SEROEPIDEMIOLOGICAL STUDY ON LEPTOSPIROSIS AMONG LIVESTOCK FARMERS IN KUHDASHT, LORESTAN PROVINCE

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ABSTRACT

Leptospirosis is a worldwide zoonotic infection, which is usually severe and important disease. The aim in this study was seroepidemiological investigation on leptospirosis among livestock farmers of Kuhdasht, Lorestan province. The study was performed on 200 samples from livestock farmers of Kuhdasht in February 2014. The Microscopic Agglutination Test (MAT) method was used to determination of contamination of samples to leptospirosis. For the final dilution of leptospiral infection was performed dilute steps up to 1: 400 dilution. 48 serum samples (24%) were positive among 200 tested sera at the 1:100 dilution. Serum samples were shown positive reaction with two L. Grippotyphosa and L. canicola serovars. The prevalence of Grippotyphosa 66.67% and Canicola 33.33% were resulted by MAT. 31 samples (64.58%) were related to males and 17 cases (35.42%) females among 60 positive samples. The highest prevalence of
Leptospira serovars was founded in more than 50 years group with 16 cases. P. value based on gender was 0.01. Livestock farmers are one of the risk groups for leptospirosis disease, because of the presence of pathogenic Leptospira species in animals. Livestock farmers can prevent the occurrence of leptospiral infection by controlling their health and safety.

**Keywords:** Leptospirosis, Leptospira, Farmers, Kuhdasht, MAT

**INTRODUCTION**

*Leptospira* species: gram-negative and spiral-shaped are belonged to the family of leptospiraceae; and the phylum of spirochaetes (1,2). The genus *Leptospira* is divided into 20 species (9 pathogens, 5 intermediate and 6 saprophytes), based on phylogenetic analysis and DNA (3). Saprophytic *Leptospira* species do not cause any disease in humans (e.g., *L. biflexa*), and mild clinical signs are caused by intermediate species (3). Pathogenic *Leptospira* species are including *L. interrogans, L. borgpetersenii, L. santarosai, L. noguchi, L. weili, L. kirschneri, L. alexanderi, L. alstonii and L. kmetyi*, though, the pathogenicity of two species: *L. alstonii and L. kmetyi* have not known yet (3,4). About 260 serovars have been identified for *Leptospira* (5). Producing antibody in human against special LPS of each serovar established human immunity (5). Some *Leptospira* serovars were isolated from Malaysian hospitals Included Pyrogenes, Autumnalis, Canicola, Hebdomadis, Icterohemorrhagiae, Pomona, Grippotyphosa, Celledoni, and Sejroe by Tan et al in 1970 to 1986 (6). Pathogenic *Leptospira* species are being caused a zoonotic disease called leptospirosis (7). Leptospires are colonized in the renal tubules of animals (mammals sensitive), and host animals were remained infected for a long time (7). Livestocks (cattle and sheep) are the sources of leptospirosis, and they should be safe to prevent disease transmission to humans (8,9). *Leptospira* species are important issue of world public health; because of their long-term presence in the environment, transmitted to humans through damaged skin and mucosa, creations of mortality and economic losses (1,7,10). Half a million of leptospirosis cases are reported each year (45 cases per 100,000 people) around the world (11). Leptospirosis is more common in the warm seasons, tropical, and rainy areas (11,12).

The incubation for leptospirosis in humans is about 10 days and might be asymptomatic (12). Leptospirosis emerges in two forms: anicteric and icteric (13). Anicteric form is