New publications in the PARATUBERCULOSIS database (1095-1110)

Sero logical and molecular detection of Mycobacterium avium subsp. paratuberculosis in cattle of dairy herds in Colombia
Tropical Animal Health and Production, 43, 1501-1507

The objective of this study is the detection of Mycobacterium avium subsp. paratuberculosis (MAP) by serum enzyme-linked immunosorbent assay (ELISA), fecal polymerase chain reaction (PCR), and fecal culture in Colombian dairy herds. Serum and fecal samples from asymptomatic cows (n=307) of 14 dairy herds were tested for MAP by an unabsorbed ELISA test (ELISA-A). Serum and fecal samples from positive ELISA-A animals (n=31) were further tested by an absorbed ELISA test (ELISA-B) and PCR. Fecal samples from animals of herds positive by ELISA-A and PCR (n=105) were inoculated onto three different culture media. ELISA-A produced positive results in 10% of the serum samples and 71% of the herds. ELISA-B and PCR results were positive in two and six serum and fecal samples from positive ELISA-A animals, respectively. Fecal samples were negative for MAP on all culture media. The results of this study confirmed the presence of MAP in local dairy herds and the difficulties of MAP detection in asymptomatic animals by ELISA, PCR, and fecal culture

1096  Lombard, J.E. (2011)
Epidemiology and Economics of Paratuberculosis
Veterinary Clinics of North America-Food Animal Practice, 27, 525-+

Johne's disease is the clinical manifestation of Mycobacterium avium subsp. paratuberculosis (MAP) infection and has become widespread since it was first observed in the United States in the early 1900s. MAP is primarily spread through the fecal-oral route, and herds generally become infected by unknowingly purchasing infected animals. The economic losses from the disease are primarily due to decreased milk production, decreased weaning weights in nursing young stock, increased replacement costs, and decreased slaughter value

1097  Sweeney, R.W. (2011)
Pathogenesis of Paratuberculosis
Veterinary Clinics of North America-Food Animal Practice, 27, 537-+

Paratuberculosis in ruminants is characterized by oral ingestion of Mycobacterium avium subsp. paratuberculosis (MAP), followed by a long incubation period during which time MAP is able to survive within the host's macrophages. Initially the infection is held in check by the host's cell-mediated immune response, but gradually the host loses control of the infection. The infection incites a granulomatous inflammatory response in intestinal tissue and mesenteric lymph nodes, resulting in protein-losing enteropathy, malabsorption, diarrhea, weight loss, and edema

1098  Fecteau, M.E., Whitlock, R.H. (2011)
Treatment and Chemoprophylaxis for Paratuberculosis
Veterinary Clinics of North America-Food Animal Practice, 27, 547-+

There is no definitive cure for Mycobacterium avium subsp. paratuberculosis (MAP) infections, but several therapeutic agents may be used to alleviate clinical signs of Johne's disease (JD) in ruminants of significant value. Treatment has to be maintained for the life of the animal and treated animals usually continue to shed MAP. No drugs are approved for treatment of JD in
the United States; any drug use is "extra-label." Isoniazid, rifampin, and clofazimine are most commonly used for treatment. Monensin, may aid in the prevention of infection in calves and to lower MAP fecal shedding in infected adult cattle.

1099 Kirkpatrick, B.W., Shook, G.E. (2011)
**Genetic Susceptibility to Paratuberculosis**
Veterinary Clinics of North America-Food Animal Practice, 27, 559-+

Multiple studies indicate that host animal genetics play a role in susceptibility to Mycobacterium avium subsp. paratuberculosis (MAP) infection. However, due to differences in methods used to define MAP-infected animals and controls and differences in methods of genetic analysis, there is as yet no clear consensus on the genes or markers to reliably define the MAP infection susceptibility of any animal species. Meta-analysis of combined studies and larger studies will help resolve the situation in the coming years.

1100 Patton, E.A. (2011)
**Paratuberculosis Vaccination**
Veterinary Clinics of North America-Food Animal Practice, 27, 573-+

One vaccine, Mycopar, is licensed for use in US cattle. The vaccine reduces clinical disease and fecal shedding of Mycobacterium avium subsp. paratuberculosis (MAP). The vaccine is indicated for use in herds with a high MAP infection prevalence or herds with limited resources for implementing paratuberculosis control measures. In heavily infected herds, a combination of vaccination and disease control measures can help protect susceptible young stock while reducing environmental burdens and limiting MAP transmission. There are regulatory restrictions on use of the vaccine and practitioners must consult their state veterinarian for guidance. Vaccines used in other countries have been widely adopted in Johne's disease control programs for small ruminants.

