

Downer's cow syndrome

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Synonym: Post parturient recumbency

It has also been considered as a special form of parturient paresis.

Definition: it is a condition in which a cow or buffalo remains in a recumbent position for more than 24 hours.

It is a sporadic disease. Cows and buffaloes are affected. Most common in exotic dairy breeds and crossbreed HF cows. Females are affected.

Physiological status: it is common in recently calved and in advance pregnant animals

Stage of lactation: The disease mostly occurs in the first 2 to 3 days after calving in heavy milk producers and many times as a complication of parturient paresis.

Predisposing factors: Obesity, cold stress, light exercise.

Etiology:

The following factors may cause Downer's cow syndrome

- **Persistent hypocalcaemia:** Milk fever cases which are unable to rise after 2 injections of calcium preparation indicate persistence of hypocalcemic condition. This may due to
 - a) Incomplete dosage of calcium
 - b) Inadequate intake of calcium through diet due to poor appetite
 - c) Delayed treatment of milk fever cases
- **Hypomagnesemia:** Low level of serum Mg is also seen but it may develop along with hypocalcemia.

- **Hypokalemia:** Prolonged recumbency results in ischemia and increased permeability of muscle fibre with loss of Potassium from cell, rapid urinary excretion and decreased absorption from gut.
- **Nerve injury:** Usually peroneal and tibial nerves are damaged. Sometimes pelvic nerves are affected.
- **Muscle injury:** Muscle injury particularly injury of abductor and gastronemius muscle of hind limbs occur as a result of spreading of legs when cow attempts to rise.
- **Fracture of hip/limb bines/dislocation of joints**
- **Hypophosphatemia:** it is one of the commonest causes of downer cow syndrome. The animals with low P level normally show general weakness.
- **Mycocardosis:** It is thought to be due to repeated dosing with calcium preparation.
- **Hepatositis (fatty liver)**
- **Toxaemia:** It may result from mastitis, acidic, indigestion, metritis etc.
Clinical findings: based on the clinical signs downers animals are classified as alert downers and non-alert downers.
- **Alert Downers:**
 - a) Animal is alert and bright.
 - b) Body temperature and heart rate are normal.

- c) Animal is usually in sternal recumbency and at the initial stage it tries to rise up.
- d) It results from milk fever and calving injuries.
- e) Decrease in appetite (inappetence).

- **Non-alert downers:**

- a) Animal is dull and depressed and does not take feed and water.
- b) All physiological parameters are abnormal.
- c) Animal is in lateral recumbency and usually does not make attempt to rise up.
- d) It results from septicemia/ toxemia due to metritis, mastitis, TRP, Indigestion.

Diagnosis:

History: Milk fever, prolonged handling for dystocia, calving injury.

Clinical signs: Recumbency for more than 24 hours.

- **Clinical pathology:** Low serum Ca, P, Mg, K and glucose values. The levels of CPK and SGOT are usually elevated.
- Increased CPK indicates muscle damage.
- They may fail to stand even after successive treatment with Ca.

- **Treatment:**

- **A) General care & management:**

- Good care and management, Provision of soft bedding with hay or dry grass or paddy straw.
- Animal should be turned from side to side every 3 hour to minimize ischemic necrosis.
- Slings for 15-20 min. which is advisable for every 4-6 hours.
- Animal should be made to stand with support at least twice daily.
- Massaging of legs/limbs.

- Infra red therapy for half an hour twice daily till recovery.
- Provision of good quality hay.

B) Therapeutic management:

- Parenteral preparations containing Ca, P and Mg @ 1.5 ml/kg body wt. IV slowly for one or two times.
- Potassium acetate @ 30-50 gm orally for 5 to 7 days.
- Inj Tonophosphan @ 10-15 ml IM for 5 days
- Inj Tribivet @ 10 ml IM daily for 5 days.
- Corticosteroids are recommended for treatment of downer cows as they increase motor activity by increasing intracellular potassium content.
- Vit.E and selenium preparations Inj E-care-Se @ 1ml/25-50 kg IM may be used.
- Antibiotics in case of infective cases eg. Amoxicillin-cloxacilin @5-10 mg/kg IV, IM daily for 3-5 days.

Control:

- Cow should not be mated with heavy bulls in order to prevent dystocia.
- Cow should be made to stand within short time following parturition.
- Cow should not be fed too much during advance pregnancy to avoid obesity.
- Parenteral administration of Vit. D3 in milk fever prone cows one week prior to parturition.
- Treatment for milk fever should be given immediately.

