

TABLE 47-1

## Laboratory Test Results

<b>Variable</b>	<b>Admission</b>
Hematocrit (%)	26
White-cell count (per mm <sup>3</sup> )	26,525
Platelet count (per mm <sup>3</sup> )	145,000
Neutrophils (%)	91
Band Forms (%)	4
Aspartate aminotransferase (U/L)	88
Alanine aminotransferase (U/L)	93
Alkaline phosphatase (U/L)	147
Total bilirubin (mg/dL)	34
Direct bilirubin (mg/dL)	32
Albumin (g/dL)	3.2
Prothrombin time (seconds)	12
International normalized ratio	1.2
Serum Urea Nitrogen (mg/dL)	97
Creatinine (mg/dL)	3.6
Creatinine Kinase (U/L)	867
Ceruloplasmin (mg/dL)	28
Antinuclear antibodies	Negative
Anti-smooth muscle antibodies	Negative

## Discussion

Leptospirosis is a zoonotic infection that can cause a broad range of symptoms and disease in man. It is caused by the spirochete, *Leptospira interrogans* (Figure 47-1). A severe form of the infection, also known as Weil's disease, is characterized by profound jaundice, renal failure, and circulatory collapse; it carries a 10% risk of death. A syndrome of severe pulmonary hemorrhage is a rare complication of leptospirosis with mortality as high as 50%.<sup>1</sup> However, approximately 90% of infections do not result in clinically significant hyperbilirubinemia or illness. Factors that predict patient mortality include older age, acute renal failure, respiratory insufficiency, hypotension, and altered mental status.<sup>1</sup>

With the exception of the Polar Regions, the organism is found worldwide and most infections occur in the tropics.<sup>1</sup> The incidence of leptospirosis in the United States is estimated to be 0.05/100,000, but the true incidence is probably higher due to under-reporting of mild illness. For example, at a sexually transmitted disease clinic in Baltimore, an analysis revealed that 16% of 1150 patients had serologic evidence of exposure.<sup>2</sup> In many developing countries, leptospirosis can be endemic, particularly during times of flooding or widespread contamination of the drinking supply.<sup>1</sup>

The organism lives in warm, moist soil and can infect a wide range of wild and domestic animals, including mice, rats, dogs, cattle, and swine. Infection in cats is rare. Sea water, low pH, and chlorine are toxic to *L. interrogans*. Humans are incidentally infected usually through contact with infected animal urine. Risk factors for human infection are: living in an endemic area and prolonged exposure to infected animals or their urine. This includes farmers, slaughterhouse workers, and people who work in sewers.<sup>1</sup> Recently, outbreaks have occurred after athletic events that involved swimming in a body of fresh water. Fifty-two (11%) of 474 athletes competing in a triathlon in Illinois met the