1101 Collins, M.T. (2011)
**Diagnosis of Paratuberculosis**
Veterinary Clinics of North America-Food Animal Practice, 27, 581-+

There is a wide array of accurate and affordable diagnostic tests for Johne's disease. The challenge is to be clear on the purpose for testing and then use the diagnostic test appropriate to that purpose for the specific animal species or type of business.

1102 Roussel, A.J. (2011)
**Control of Paratuberculosis in Beef Cattle**
Veterinary Clinics of North America-Food Animal Practice, 27, 593-+

As with any susceptible livestock species, the key to control of paratuberculosis in beef cattle is to reduce exposure of the susceptible calves to Mycobacterium avium subsp. paratuberculosis (MAP) contaminated feces. Because beef calves remain with mature, potentially shedding cattle until weaning, control strategies are aimed at providing an environment with the least possible fecal burden and removing MAP shedders as soon as possible. Testing and culling or separation may be more important in beef cattle than in dairy cattle. Seedstock owners have greater potential for economic loss from paratuberculosis, making control program more financially attractive to them than to commercial beef cattle producers.

1103 Garry, F. (2011)
**Control of Paratuberculosis in Dairy Herds**
Veterinary Clinics of North America-Food Animal Practice, 27, 599-+

Control of Johne's disease in dairy herds involves 3 basic steps: prevent exposure of calves to Mycobacterium avium subsp. paratuberculosis (MAP), identify and eliminate MAP-infected cows from the herd, and prevent entry of MAP-infected animals into the herd. Tailoring JD
control programs to each specific dairy requires education of the producer and a full
understanding of his/her goals, objectives, and resources

1104 Robbe-Austerman, S. (2011)
Control of Paratuberculosis in Small Ruminants
Veterinary Clinics of North America-Food Animal Practice, 27, 609-+

The clinical presentation of paratuberculosis in small ruminants is unthriftiness (poor body
condition); severe diarrhea is not a common clinical sign. In the USA, goats are primarily
infected with bovine strains of paratuberculosis and sheep are primarily infected with ovine
strains. Because ovine strains cannot be easily cultured, confirmation of a diagnosis is best
done by polymerase chain reaction on tissue or fecal samples. Control programs must be
tailored to the business objectives of the herd/flock owner and primarily involved changes in
herd management, with diagnostic testing used strategically

1105 Manning, E.J.B. (2011)
Paratuberculosis in Captive and Free-Ranging Wildlife
Veterinary Clinics of North America-Food Animal Practice, 27, 621-+

All ruminant species, exotic or domestic, captive or free-ranging, are susceptible to disease
and death due to Mycobacterium avium subspecies paratuberculosis (MAP) infection. Young
ruminants are the most prone to infection through fecal-oral transmission. Fatal Johne's
disease cases have occurred in numerous zoologic hoofstock collections and thus MAP
infection is of concern for an industry focused on conserving rare individual animals and their
genetics. Diagnosis is best based on MAP detection by PCR or culture in non-domestic
species. True nonruminant wildlife reservoirs (i.e., a population capable of sustaining the
infection independently of reinfection from the initial source and transmitting the pathogen to
other species) are rare

1106 Collins, M.T. (2011)
Food Safety Concerns Regarding Paratuberculosis
Veterinary Clinics of North America-Food Animal Practice, 27, 631-+

Both ante mortem and post mortem contamination of foods of animal origin commonly occurs.
Food manufacturing practices fail to reliably kill Mycobacterium avium subspecies paratuberculosis
(MAP) due to its innate resistance to heat and other physical factors. While medical science
does not agree on the human health consequences of MAP exposure, this potentially zoonotic
pathogen is found in a significant proportion of people with a disease bearing marked similarity
to Johne's disease (i.e., Crohn's disease). Control of MAP infections in farm animals to mitigate
the risk of human exposure is one additional reason for on-farm measures to control Johne's
disease

1107 Carter, M.A. (2011)
State, Federal, and Industry Efforts at Paratuberculosis Control
Veterinary Clinics of North America-Food Animal Practice, 27, 637-+

Paratuberculosis control in the United States has a long history, but only since 2002 has the
US Department of Agriculture (USDA) had a formal control program in place. Modeled after
work by the United States Animal Health Association (USAHA), the program continues to be a
voluntary effort by states and producers. Education on paratuberculosis continues to be
heavily emphasized by states

1108 Kennedy, D. (2011)
International Efforts at Paratuberculosis Control
Veterinary Clinics of North America-Food Animal Practice, 27, 647-+

Johne's disease has spread with livestock movements across the globe during the past
century. International interest and collaboration in research and disease control have
increased in the past 20 years. Control within infected herds and flocks has traditionally
focused on reducing the impacts on animal welfare and productivity. Endemically infected regions are also moving to reduce contamination of the farm environment and of farm products. Several countries have been working to safeguard apparently free livestock populations and regions.

