Mycobacterium bovis, paratuberculosis, and marinum infections in humans and animals

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Introduction

Mycobacterium, slender M. bovis infected Rhesus macaques (Macaca mulatta) displayed more severe clinical signs (coughing) than Cynomolgus (Macaca fascicularis) macaques.²

M. tuberculosis, M. bovis, M. marinum, and M. paratuberculosis, are zoonotic pathogens.

Diagnostic Tests

Mycobacterium bovis

M. bovis infected Rhesus macaques (Macaca mulatta) displayed more severe clinical signs (coughing) than Cynomolgus (Macaca fascicularis) macaques.²

M. bovis in humans:

- Tuberculosis from M. bovis rare in the US, after eradication from cattle in the 1990s.₈
- M. bovis infections are clinically indistinguishable from M. tuberculosis infections
- M. bovis patients twice as likely to die during treatment as M. tuberculosis patients.⁸
- Consuming contaminated dairy products may result in infection.⁸
- Infection often observed in children and HIV-positive patients.⁸

Mycobacterium paratuberculosis

M. paratuberculosis (Johnne’s Disease) in cattle:

- Extreme enteritis results in inflammation of mucosa in the ileum (in advanced cases resembling transverse rugae) causing malabsorption and profuse, “projectile” diarrhea.¹

M. marinum in leopard frogs:

- Immunocompetent leopard frogs (Rana pipiens) exhibit a chronic, granulomatous, non-lethal disease, with lesions in the liver and spleen.⁴

M. marinum in humans:

- Infection acquired through direct bacterial contact with broken skin, often while attending to fish tanks or while fishing.¹¹,¹²
- Manifests as cutaneous lesions on extremities due to low optimal growth temperature.¹¹,¹²
- Human infection is often called “swimming pool” or “fish tank” granuloma.¹¹,¹²

References