndoToxins
- Inj Oxytocin IV –to strip of infected Milk and faster involution of uterus
- Antibiotics-3rd or 4th Gen Cephalosporins with/without Enro LA-colifrom Mastitis
- Ceftiofur sodium -Metritis
- NSAIDs-Flunixin /Ketoprofen
- Vitamin AD3E and Vitamin C (5-10mg per kg)on alternative days
- Bol Serratiopeptidase-Anti edematic ,analgesics,Fibrinolytic and Caesinolytic properties-2bolus bid
- Tab Tissue Aid-proteiolytic property- 3 tab bid for 3-5 days

Recumbency due to Dehydration and Debility

- Treatment opted

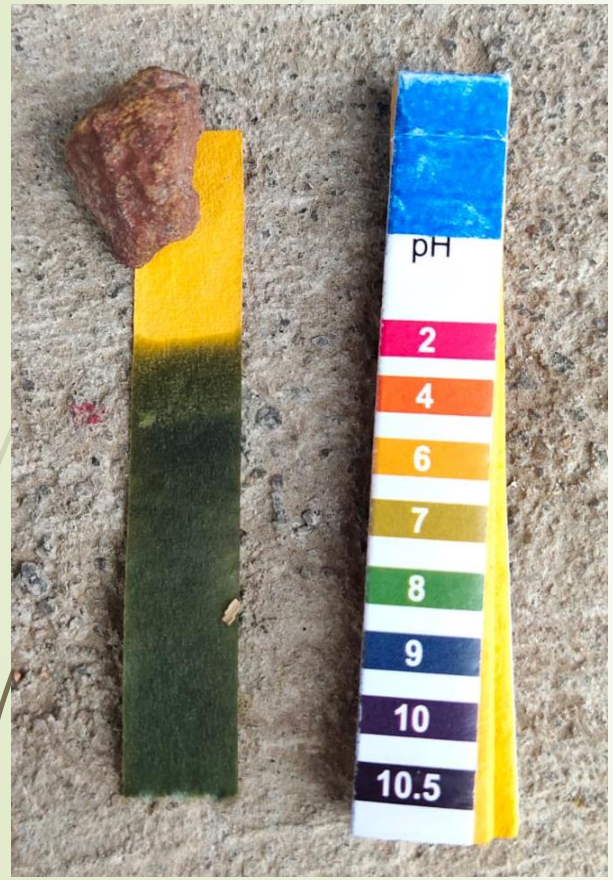
- Antibiotics-Gut Acting-Potentiated ST
- Antihistamines
- Metronidazole IV

- Multiple Electrolyte solutions-IV

- Oral Electrolyte powders-Electrobest /Intalyte

- Other protocols same as DC

Recumbency during Late Term Pregnancy



- **Differential From other Obstetrical cdts..**

- **The urine pH** of near-term prepartum cow is good indicator for prevention of MF.

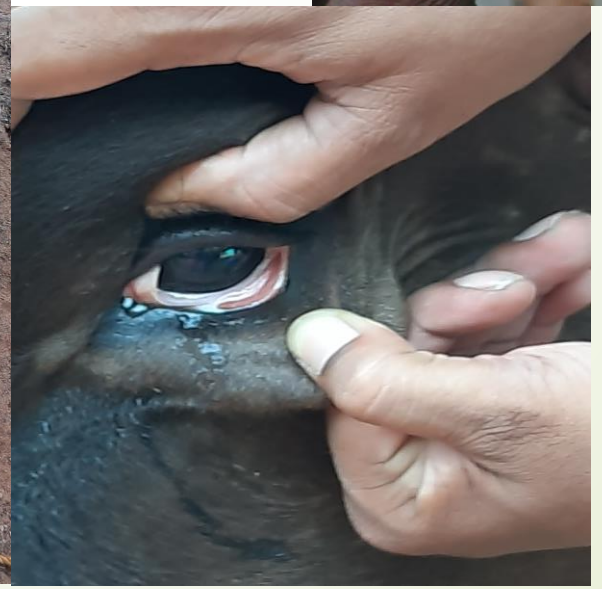
- By testing urine pH with pH paper,if it is **acidic(6.8-7) it is safe**..if it is alkaline(>8),it is **unsafe**..

- supplement with **Ammonium chloride** or **Magnesium Sulphate 25g** initially and increasing Upto-100 gms daily for last 10days. (Inducing mild Acidosis enhances Calcium Mobilization and Ionization)
  (Ref-Vet Medicine Otto M.Radostits et all. 9th Edi)

