

Abstract

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Background

Leptospirosis is thought to be the most widespread zoonotic disease in the world[1]. It poses a major public health threat to the developing and the developed world as an emerging infectious disease. Tens of millions of people are estimated to be affected annually,[2] resulting in 350,000 to 500,000 cases of severe disease[3]. The disease is endemic in humid, tropical, and subtropical areas of the world where most of the developing countries are located[4]. In Asia Pacific region, Latin America and in Southeast Asia, it is highly prevalent[5] and there has been a marked increase in the number of outbreaks and cases reported during the last two decades. Even though the disease is mostly endemic in rural settings,[6] an increasing number of cases and frequent outbreaks among urban dwellers[7,8] is a recent finding worldwide.

The first confirmed case of leptospirosis was reported in Sri Lanka in 1959[9]. Since then, series of confirmed cases were reported from Gampaha, Kegalle, Ratnapura, and Colombo districts during the 1960's and 70's. Disease notification data shows a steady increase in reporting of leptospirosis over the last two decades in Sri Lanka[10]. This may be either due to emerging disease or due to improved surveillance or both. In 2007, clustering of unidentified fever cases and few deaths were reported from Matara, Gampaha and Kandy district and some of these cases were later confirmed as leptospirosis. During 2008, Sri Lanka experienced the largest ever outbreak of leptospirosis in its history with 7406 reported cases[11].

Despite the fact that the Epidemiology Unit of Sri Lanka predicted the 2008 outbreak correctly, the public health system was unable to control the massive outbreak due to a scarcity of data. Previously, we reviewed leptospirosis in Sri Lanka and explained the need for confirmation of this outbreak through laboratory confirmation and the importance of investigating this probable leptospirosis outbreak[12]. However, studies on the epidemiology and determinants of local disease transmission are lacking, whereas clinical manifestations are discussed in several papers[13-15].

The global literature contains an extensive data base on the epidemiology of leptospirosis. Most of these studies are retrospective, cross sectional descriptive analysis of cases presenting during a specified time frame. Analytical studies provide the best epidemiological tools in determination and quantifying risk associations. Case control studies are used in this type of diseases, because they are cheap, rapid and easy to conduct. Cohort studies are unrealistic because of very low incidence rates necessitating a very large study sample, which is not cost effective. Analyses of risk factors of leptospirosis have been attempted using case control methodology in several studies[16-25]. Retrospective and prospective studies are available and some studies are based on cases identified through cross sectional antibody prevalence studies. Summary of published case control studies of leptospirosis and identified risk factors are summarized in Table [Table 11](#).