

INTISARI

Deteksi dan Pemetaan Infeksi *Mycobacterium* spp. pada Kucing dan Anjing di Daerah Istimewa Yogyakarta (DIY)

Mycobacterium merupakan salah satu genus bakteri yang dapat menginfeksi hewan dan manusia. Infeksi ini dapat menyerang kulit, saluran pencernaan, dan saluran pernapasan, hingga menyebabkan infeksi sistemik dan kematian serta memiliki risiko zoonosis yang signifikan. Populasi kucing dan anjing yang besar di Daerah Istimewa Yogyakarta (DIY) berpotensi meningkatkan penyebaran penyakit ini, meskipun laporan kasusnya terbatas. Penelitian ini bertujuan untuk mendeteksi, mengidentifikasi, dan memetakan infeksi *Mycobacterium* spp. pada kucing dan anjing di DIY dengan pendekatan kajian deskriptif dan teknik sampling *detect disease*. Spesimen *swab* (nasal, orofaring, atau luka) dikumpulkan dari 70 ekor kucing dan 61 ekor anjing yang menunjukkan gejala klinis infeksi *Mycobacterium* spp. seperti bersin dengan cairan sekresi hidung, batuk kronis, pembesaran kelenjar getah bening, nodul dermal, luka yang sulit sembuh, kaheksia, anoreksia, anemis, muntah, dan atau diare. Semua spesimen di analisis menggunakan pemeriksaan bakteri tahan asam (BTA) dengan pewarnaan *Ziehl-Neelsen*, kultur bakteri (HEYM), PCR, dan sekuensing DNA. Pemetaan menggunakan aplikasi ArcGIS versi 10.8 dan hasil penelitian secara keseluruhan di analisis secara deskriptif. Pengujian spesimen *swab* dengan pemeriksaan BTA menunjukkan hasil negatif, pemeriksaan PCR menunjukkan 1 dari 70 (1,4%) hasil positif (K84) *Mycobacterium* spp. pada sampel kucing. Hasil kultur menunjukkan terdapat lima dari sampel kucing dan tujuh dari sampel anjing yang memiliki pertumbuhan koloni dengan karakteristik khas *Mycobacterium* spp. Konfirmasi isolat kultur bakteri dengan pemeriksaan BTA dan pemeriksaan PCR, menunjukkan terdapat 3 dari 70 (4,3%) isolat sampel kucing dan 1 dari 61 (1,6%) isolat sampel anjing yang positif *Mycobacterium* spp. Hasil sekuensing filogenetik menunjukkan terdapat dua spesies bakteri yang berhasil diidentifikasi dari empat sampel positif yaitu *Mycobacterium fortuitum* dan *Mycobacterium chelonae-abscessus group*. Hasil pemetaan menunjukkan dua kasus infeksi *Mycobacterium fortuitum* ditemukan pada pemilik yang terkonfirmasi menderita TB dan dua kasus infeksi *Mycobacterium chelonae-abscessus group* berada di Kota Yogyakarta dengan jumlah penderita TB lebih dari 1300 kasus. Berdasarkan hasil penelitian ini dapat disimpulkan bahwa ditemukan infeksi *Mycobacterium fortuitum* dan *Mycobacterium chelonae-abscessus group* pada kucing dan anjing di Daerah Istimewa Yogyakarta. Kasus kucing dan anjing yang terinfeksi kedua spesies *Mycobacterium* tersebut berada di area penderita tuberkulosis di Daerah Istimewa Yogyakarta.

Kata Kunci: Deteksi, Kucing, Anjing, *Mycobacterium fortuitum*, *Mycobacterium chelonae-abscessus group*, Daerah Istimewa Yogyakarta.

ABSTRACT

Detection and Mapping of *Mycobacterium* spp. Infection in Cats and Dogs in the Special Region of Yogyakarta

Mycobacterium is a genus of bacteria that infects animals and humans. The infection can infect the skin, gastrointestinal tract and respiratory tract, and cause systemic infection and death and poses a significant zoonotic risk. The large population of cats and dogs in the Special Region of Yogyakarta potentially increases the spread of this disease, although case reports are limited. This study aimed to detect, identify and mapping *Mycobacterium* spp. infections in cats and dogs in Yogyakarta using a descriptive study and sampling technique to detect disease. Swab specimens (nasal, oropharyngeal, or wound) were collected from 70 cats and 61 dogs that showed clinical signs of *Mycobacterium* spp. infection such as sneezing with nasal secretions, chronic cough, enlarged lymph nodes, dermal nodules, non-healing wounds, caechexia, anorexia, anemia, vomiting, and/or diarrhea. All specimens were analyzed using acid-fast bacteria (AFB) examination with Ziehl-Neelsen staining, bacterial culture (HEYM), PCR, and DNA sequencing. Mapping used ArcGIS version 10.8 and the overall results of the study were analyzed descriptively. Swab specimen testing with AFB examination showed negative results, PCR examination showed 1 of 70 (1.4%) positive results (K84) *Mycobacterium* spp. in cat samples. Culture results showed there were five of the cat samples and seven of the dog samples that had colony growth with typical characteristics of *Mycobacterium* spp. Confirmation of bacterial culture isolates with AFB examination and PCR examination, showed there were 3 of 70 (4.3%) cat sample isolates and 1 of 61 (1.6%) dog sample isolates that were positive for *Mycobacterium* spp. Phylogenetic sequencing results showed that two bacterial species were identified from four positive samples, namely *Mycobacterium fortuitum* and *Mycobacterium chelonae-abscessus* group. Mapping results showed two cases of *Mycobacterium fortuitum* infection were found in owners confirmed to have TB and two cases *Mycobacterium chelonae-abscessus* group infection were in Yogyakarta City with more than 1300 cases of TB. This study concluded that *Mycobacterium fortuitum* and *Mycobacterium chelonae-abscessus* group. infections were found in cats and dogs in the Special Region of Yogyakarta. Cases of cats and dogs infected with both *Mycobacterium* species were located in areas with tuberculosis patients in the Special Region of Yogyakarta.

Keywords: Detection, Cat, Dog, *Mycobacterium fortuitum*, *Mycobacterium chelonae-abscessus* group, Special Region of Yogyakarta.