- Treating with **DCAD PREPARATIONS POWDERS**-INTABOLYTE/HYPORID/METABOLITE

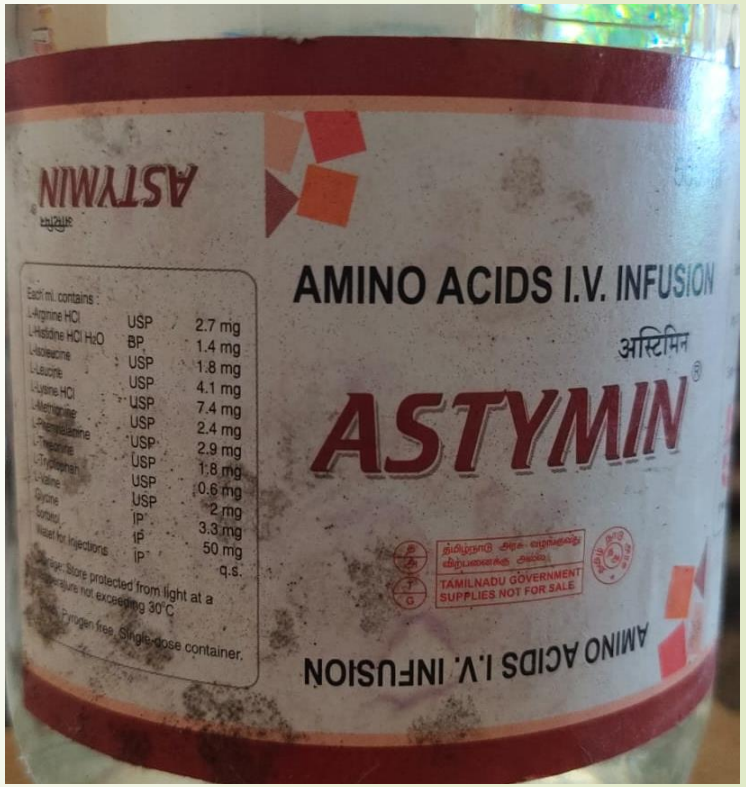
- Pain Management using NSAIDs

Recumbency due to Anaemia and Hypoproteinemia



Clinical points –Anaemia and Hypoproteinemia

- Diagnosing the Primary etiology-HPD commonest
- Oral Liver Tonics
- Oral Hematunics-Fe,Cu,Co,B12
- Oral phosphorous and Mineral mixtures containing Cu,Co,and Zn
- Blood Transfusion in severe cases
- Amino Acid Suspensions-Expensive



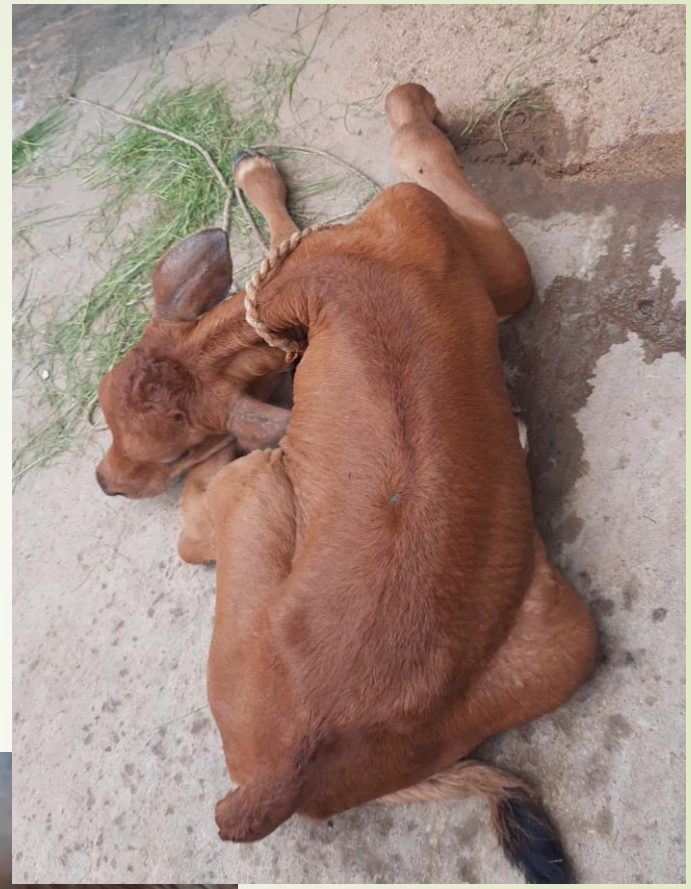
Blood Transfusion

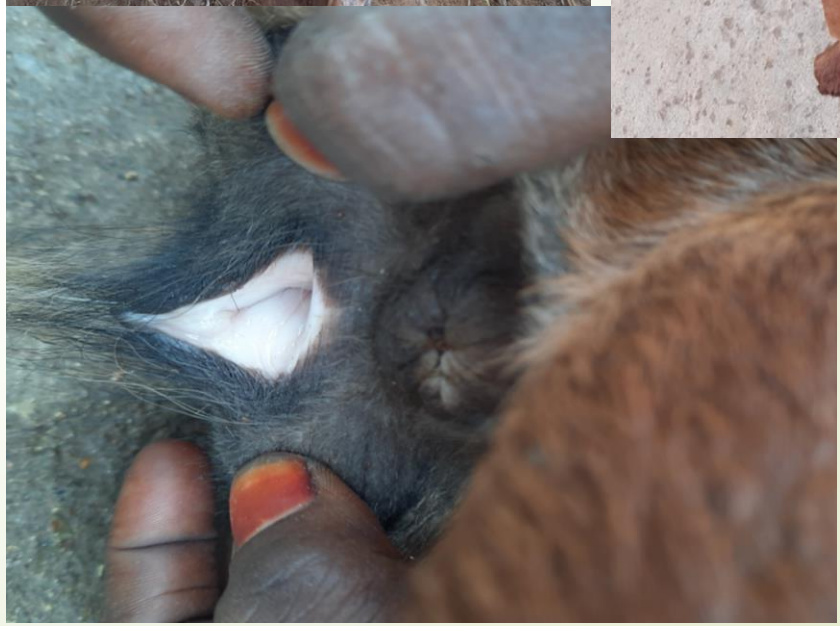
Clinical points-Blood Transfusion

- Indicated for Animals whose **PCV** < 10-15%(Normal-24-46%) or **Hb**-<3g/dl(Normal-8-15g/dl)
- Simple Method using **2litre Uro Bag**
- Check Donor and Recipient Compatability using **Slide Agglutination Test**.
- Collect the Blood From Donor in 2litre Uro Bag filled with Anti Coagulant – **Sodium Citrate-3.8%** ..per time 2-4 litres can be collected(**10-15ml per Kg of Donor**)
- **Dose of Sodium Citrate 3.8%** is 100ml for 900ml Blood ..so **2litres -200ml** is needed
- **Emergency Drugs**-Adrenaline 1:1000(1mg/ml)-5ml
- IV Needle 16/18G or Blood Collection Needle(microchip needle)
- Adverse Reaction-is due to Hemolysin and Not due to Agglutinin.

