

ATYPICAL MYCOBACTERIOSIS

Animal Group(s) Affected	Transmission	Clinical Signs	Severity	Treatment	Prevention and Control	Zoonotic
- Fish -Amphibians -Reptiles -Birds -Mammals	-Ingestion -Inhalation -Waterborne -Environmental exposure via defects in respiratory, integumentary, or urogenital systems -Direct extension via bite wounds	- Variable to none - Cutaneous lesions - Ascites - Pneumonia - Mastitis - Lymphadenopathy - Lameness - Emaciation - Lethargy	Asymptomatic to chronic disease or acute death	-May not be advised -Antibiotics amino-glycoside; quinolone; macrolide	-Good sanitation -Good wound care -Prevent contact with contaminated water, soil, or feed	Yes

Fact Sheet compiled by: Elizabeth Manning

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Fact Sheet Reviewed by: Kurt Volle; Shannon Cerveny; Sarah Corner

Susceptible animal groups: Fish, amphibians, reptiles, birds, mammals

Causative organisms: This group includes all *Mycobacteria* except *M. tuberculosis* complex and *M. leprae*. Non-tuberculous mycobacteria – *Mycobacterium avium*, *M. intracellulare*, *M. marinum*, *M. fortuitum*, *M. chelonae*, *M. porcinum*, *M. farcinogenes*, *M. smegmatis*, *M. scrofulaceum*, *M. xenopi*, *M. kansasii*, *M. simiae*, *M. genavense*, and others - are slender, nonmotile, acid-fast bacilli that are classified as slow growing or rapidly growing.

Zoonotic potential: Yes. Many of these bacteria species may infect people who have a genetic predisposition or diminished immune function. Typically, they are not transmitted between humans or between animals and humans. Most infections are acquired from environmental sources, but infection may result secondary to abrasions, cuts, or similar disruption to surfaces.

Distribution: Ubiquitous worldwide

Incubation period: 2 weeks to greater than 2 months

Clinical signs: Variable clinical signs are observed which depend on species infected and site of infection. Asymptomatic to acute death presentations are possible. Other signs include: lethargy, emaciation, and other non-specific signs of illness; cutaneous ulcers, abscesses, and granulomas; enlarged abdomen and ascites; cough, dyspnea, pneumonia; mastitis; lymphadenopathy; and lameness due to bone infections.

Post mortem, gross, or histologic findings:

Gross: Granulomas in multiple organs, cutaneous ulcers and/or abscesses, ascites, pneumonia, mastitis, lymphadenitis, osteomyelitis, tenosynovitis, arthritis

Histologic: Granulomatous inflammation

Diagnosis: From cytology or histopathology samples, acid-fast bacilli can be demonstrated and tissue culture can be followed by biochemical identification of the bacteria. Polymerase chain reaction (PCR) is available.

Material required for laboratory analysis: For culture, fresh tissue samples are required. For histopathology, formalin-fixed tissue samples are submitted which can then be used for PCR. Direct lesion sampling by swabs can also be used with PCR.

Relevant diagnostic laboratories:

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National Veterinary Services Laboratories
1920 Dayton Avenue, Ames, Iowa, 50010, USA
515-337-7266

NVSL_Concerns@aphis.usda.gov

http://www.aphis.usda.gov/animal_health/lab_info_services/

Treatment: Due to possibility for development of antibiotic resistance and safety concerns for personnel in close contact with affected animals, treatment may not be recommended. Treatment when attempted should be based on antimicrobial susceptibility testing but empirical treatment options include: aminoglycosides, quinolones, and macrolides. Radical surgical excision of cutaneous lesions in conjunction with long-term antibiotic therapy has been described.

Prevention and control: Once diagnosed, excellent sanitation measures and permanent quarantine of known positive animals should be introduced. Appropriate wound care and prevention of wound contact with potentially contaminated water, soil, and feed will minimize these infections.

Suggested disinfectant for housing facilities: Tuberculocidal products as listed by the US EPA
http://www.epa.gov/oppad001/list_b_tuberculocide.pdf

Notification: Not required

Measures required under the Animal Disease Surveillance Plan: None required

Measures required for introducing animals to infected animal: None required

Conditions for restoring disease-free status after an outbreak: Due to ubiquitous nature of the etiologic agents, chronic profile, and inability to diagnose carrier state, disease-free status is not possible.

Experts who may be consulted:

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References

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