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

 page 12

 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