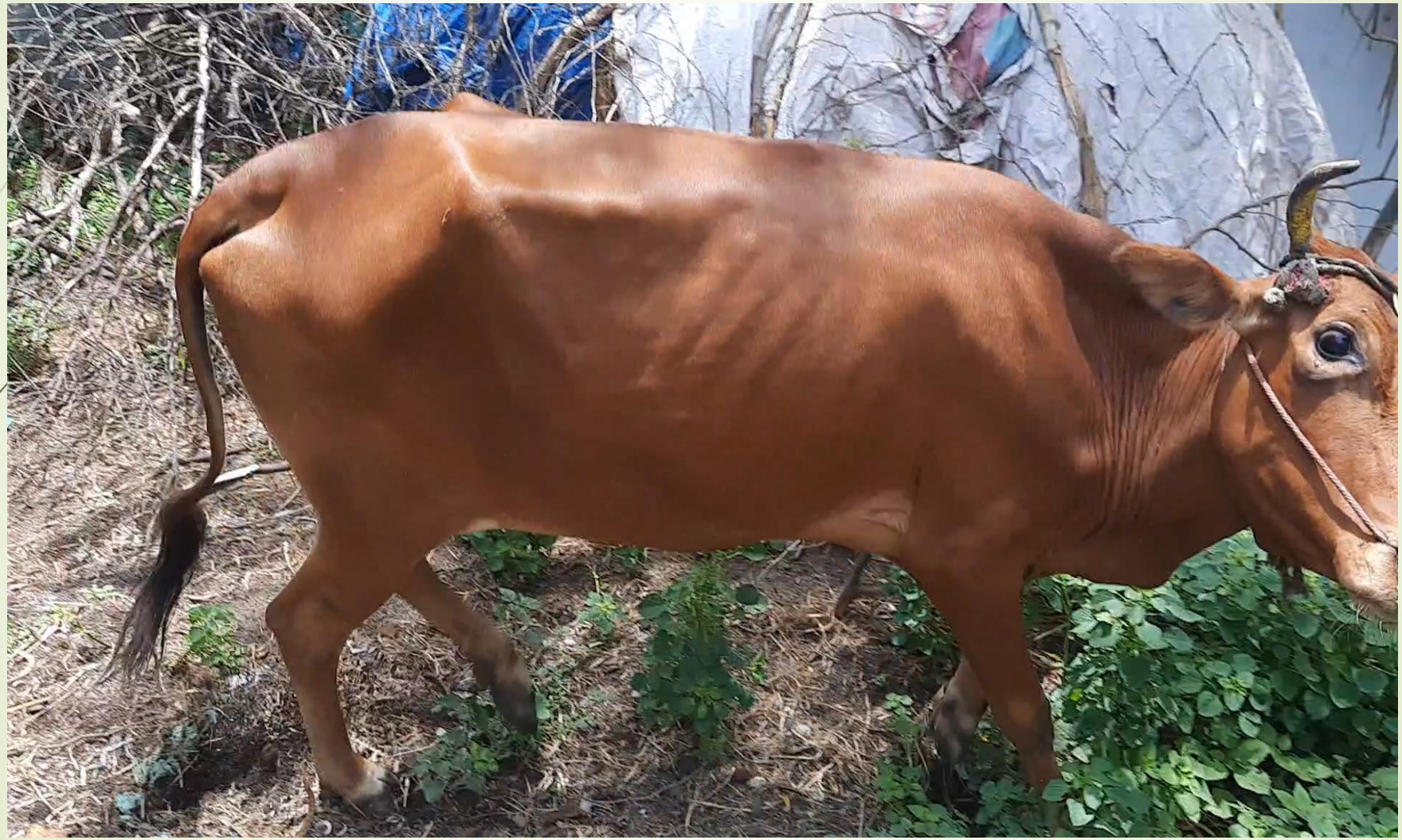
Recumbency in Calves

- Hypovitaminosis A
- PEM
- Worm Load
- Debility and Dehydration
- HypoMagnesimic Calves
- HPD





Approaching a case of Staggering Gait and InCo-ordination



Fine Muscel tremors to Convulsions

HYPERSENSITIVITY TO EXTERNAL STUMULI-HYPERESTHESIA

Differential

- Nervous form of Ketosis
- HypoMagnesemia
- PEM/Hypovitaminosis A
- Listeriosis
- Cerebral form of HPD…BT or Babesiosis,Tryps
- Plant poisoning-Sorghum
- Lead poisoning
- Tetanus
- Rabies

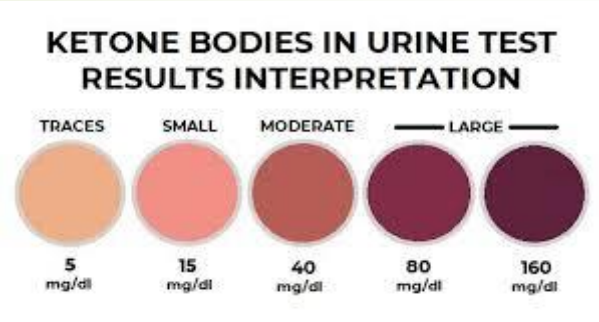
KETOSIS VS HYPOMAGNESEMIA

- Walking in circles
- Head pushing
- Apparent blindness
- Vigorous licking
- Aimless move and wandering
- Chewing with salivation
- Prefer only roughages than concentrates
- Responds to Treatment
- PICA

