E. Streptococcus agalactiae

1. Introduction

a. Large dairy herds with no control

programs will be infected at a

rate of about 25%

b. Although deaths rarely occur, there

will be significant losses from

decreased milk production and

treatment costs

c. Main source of infection is the

udder of infected cows; but

contamination of the environment

may be an important factor

d. Route of infection is the teat canal

2. Pathogenesis

a. Variation in resistance to infection

b. Invasion takes about 1-4 days with

appearance of inflammation after

about 3-5 days

3. Clinical signs

a. Fever initially

b. Types of reaction

1.] Peracute -- fever, anorexia

2.] Acute -- inflammation of gland severe, but no marked systemic reaction

3.] Chronic -- inflammation mild;

abnormal milk may be the only

sign

4. Treatment

a. Antibiotics systemically and or locally

b. Procaine penicillin G

5. Control

a. Eradication is possible from the herd

b. Follow basic mastitis control procedures

F. Other types of Streptococcal mastitis

1. S. uberis -- can survive outside the body

and is a common cause of dry cow mastitis

2. S. dysgalactiae -- very contagious;

survives outside the body

3. S. bovis --found in feces and reproductive tract

4. S. zooepidemicus

G. Coliform mastitis

1. Cause

a. E. coli, Klebsiella, Pseudomonas are most common; Enterobacter and Citrobacter are less common

b. Coliforms are environmental compared

to Staph. and Strep. which are

infectious

c. Coliforms enter the gland through

the teat canal

d. Endotoxin is believed to be a major initiating factor in the clinical signs observed

2. Environmental and management factors

a. Bedding -- sawdust has higher numbers

of coliforms

b. Careful prepping of cows for milking including pre-dipping, drying of udders prior to milking

c. Unsanitary infusion techniques

d. Letting cows go to rest immediately

after milking

3. Pathogenesis

a. Entry through the teat canal

b. Increasing the numbers of bacteria

on the teat end will increase the

incidence of infection

c. Occurs shortly after parturition and

may actually begin to develop just a few days before parturition

4. Clinical signs

a. Sudden onset of signs

b. Depression, anorexia, fever

c. Inflammation may not be noticeable

because of hypogalactia

d. Secretion is often watery

e. Hyperglycemia, hypocalcemia,

leukopenia at least initially

5. Therapy

a. Principles of therapy

1.] Eliminate the bacteria from the gland

2.] Neutralize the endotoxin

3.] Neutralize the effects of the endotoxin

4.] Provide supportive therapy

b. Specific treatment

1.] Antimicrobials

2.] Non-steroidal antiinflammatory drugs

3.] Stripping out the gland;

administration of oxytocin;

hot and cold water packs

4.] Fluids and electrolytes including glucose and calcium

6. Prevention

a. Management

1.] Proper preparation of cows for milking

2.] Pre- and post milking teat dipping

3.] Use of proper bedding materials

4.] Feeding cows after milking

5.] Vaccination

H. Other types of mastitis

1. Clostridium mastitis -- infrequent;

characterized by gaseous secretion

2. Serratia

3. Corynebacteria -- summer mastitis

4. Mycoplasma -- atypical

a. Increase in resistant cases

b. More than one quarter involved

c. Marked loss of production

d. Abnormal secretions are tan or

brown

e. Spreads rapidly through the herd

5. Mycotic

a. Associated with prolonged antibiotic

therapy

b. Associated with use of contaminated

medication

I. Detection of mastitis in cows

1. Strip plate or cup

2. California mastitis test

3. Bacteriological culture and sensitivity

4. Prostaph

5. Somatic cell count

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a. Season

b. Age

c. Stage of lactation

d. Production level

e. Management practices

f. Composite cow samples

g. Bulk tank samples

J. Mastitis therapy

1. Factors

a. Organism

b. Proper use of the drug

c. Husbandry and sanitation procedures

d. Phase of the disease

2. Drugs

K. Control and prevention

1. Treating of quarters at drying off

a. Affected only

b. All

2. Treat clinical cases as they occur

3. Cull chronic cases

4. Teat dipping after milking

5. Adequately service and maintain milking

machines

6. Wash and dry teats before milking

7. Disinfect teat cups between cows

III. Milk and dairy beef quality assurance program