

Leptospirosis pulmonary haemorrhage syndrome

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Journal of the Ceylon College of Physicians, 2025, **56**, 58-64

Abstract

Sri Lanka remains a hotspot for leptospirosis and the incidence has been rising over the past few decades. Leptospirosis Pulmonary Haemorrhage Syndrome (LPHS) is a severe manifestation of leptospirosis, characterized by acute respiratory distress and significant pulmonary haemorrhage leading to devastating clinical outcomes. Recent epidemiological studies indicate a concerning rise in mortality rates attributed to LPHS, particularly in endemic regions such as Sri Lanka.

This article explores the clinical features, pathophysiology, diagnosis and management options of LPHS, emphasizing the need for heightened awareness among healthcare professionals. As a re-emerging zoonotic disease in an endemic country like Sri Lanka, severe leptospirosis such as LPHS needs prompt clinical diagnosis and management. Furthermore, we discuss the potential mechanisms underlying pulmonary haemorrhage, including immune-mediated injury due to cytokine storm and coagulopathy, which contribute to adverse outcomes in affected patients.

Among severe manifestations of leptospirosis, LPHS carries a high rate of mortality. Therefore, high degree of clinical suspicion is necessary, especially in resource poor settings where access to intensive care is limited. Thus, early diagnosis and timely intervention remain paramount in improving prognosis. Antibiotics, pulse steroid therapy, therapeutic plasma exchange and ventilatory support remains the main management options. In severe refractory hypoxemia veno-venous extra corporeal membrane oxygenation has been tried with some success.

We highlight the importance of continuous surveillance and ongoing research to further

enhance the knowledge regarding LPHS and its therapeutic options to address the growing public health challenge posed by this severe complication of leptospirosis.

Introduction


Leptospirosis is increasingly recognized as a significant and emerging global public health concern, owing to its epidemic potential and rising incidence in both developing and developed countries.¹ An estimated 1.03 million cases and approximately 60,000 deaths occur annually worldwide.¹ The disease is caused by spirochetes of the genus *Leptospira*, of which 14 species are currently considered potentially pathogenic. Out of which, nine definitively pathogenic and five classified as intermediate pathogens. Although a wide range of mammals can serve as reservoirs, rodents are the primary vectors responsible for human transmission.²

In recent years, leptospirosis has been classified as a re-emerging infectious disease. This re-emergence is largely attributed to climatic changes such as increased frequency of extreme weather events and flooding, particularly in tropical regions. Additionally, urbanization-related factors such as the proliferation of rodents in densely populated slums, increased human contact with contaminated environments, and the popularity of recreational water activities have contributed to the rising incidence of the disease in urban settings.³

In Sri Lanka, epidemiological surveillance data indicate a marked rise in leptospirosis cases over the past few decades, with a sharp increase observed in the last ten-year period beginning in 2015. In that year,

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