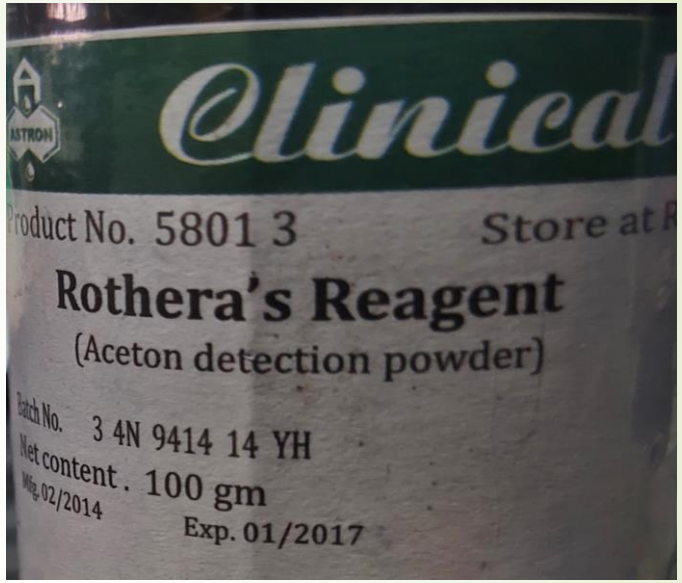
- InCoordination
- Hyperesthesia
- Tetany
- Tonic Muscular spasms
- Convulsions
- High Fatality if not Treated early

Cow side Tests

- **Ketosis**
- Rotheras Test-



- Hand Made devices-Glucometer
- Normal Value-60-80mg/dl



Ketosis-Clinical Points

- The dose recommended is **500 mL 50% dextrose IV**.Administration of IV dextrose leads to an immediate hyperglycemic state, lasting approximately 2 hours(50g per 100ml…**250g in 500ml)…D25 2bottles enough**
- **Dose of DEXAMETHASONE-Total Dose-20mg/Cow…5ml enough(Reduces Tissue Glucose uptake and Milk Production)**
- Oral commercially available Glucose precursors-and **NOT ORAL JAGGERY or MOLASSESS-VFA-Acidosis**
- **Vitamin B12** (cyanocobalamin) and **phosphorus** (butaphosphan) -supportive therapy for ketosis since they are **integral to the Krebs cycle**.-**Inj INJECTIPHOS ZYDUS**
- **Insulin Therapy(200-300IU Sc) q24-48 hrs per Animal In Non Responsive or Recurrent Cases**

Hypomagnesemia-Clinical Points

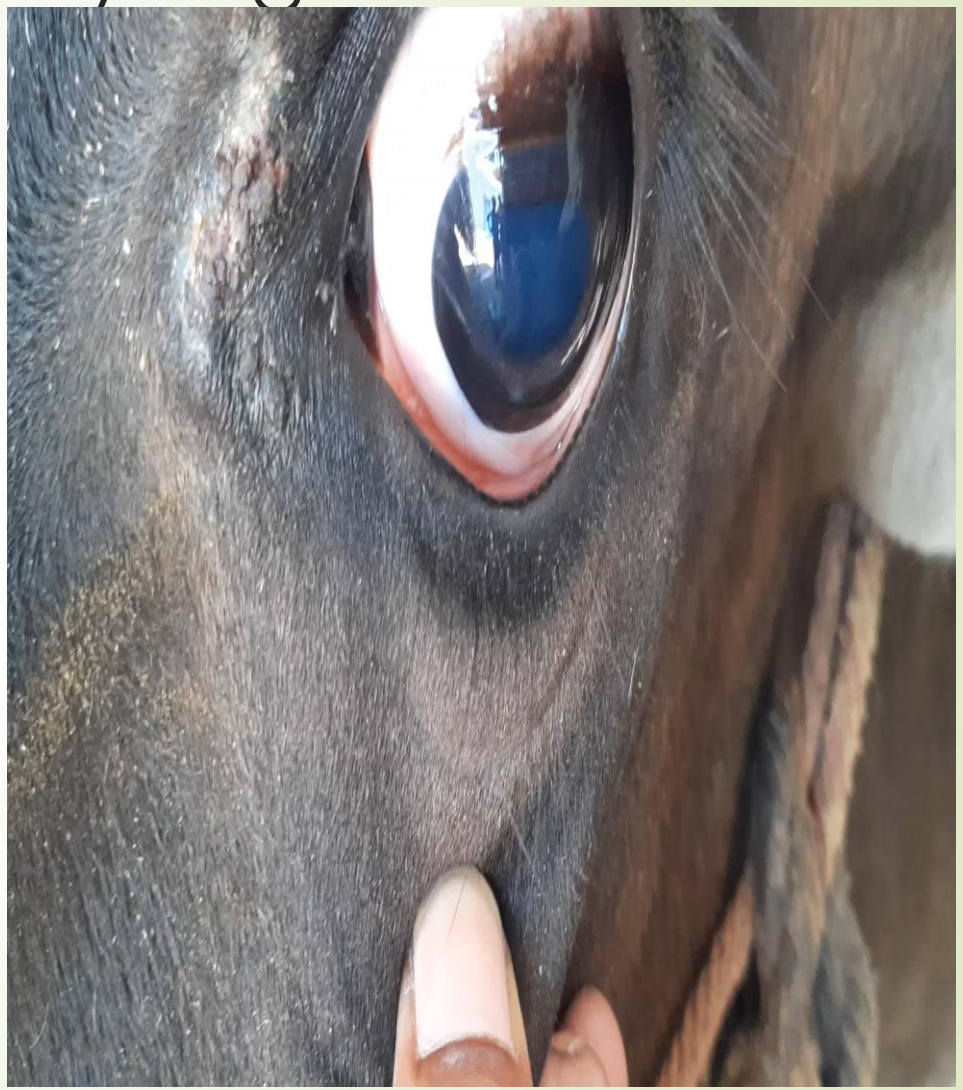
- **Rapidly growing grasses** may contain relatively high concentrations of **potassium** and most always have **low concentrations of Mg**.
- Parentral Magnesium Injection 1ml per Kg IV slow
- **Followup**
- **Oral Mg salts**: 50% Mg sulfate solution (125–150 mL for adult cattle).
- **Subcutaneous injection** of 100–200 mL(for adult cattle) of a 20%–50% Mg sulfate solution. **Limit to 50 mL per site to avoid tissue damage**.

