Induction of Parturition in Cows

Indications

1. To prevent dystocias due to feto-pelvic disproportion.
2. When programming calving and pasture availability.
3. In the management of medical problems, such as hydrops allantois.
4. Abortion of small heifers.

Side effects

The most common problem associated with the induction of parturition in cows is retention of the fetal membranes.

Procedures:

1. Short-acting Corticosteroids

- Dexamethasone **(20mg)** as a single intramuscular injection.
- 80% - 90% effective when administered to cows within 2 weeks of full term.
- The interval from injection to parturition is about 48 hours.
- The incidence of retention of the fetal membranes is estimated to be about 75%.

2. Long-acting Corticosteroids

- Dexamethasone trimethylacetate or Betamethasone suspension (**20 mg)** as a single I.M. dose about 30 days before term.
- Parturition occurs about 15±8 days after injection.
- This method associated with a lower incidence **(9 to 22%)** of retained placenta.
- There is a high incidence of calf mortality **(17 to 45%)** that is thought to be associated with premature placental separation and/or uterine inertia, and the colostrum immunoglobulin concentration is reduced.

3. Prostaglandins

- PGF2 alpha (**Lutalyse) (25 mg)** used as a single I.M. injection.
- Calving occurs 24 to 72 hours later in 90-100% of cows treated.
- Calf viability is good if given less than 2 weeks prior to term.
- The incidence of retained fetal membrane is similar to the short acting corticosteroids.
- Some studies have shown a higher incidence of dystocias with prostaglandin than with the corticosteroids.

4. Cortiscosteroid-Prostaglandin Combination

- Calving occurs sooner than for either drug alone **(34.6+ 1.4 hours).**
- The incidence of retained fetal membranes is equally as high as when each drug is used alone.
- 25 mg **PGF2** alpha I.M. and 25 mg. dexamethasone I.M.

5. Short-acting Corticosteroids and Estrogens Combinations.

- 20-25 mg estradiol I.M. and 25 mg dexamethasone I.M. tends to shorten the average interval to calving.
- This procedure decreased the incidence of retained fetal membranes.
- Estrogens produces residues in milk which limits the use of this method in dairy cattle.

Induction of Parturition in the Mare

Indications

- 1. Mares with a history of premature placental separation.
- 2. Delayed parturition due to uterine atony.
- 3. Prevention of injury to the mare at foaling.
- 4. Possibility rupture of the prepubic tendon.
- 5. Possibility death of the mare.
- 6. Prolonged gestation

Methods

- Both oxytocin and prostaglandins have been used to induce parturition in mares. Oxytocin is however the drug of choice.
- Oxytocin at a low (**2.5 to 10 IU**) dose given I.V. is preferred over high (**40 to 120IU)** doses given I.M.
- Lower doses **(<20IU)** of oxytocin are associated with a lesser degree of discomfort in the mare and shorter delivery times than higher **(>40 IU)** doses.
- After I.V. administration of oxytocin, foaling ordinarily begins in 15 to 30 minutes
- Mares may be induced with prostaglandins (**4 mg. S.C.)**
- The mean delivery time was 3.9 hours from the time of injection.

Complications:

- 1. Delivery of premature foals
- 2. Decreased passive transfer of immunoglobulins
- 3. Myometrial spasm
- 4. Premature placental separation
- 5. Dystocias
- 6. Retention of the fetal membranes

Induction of Parturition in the Ewe

- Management of ewes with pregnancy toxemia.
- Injection of 16 mg dexamethasone as a single I.M. injection within 5 days of term. result in normal parturition in 2 to 3 days.
- Two I.M. injections of 1-2 mg of estradiol benzoate 5 to 6 days before term or with a single injection of 15 mg estradiol benzoate 5 days before term.

Induction of Parturition in Goats

- Prostaglandin **(5 to 10 mg PFG-2 alpha**) at 144 days of gestation results in delivery between 27-35 hours after injection.
- 20 mg dexamethasone produces delivery in 1-2 days.