SEPTIC METRITIS IN DAIRY COWS

September 2010
CLASSIFYING INTRAUTERINE DISEASE

- **Metritis** (including septic metritis)
  - calving to GnRH responsiveness
  - defined as inflammation of all layers of the uterine wall
  - 2 to 14 days

- **Endometritis**
  - to first ovulation
  - 10 to 21 days

- **Pyometra**
  - to complete involution, post-ovulation
  - day 45 and after
Clinical Signs and History

- 2-14 days post partum
- Anorexia
- Drop in milk production
- Pyrexia
- Tachycardia
- Tachypneic
- Dehydrated
- Large flaccid uterus on rectal palpation
- Dark brown to red, foul smelling fluid and placenta coming from vagina
- Rumen stasis
- Diarrhea
- Toxemia
DIFFERENTIAL DIAGNOSES

- Emphysematous fetus (eg. twin)
- Septicemia (eg. Salmonella)
- Toxic mastitis (check udder!)
- Displaced abomasum (LDA, RDA, RTA)
- Uterine tear
- Peritonitis
- Hardware disease
- Intestinal accident
Pathogenesis

- Failure of the uterus to involute, along with retained fetal membranes, and infection with multiple bacteria combine to cause metritis and toxemia.

- There is necrosis of the mucosa and wall of the uterus, which becomes enlarged and filled with foul-smelling fluid.

- Absorption of toxins leads to toxemia and clinical signs.
Agents Involved

Predominate Flora
- Arcanobacterium pyogenes
- Fusobacterium necrophorum
- Bacteriodes spp.
- E. coli

Occasionally Present
- Staphylococcus spp.
- Streptococcus spp.
- Pseudomonas aeruginosa
- Proteus spp.
- Clostridium spp.
Metritis is associated with:

- Retained placentas (most common) - often following dystocia, abortion or twins
- Dystocias
- Larger herds
- Over or underconditioned cows
10% of dairy cows will have retained fetal membranes for longer than 6 hours post-parturition.

The incidence of having a retained placenta in single calvings is 10%, while twin calvings is 47%.

50% of cows with retained fetal membranes will develop metritis.

Metritis has also been associated with forceful removal of fetal membranes in the first 4 days post-partum.

Recent research indicates that retained placenta is an indication of impaired immune function.
Daily treatment with antimicrobial agents for several days or until recovery; untreated animals can die.

Broad spectrum antimicrobials such as penicillin, ceftiofur, ampicillin or oxytetracycline are recommended due to mixed bacterial flora.

Anti-inflammatory drugs (e.g. flunixin).

In severely affected cases, large amounts of fluids, electrolytes and glucose (or dextrose) given intravenously can be beneficial.

Supportive therapy.

Intrauterine medication is controversial; infusion with antimicrobials (should be beta-lactamase resistant).
**Prognosis**

- Affected cows should be quickly identified and treated.
- Cows receiving prompt and aggressive treatment with antimicrobials and supportive care should recover, uncomplicated cases should not see an effect on fertility or time to conception.
- Calving to conception interval is significantly increased in cows that develop clinical metritis.
- Prognosis becomes guarded as metritis progresses, and toxemia and laminitis develop.