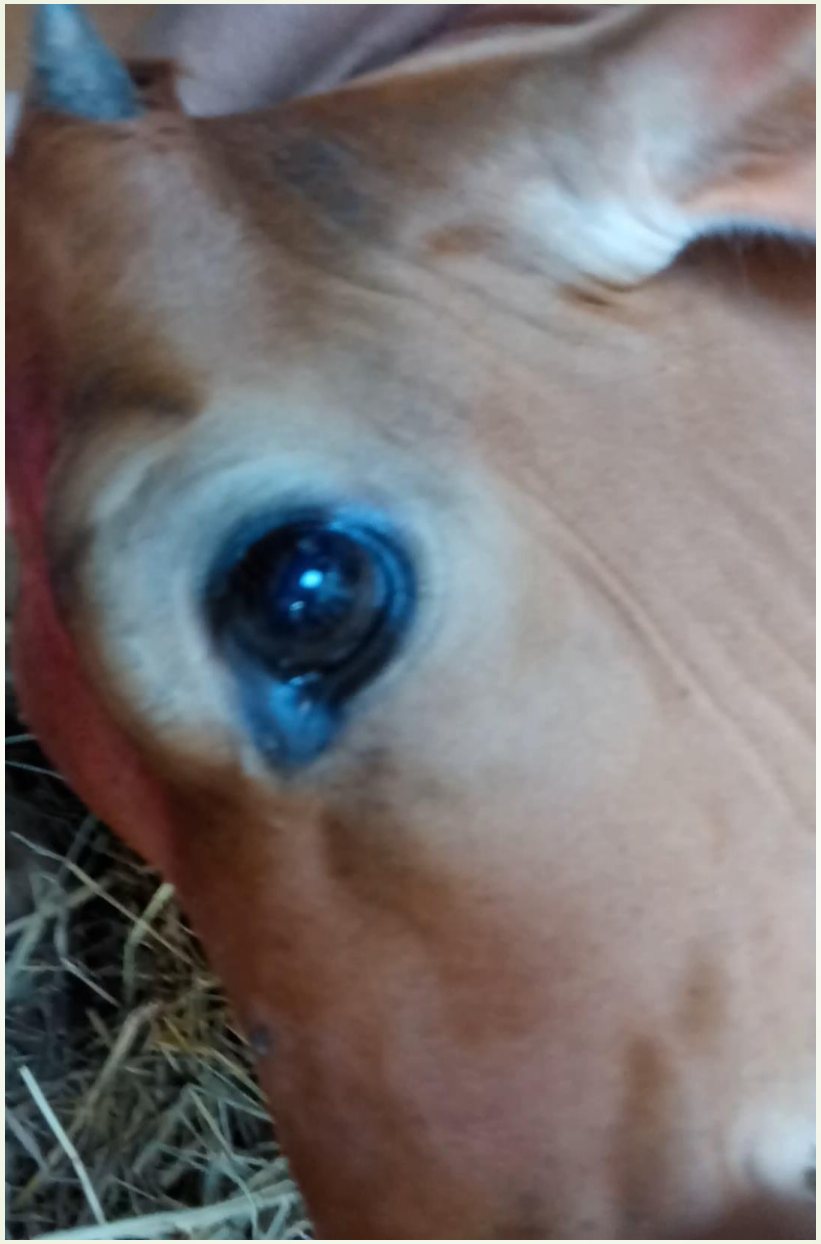
Immediate Recovery

- Pregnant 8m
- Incoordination,Staggering Gait
- Difficult to get up
- Wandering
- Bruxism
- No Fever
- Normal Sugar Levels

