Contagious Ovine Digital Dermatitis
is it just Digital Dermatitis in sheep?

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CODD

- New emerging disease of sheep
- Harwood and others UK 1997
- Virulent severe ovine footrot
Grade 1 - Hair loss at the level of the coronary band.

Grade 2 - Ulceration at the level of the coronary band.
Grade 3 - Ulceration of the coronary band with *partial under running* of the hoof horn.

Grade 4 - *Complete under running* of the hoof horn and possible shedding of the hoof horn.
Grade 5 - Healing foot with the horn beginning to regrow but an active lesion still present.

Grade 6 - Healed foot, often with deformation of the regrown horn.
CODD- Aetiology

- 2000 Collighan et al typed this spirochaete *Treponema vincentii* associated with Bovine Digital Dermatitis
- 2001 Demirkan et al NI isolated Treponeme isolated very similar to BDD strain
- Hypothesis shared bacterial cause for both conditions *Treponema spp.*
- Moore et al 2005
  Treponemes identified in 70% CODD lesions, 38% healthy feet
  *Dichelobacter nodosus* 74% CODD lesions and 31% of healthy feet
CODD- Aetiology

2009 Sayer et al isolated *Treponema vincentii, Treponema phagdenis, Treponema denticola* like strains from sheep from NI, all associated with BDD in UK

2012 Duncan et al vaccinating sheep against *D nodusus* did offer some protection against CODD infection, suggesting a role for *D nodusus* in the aetiology of CODD

Summary: quite few bacteria associated with CODD, *F necrophorum, Treponema spp. D nodosus*

Relationship between them? Are all three required or is one the primary and the others secondary?
EPIDEMIOLOGY

- Wassink et al 2003
- England and Wales 11% CODD
- Mean within farm prevalence of 25.6%
- 2.4% of farms in England (Kaler and Green 2008)
EPIDEMIOLOGY

- Season
- Housing or pasture
- Environmental conditions
- What is the pattern of spread in a flock
- Age
- Repeat infection
- Cattle on the farm
- Concurrent disease- ??
CONTROL OF CODD

1. Stop disease entering the farm
   1. BIOSECURITY
2. Sheep resistance to disease
   1. Vaccination – DON’T HAVE
   2. Genetics - DON’T HAVE
3. Antibiotic Treatments
   1. Prompt treatment
   2. ? Which
   3. ?Targeted individual sheep, whole flock treatments
   4. Evidence base - LIMITED
4. Cull chronic cases
5. Keep handling areas clean
ANTIBIOTIC SELECTION

- Injectable antibiotics
  - Oxytetracycline LA
  - Macrolides
    - Tilmicosin (Micotil)
    - Tulathromycin (Draxxin)
    - Gamithromycin (Zactran)

- Topical antibiotics footbath
  - Lincospectin
  - Tylosin
  - Chlortetracycline
ANTIBIOTIC SELECTION

- Scientific Evidence limited but..
  - Treponemes sensitive to penicillins
  - Cure rates amoxicillin - 71%
  - Oxytetracycline LA
  - Bacteria Treponemes, *D. nodosus* *F. necrophorum*

- ? Use of macrolide
  - No evidence any better than traditional first line antibiotics
  - Important antibiotics for human medicine
  - Some not licensed for sheep
  - Expensive
  - Long meat with hold times
  - Vet only administration
ANTIBIOTIC TREATMENT STRATEGIES

1. Whole group
   1. Expensive
   2. Antibiotics as preventative strategy - ? Responsible
   3. ? Effectiveness

2. Systemic antibiotics to affected and topical antibiotic footbath to rest group
   1. Off license
   2. Disposal of antibiotics
   3. Good foot bathing facilities, dry clean concrete
   4. Clean feet before hand
   5. Stand in time ? 10-15 mins
   6. Dry standing afterwards

3. Prompt treatment of individual cases
   1. Less damage to foot
   2. Quicker healing
   3. Spread less infection
   4. Legal requirement
**BIOSECURITY**

1. Single farm known source
2. Isolate incoming sheep (21-28 days)
3. Anthelmintic treatment for resistant worms
4. Treat for Sheep Scab
5. Check for lameness
   - Suspect CODD- vet to check
   - Return sheep
   - In consult with vet consider whole group antibiotics until appear clear of disease
   - ? Carrier sheep, risk of introduction of disease to your flock
SUMMARY - CODD

- Common and severe
- Bacteria
  - Treponemes
  - D nodosus
  - F necrophorum
- Evidence Based Treatment
- Biosecurity
THANK YOU !