

LEPTOSPIROSIS

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Background: Leptospirosis is a zoonotic disease that usually occurs during the flood and is generally transmitted through rat urine. Indonesia is a country with moderate risk of transmission of leptospirosis. Leptospirosis has a broad manifestation varying from self limited to severe disease. The gold standard examination of leptospirosis is microscopic agglutination test. Diagnose is divided into suspected, probable, and confirmed.



Figure 1: Distribusi Leptospirosis di Indonesia 2019.⁶⁻⁷

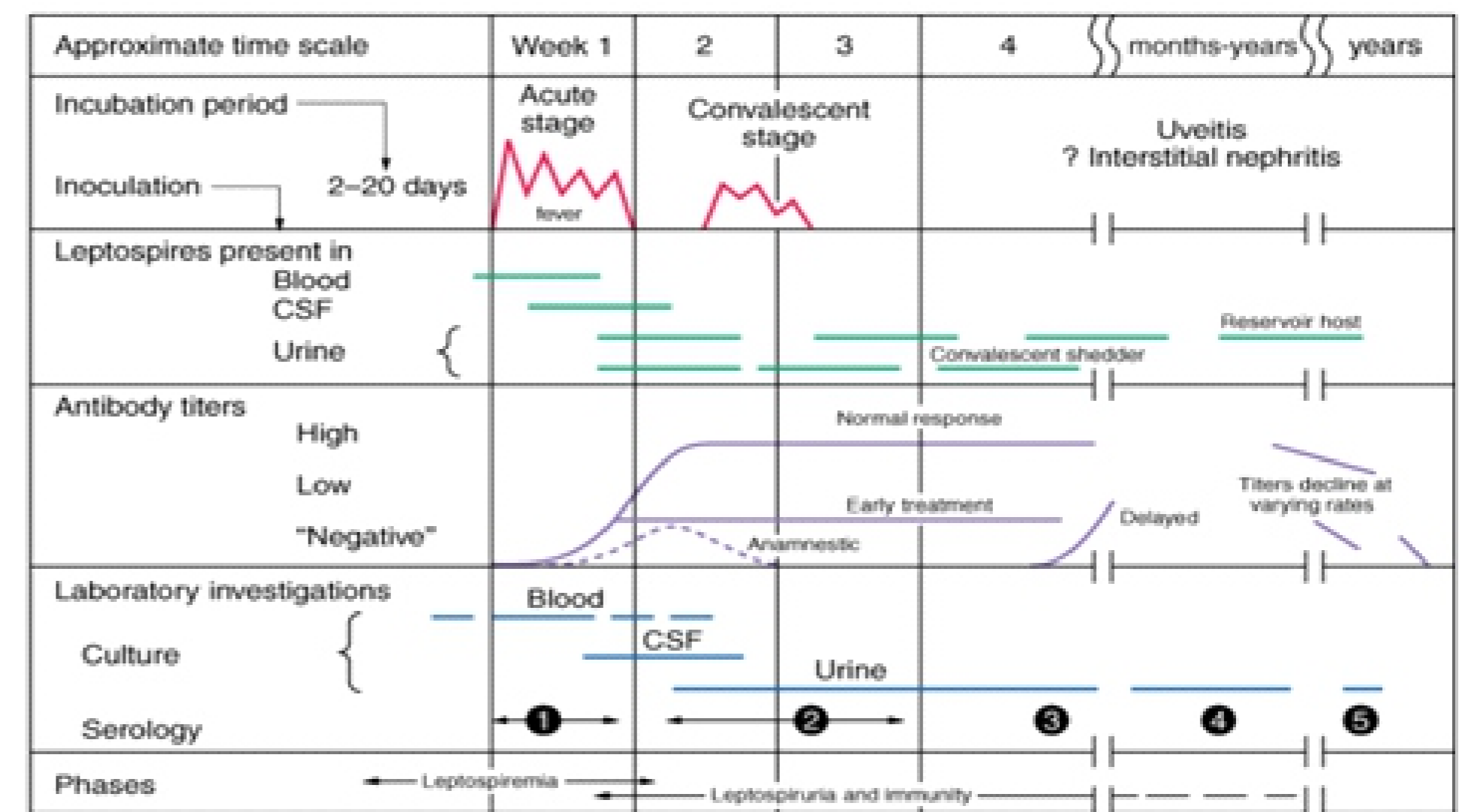


Figure 3: Leptospirosis Bifasik.⁹

How Leptospirosis is spread?



Figure 2: How Leptospirosis is spread.⁸

Case Description: A 35-year-old man with chief complaints of high fever for 7 days, severe bilateral calf myalgia, conjunctiva suffusion, nausea, vomiting, chest pain for 2 days and was initially treated at a local clinic. However, fever persisted, he was transferred to our emergency department on May 9, 2019. Hemogram showed haemoglobin 11.1 g/dL, peripheral white cell count was 10.500/mL with 90% polymorphonuclear cells, platelet count was 29.000/mL. Blood chemistry showed elevated ureum 181 mg/dL, creatinine 6.80 mg/dL, free calcium 4.59 mEq/L, and decreased of sodium 132 mEq/L, bilirubin (total/direct) of 6.34/2.19 mg/dL, aspartate aminotransferase of 154 U/L, alfa amylase 1278 U/L, lipase 154.7 U/L. Urinalysis showed blood 250 u/L, protein 75/+ mg/dL, glucose 1+/100 mg/dL, microscopic hematuria, leucocyte and ephitel. Coagulation study showed elevated fibrinogen concentration of 469.1 mg/dL. Gas blood analysis showed compensated alcalosis respiratory. Strip test for malarial parasite was also negative. Viral screening tests were negative. Leptospira Immunoglobulin M was reactive with 23.6 (reactive > 11), indicating for leptospirosis. Electrocardiogram showed suspect pericarditis. Abdomen ultrasonography showed Cholecystitis. This patient showed ikterik and renal parameter gradually improved and had dialysis.