DorsoMedial Strabismus

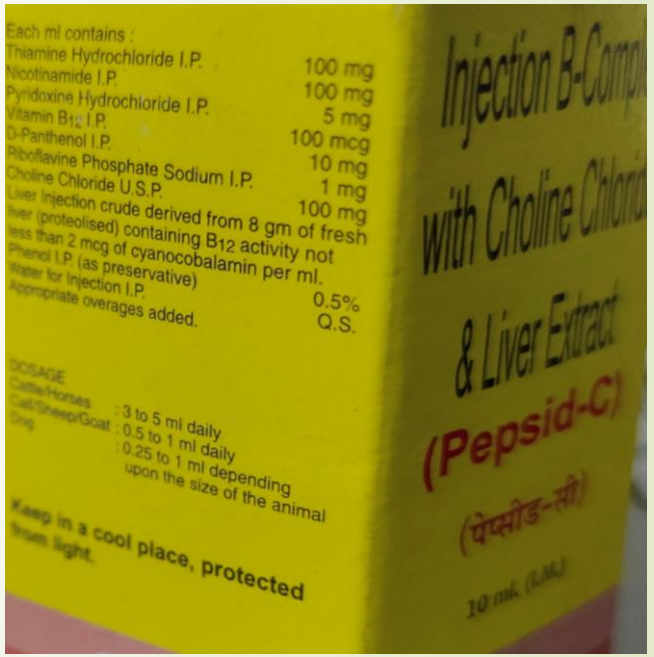
Nystagmus



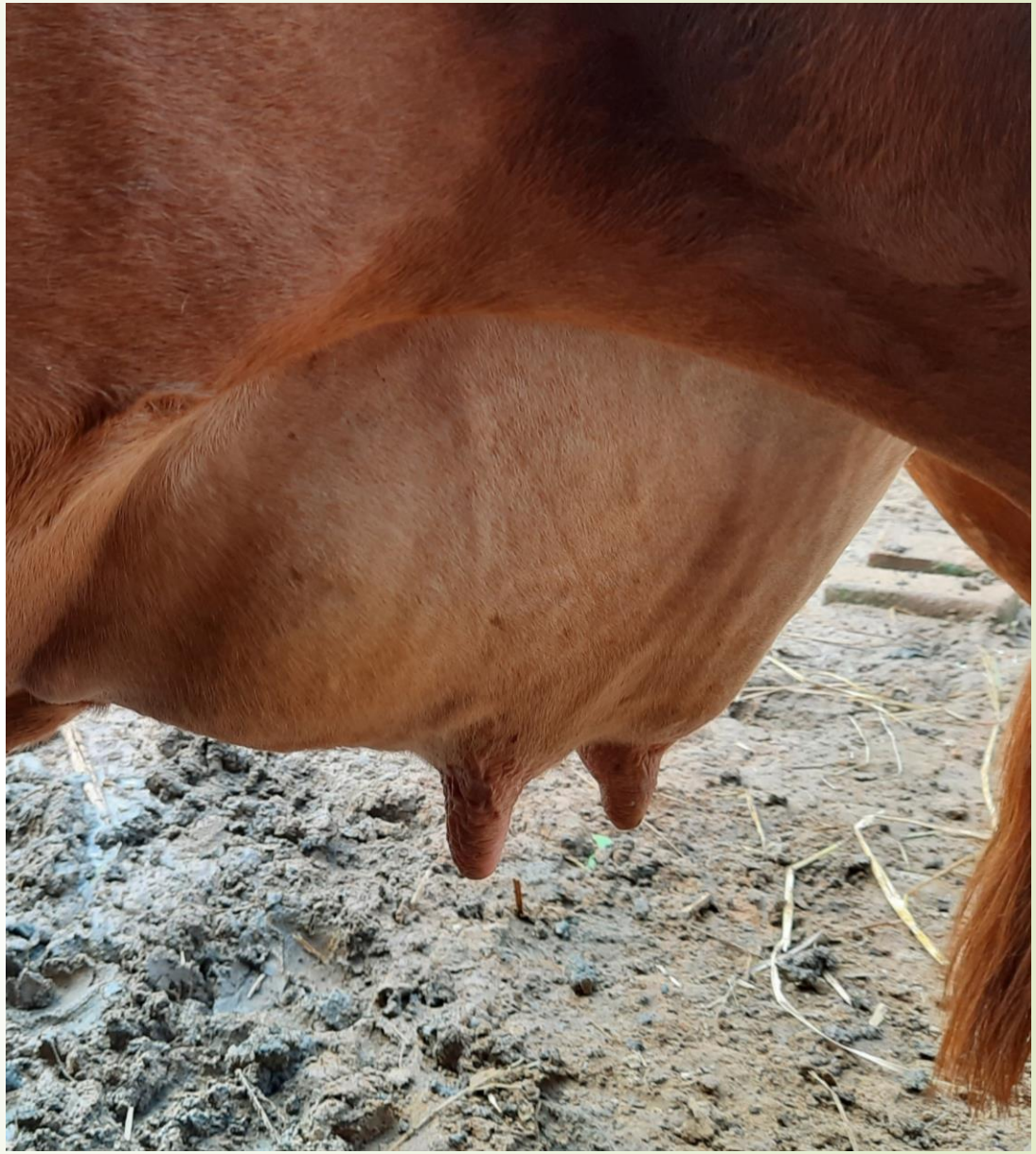


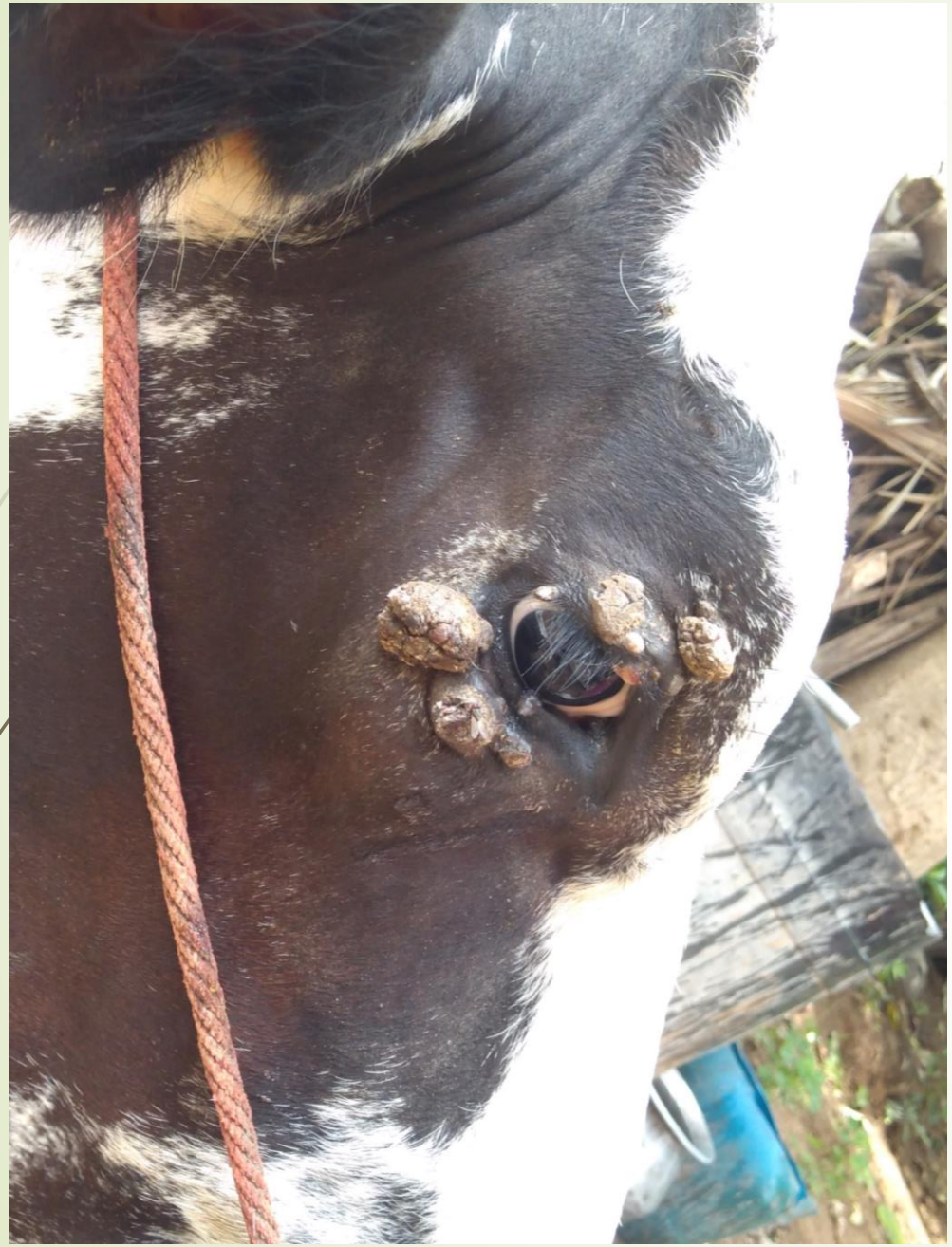
PEM

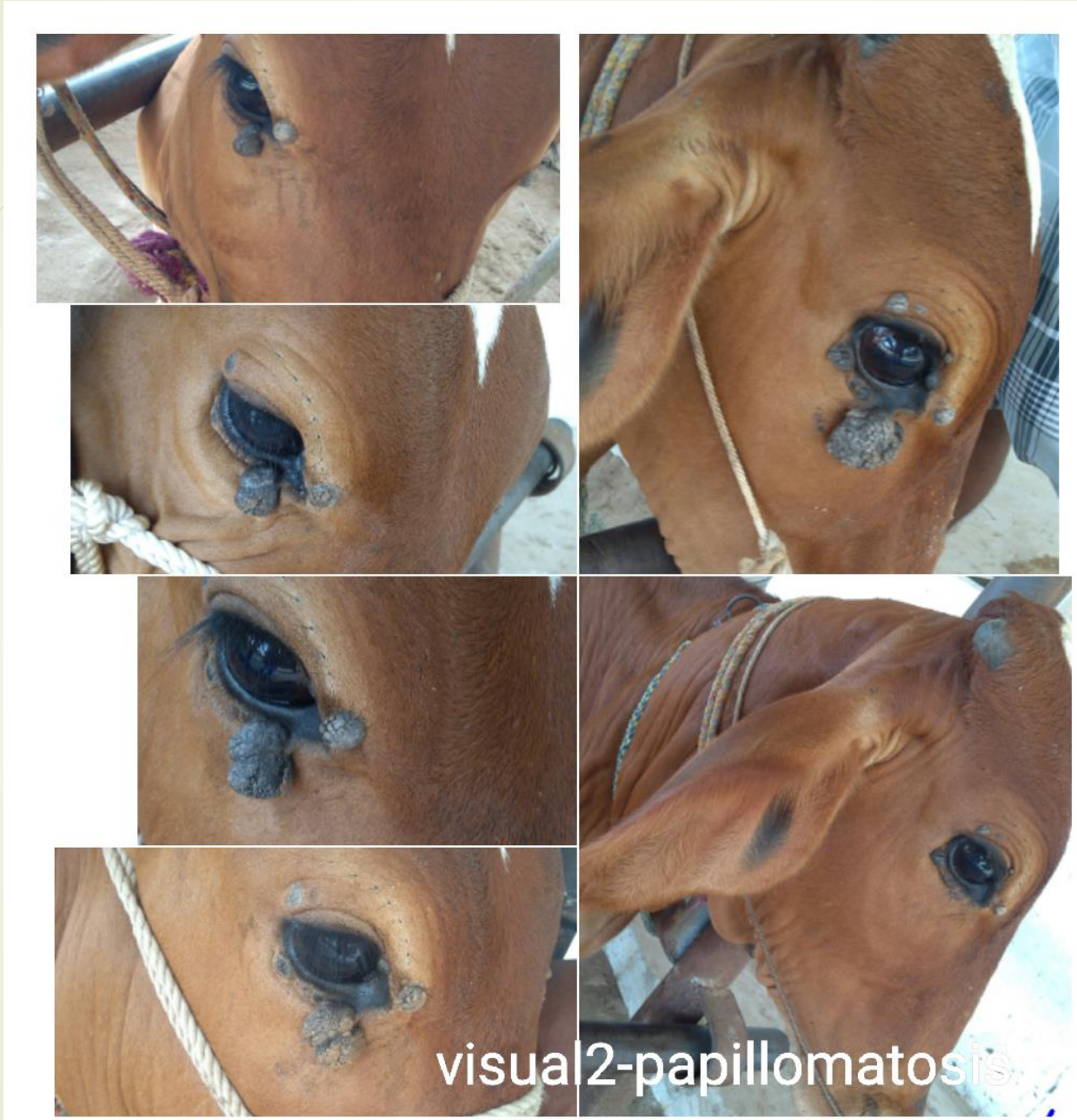
- Signs-Head Pressing, Blindness, Convulsions, **Nystagmus** and **DM strabismus and Recumbency**
- Thiamine at 10mg per Kg 3-4 times a day initially**…70ml of B1B6B12 inj per treatment for 3days atleast**
- Dilute it with NS or DNS and give slowly..**Direct IV leads to SHOCK AND DEATH**
- Cerebral Damage-**Dexamethasone** 1-2mg per Kg IM or Sc in Non Pregnant Animals
- Anti Convulsants if Needed
- Injectable IM and Oral Thiamine prep.,for followup-Hepatal Ds,Vitakind Liv and Aviplex EC