1109 Collins, M.T. (2011)
**Johne's Disease Preface**
Veterinary Clinics of North America-Food Animal Practice, 27, XI-XII

Abstract not available

1110 Pedersen, J.S., Clarke, I., Mills, J. (2011)
**Improved detection of mycobacteria species in formalin-fixed tissue sections**
Histopathology, 59, 993-1005

Aims: To develop an antibody broadly reactive against mycobacterial species, which will improve detection of mycobacteria in tissue sections by immunohistochemistry (IHC).

Methods: A sheep antisera was developed by immunization with multiple mycobacteria, and was tested by IHC against a range of mycobacteria in tissues from many species, as well as negative tissue controls and other bacteria. Results: The sheep antiserum, MAS-01, reacted with all 18 mycobacterial species tested, but did not react with uninfected inflammatory tissues. Although MAS-01 cross-reacted with two microbial genera which are related to mycobacteria (Corynebacteria and Propionibacteria), it did not with Nocardia or Actinomyces. The antibody was more sensitive than the ZiehlNeelsen stain for detection of tissue mycobacteria, and shortened the time required to identify these infections. Conclusion: The MAS-01 antiserum will facilitate rapid identification of tissue mycobacterial infection by histopathologists.

New publications in the [CROHN'S DISEASE AND PARATUBERCULOSIS database](#) (626-627)

626 Collins, M.T. (2011)
**Food Safety Concerns Regarding Paratuberculosis**
Veterinary Clinics of North America-Food Animal Practice, 27, 631-+

Both ante mortem and post mortem contamination of foods of animal origin commonly occurs. Food manufacturing practices fail to reliably kill Mycobacterium avium subsp. paratuberculosis (MAP) due to its innate resistance to heat and other physical factors. While medical science does not agree on the human health consequences of MAP exposure, this potentially zoonotic pathogen is found in a significant proportion of people with a disease bearing marked similarity to Johne's disease (i.e., Crohn's disease). Control of MAP infections in farm animals to mitigate the risk of human exposure is one additional reason for on-farm measures to control Johne's disease.

**Impaired Dendritic Cell Proinflammatory Cytokine Production in Psoriatic Arthritis**
Arthritis and Rheumatism, 63, 3313-3322

Objective. The pathogenesis of psoriatic arthritis (PsA) remains poorly understood. The underlying chronic inflammatory immune response is thought to be triggered by unknown environmental factors potentially arising from a defective immune function. We undertook this study to determine whether an impaired acute inflammatory response by dendritic cells (DCs) might compromise the clearance of bacteria and predispose to chronic inflammation. Methods. We determined cytokine production by DCs from healthy controls and from patients with rheumatoid arthritis, PsA, and psoriasis in response to Mycobacterium tuberculosis, Mycobacterium avium paratuberculosis, and a range of other bacteria and Toll-like receptor (TLR) ligands. Phenotypic differences involved in cellular responses against (myco) bacteria were determined by quantitative polymerase chain reaction and flow cytometry. Results. The
secretion of proinflammatory cytokines by PsA DCs was impaired upon in vitro challenge with mycobacteria and TLR-2 ligands. This impairment was associated with elevated serum levels of C-reactive protein. The expression of TLR-2 and other receptors known to mediate mycobacterial recognition was unaltered. In contrast, the intracellular TLR inhibitors suppressor of cytokine signaling 3 and A20 were more highly expressed in DCs from PsA patients. PsA DCs further demonstrated up-regulated levels of ATG16L1, NADPH oxidase 2, and LL37, which are molecules implicated in the immune response against intracellular bacteria. Conclusion. Our findings indicate that DCs from PsA patients have a disordered immune response toward some species of (myco) bacteria. This might predispose to impaired immune responses to, and in turn impaired clearance of, these bacteria, setting the stage for the chronic inflammation of joints, entheses, skin, and the gut.