Based on the data above, the diagnosed patient was leptospirosis with acute kidney injury stage III, suspect pericarditis, cholecystitis, stress ulcer, and anemia. The patient was received Ceftriaxone, ciprofloxacin and metronidazole therapy. On futher follow-up, patient was recovered fully.

Discussion: Leptospirosis has clinical manifestations ranging from a flu-like illness to a severe or fatal Weil's syndrome. This patient suggested has Weil' disease by elevated levels of serum creatinine, ureum, hyperbilirubinemia, aminotransferase elevated and failure renal fuction. When a patient is jaundiced, the bilirubin level is markedly raise but aspartate aminotransferase may not rise much beyond the upper limit of normal. Joundice in this patient is not associated with fulminant hepatic necrosis or hepatocellular damage, but rather with abnormal laboratory values.

Hematologic abnormalities are variable but common leukocytosis (typical in severe disease), leukopenia, hemolytic anemia, mild to moderate anemia, and thrombocytopenia. The anemia frequently observed in Weil's syndrome has been ascribed on clinical impression to blood loss, renal failure, and/ or an ill-defined hemolytic process. This patient has mild anemia, urinalysis showed Akut Tubular Necrotic and over activation of fibrine and weaned to supplemental oxygen nasal cannula.

The IgM ELISA is particulary useful in making an early diagnosis, since it is reactive as early as 2 days into the illness, a time when the clinical manifestations may be nonspecific, and it is extremely sensitive and spesific. The clinical manifestations such as AKI stage III, suspect pericarditis, cholecystitis, stress ulcer has been related to toll-like receptor activation from leptospira lipoproteins. Cefriaxone is a drug of choice in severe leptospirosis and especially effective if started within the first 4 days of illness.

Conclusion: Leptospirosis is a frequently encountered infectious disease in Indonesia and other parts of the world. Generally, the prognosis is good, although, sequelae can occur.

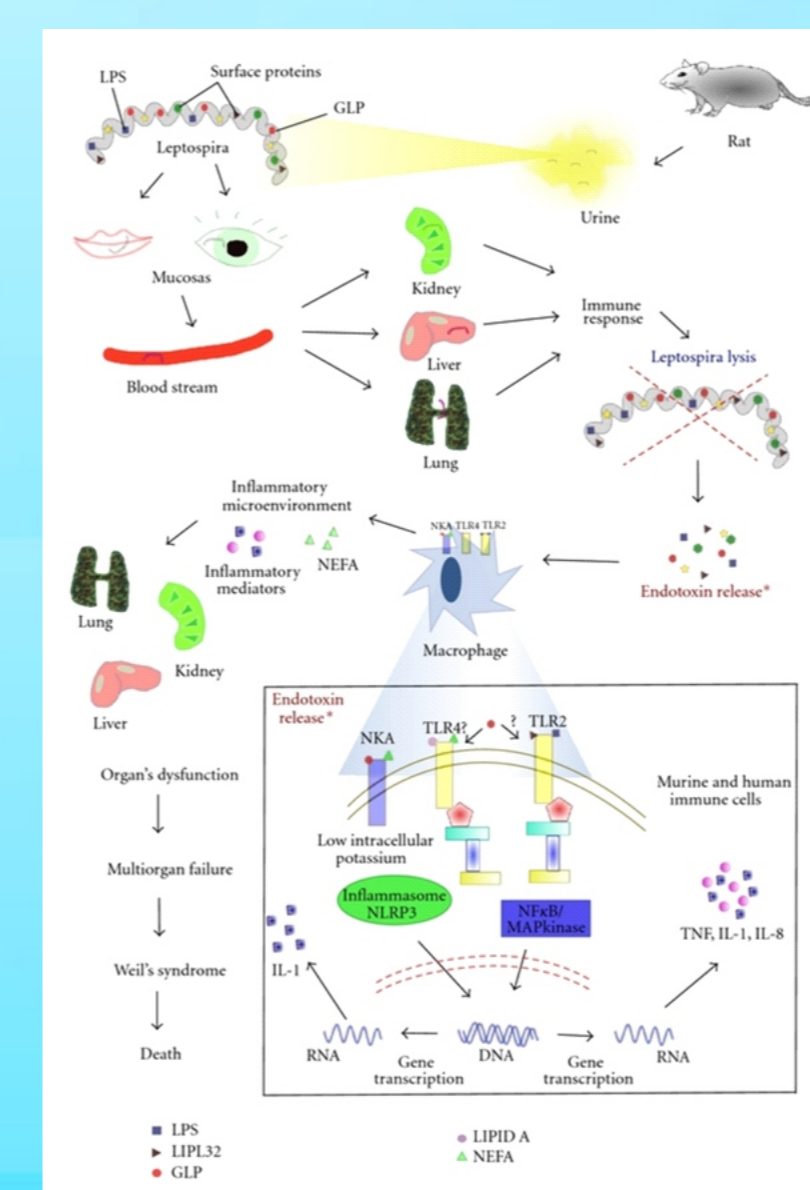


Figure 4: Severe Leptospirosis.¹⁰

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