After Recovery



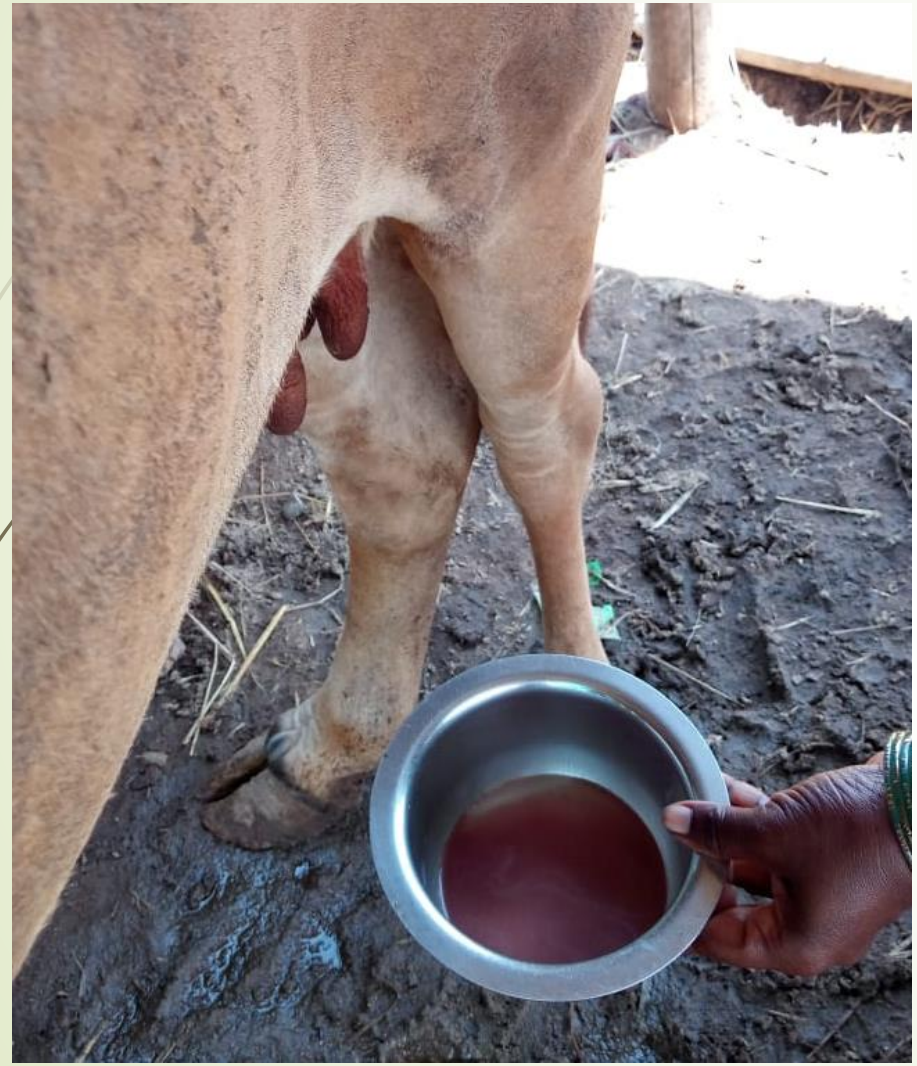



visual2-papillomatosis

BPV-Treatment protocol available

- **ImmunoCompromised Animals** –Head,Neck,Eyes ,Shoulders,Ventral Abdomen and In Udders
- **Autohemotherapy**- 20ml of Venous Blood for 450kg btwt–jugular venipuncture-10ml SC and 10ml IM-once for 6weeks
- **Mode of Action**-Stimulation of **RES**-Macrophages-Regression of Papillomas
- **Inj Levamisole** at 2.5mg per kg –ImmunoStumilant and AntiNematodal
- **Homeo**-Thuja 30c 10drops sublingual and External Thuja ointment
- **LAT** 15ML deep IMq48hrs once-5 times-**Pedunculated wart**,Not in Sessile and Flat Warts.
- Severe Cases**-Autogenous Vaccines**-older papillomas in 10%Formalin-NS-SP 2mg/ml-10ml of Suspension –SC-6wks

Blood in Milk-Haemolactia



Treatment Protocol-

- **Non Infectious**-Trauma-Knuckling Method of Milking
  -Capillary Bleeding in Heifers with Udder edema
- **Infectious**-Leptospirosis/E.coli-Rule out
- Parentral **Hemostat**-Tranexamic Acid IV
- Parentral **coagulant**-Ca IV
- Inj **Vitamin C** IM (Wound Healing and Tissue repair) at 5-10mg per Kg
- Oral **Camphor**(4-5) in banana bid
  Oral **Curry leaves** 200g in 5Lemon bid-Styptic action
  Oral **Touch me not** plant-200g bid-Alkaloid-Mimosine-adrenaline like substances
- Oral **Formalin Therapy**(5ml in 500ml water once oral)
- Inj **Progesterone Therapy**-Recently calved animals.

Dr V.RAJESH B.V.Sc, & A.H
Veterinary Assistant Surgeon
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As Veterinary officer-KMF Karnataka-2007-2009
As VAS -DAH-TN -2009-Till date

Thank you...,