Molecular Investigation of *Rickettsia* in Human and Dogs

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**Background:** Rickettsioses are important zoonosis diseases. In 2010, we have been reported *Rickettsia* spp. related to *Rickettsia felis* in 67.4% flea specimens from dogs that come from various sites in Bangkok. Dogs reservoir competence for this pathogen and human infection have remained poorly understood. Therefore, this study detected *Rickettsia* spp. in human and dogs by real-time PCR and DNA sequencing.

**Methods:** Human buffy coat of patients with fever of unknown origin (n = 107) and blood samples from dogs with fever in Bangkok (n = 321) during 2010-2014 were studied. DNA were extracted and detected for citrate synthase (gltA) gene of *Rickettsia* genus by real-time PCR and probe detection. Positive finding was confirmed by DNA sequencing analysis.

**Results:** Rickettsial DNA was detected in 7 of 107 (6.54%) human buffy coat and in 13 of 321 (4.05%) dog blood specimens. Five of positive from human and 8 from dogs were identical to *Rickettsia felis* strain Brisbane (GenBank accession number: KF242471.1). Whereas, the other 2 positive form human and 5 from dogs were identical to those of *Rickettsia* spp. PU01-02 (GenBank accession number: KF666472.1).

**Conclusion:** These findings specify the new emerging rickettsiosis in dogs in Bangkok. In addition, this *Rickettsia* is a zoonotic transmission by dog’s fleas to human as an accidental host. Therefore, the implications for this disease control should be concern.