Leptospirosis (Leptospirosis) แบบ książki (Paul N. Newton) 1,2

1. โรคที่ไม่เคยมีการรายงานในประเทศไทย หรือโรคที่เป็นโรคเรื้อรัง โรค Leptospirosis มีความอิจฉาในด้านการป้องกัน เพื่อป้องกันและการรักษา โรค Leptospirosis ได้รับการกล่าวถึงว่า มีมิสเซิล Leptospira ที่ไม่ได้รับการรักษา (Taxonomy)

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Leptospirosis (Leptospirosis) is a zoonotic disease caused by Leptospira. Leptospirosis is a disease of animals, particularly those in the Order Spirochaetales. Leptospires are 5-20 µm in length and can be found in water, soil, and animal habitats. They are known to cause a wide range of clinical symptoms, including fever, jaundice, and renal failure.

**Leptospires**

Leptospires are a group of bacteria that can cause leptospirosis. They are classified in the Order Spirochaetales and are known for their spiral shape. They are typically found in water, soil, and animal habitats. Leptospires are capable of causing a wide range of clinical symptoms, including fever, jaundice, and renal failure.

**Tick-borne Enzootic Fever (TBE)**

Tick-borne enzootic fever (TBE) is a zoonotic disease that can be caused by Leptospira. It is transmitted to humans through the bite of an infected tick. The disease is characterized by fever, headache, and malaise. It can also lead to more serious complications such as meningitis and encephalitis.

**MLST (Multilocus Sequence Typing)**

MLST is a method used to identify and classify Leptospira strains. It is based on the sequencing of multiple genes from the bacterial genome. This method has become increasingly popular as a tool for epidemiological studies and for the identification of new strains of Leptospira.

**Icterohaemorrhagiae Serovar**

The icterohaemorrhagiae serovar of Leptospira is responsible for a severe form of leptospirosis known as Weil's disease. It is characterized by fever, jaundice, and renal failure. The disease is often fatal if left untreated. It is found primarily in South-East Asia and the Pacific region, but cases have been reported worldwide.

**L. interrogans**

L. interrogans is the most common species of Leptospira and is responsible for the majority of leptospirosis cases worldwide. It is found in a wide range of animal species and can be transmitted to humans through contact with infected animals or their urine. The disease is characterized by fever, headache, and malaise. It can also lead to more serious complications such as meningitis and encephalitis.

**L. pomona**

L. pomona is a less common species of Leptospira and is primarily found in the Pacific region. It is responsible for a form of leptospirosis known as the American form. The disease is characterized by fever, jaundice, and renal failure. The disease is often fatal if left untreated.

**L. bratislava**

L. bratislava is a less common species of Leptospira and is primarily found in Europe. It is responsible for a form of leptospirosis known as the European form. The disease is characterized by fever, jaundice, and renal failure. The disease is often fatal if left untreated.

**L. kunmingensis**

L. kunmingensis is a less common species of Leptospira and is primarily found in China. It is responsible for a form of leptospirosis known as the Kunming form. The disease is characterized by fever, jaundice, and renal failure. The disease is often fatal if left untreated.
Leptospires are widespread in the environment, causing infection when people come in contact with the infected water. The infection is transmitted through contact with contaminated water or soil, and through the bite of infected animals. Leptospires are particularly associated with rodents and their excreta, which can contaminate water sources.

**Human Leptospirosis**

Leptospires are resistant to disinfection and can survive in contaminated water for months. The infection is usually transmitted to humans through contact with infected water or soil, or through the bite of infected animals. Leptospires are particularly associated with rodents and their excreta, which can contaminate water sources.

**Diagnostic Methods**

Several diagnostic methods are available for the detection of leptospirosis in humans. These include:

- **Serology:** This involves detecting antibodies in the blood against specific Leptospira serovars. The presence of antibodies indicates an immune response to previous infection.

- **Culture:** This involves growing Leptospira in a laboratory culture, which is possible in specialized laboratories.

- **PCR:** This involves detecting Leptospira DNA directly from clinical samples.

**Treatment**

The treatment of leptospirosis depends on the severity of the infection. Mild infections may be managed with supportive care, while severe infections may require antibiotics such as doxycycline or penicillin.ery.

**Prevention**

Preventing leptospirosis involves avoiding contact with infected water or soil, and avoiding the bite of infected animals. This can be achieved through measures such as proper disposal of animal excreta, avoiding contact with contaminated water sources, and avoiding contact with infected animals.

**Conclusion**

Leptospirosis is a disease caused by Leptospira bacteria, which are widespread in the environment. The infection is transmitted to humans through contact with infected water or soil, or through the bite of infected animals. Leptospirosis is a zoonotic disease, meaning that it can be transmitted from animals to humans. The disease is often mild, but can be severe in some cases. Leptospirosis is diagnosed through serology, culture, or PCR. Treatment options include supportive care and antibiotics. Prevention involves avoiding contact with contaminated water sources, and avoiding contact with infected animals.
Amylase, آلزایمر، سرطان ناحیه‌ای، سرطان پستان، چربی‌سفید‌ساز، erythema nodosum و یا آکنه. تومورات این نوع اغلب به‌طور معکوس در یک یا چند بویض‌ساز واقع شده و در صورت بروز نگرانی ممکن است نیاز به بررسی نهایی داشته باشند. در صورتی که نوع یالی در این گروه قرار داشته باشد، باید به‌صورت مراحل درمانی مناسبی به‌طور عاجل درمان شود. در صورتی که نوع یالی در این گروه قرار داشته باشد، باید به‌صورت مراحل درمانی مناسبی به‌طور عاجل درمان شود.

- Haemolytic uraemic syndrome (HUS) و disseminated intravascular coagulation (DIC).

- Guillaume-Barré syndrome.

- Relapsing fever.

- Leptospires.

- Amylase.

- Wuthiekanun fever.

- Haemolytic uraemic syndrome (HUS) و disseminated intravascular coagulation (DIC).

- Transaminases.
Killed or formalinized antigens were used in two prospective, open-label, randomized trials (Pitout et al., 1995; Levett, 2001; Ahmed et al., 2006), which used serovars of Leptospira to induce antibodies. The trials compared DNA macroscopic slide-agglutination test (MAT) and microscopic agglutination test (MAT) with and without maturation. A murine model was used to study the kinetics of antibody production. The trials also evaluated the durability of antibody response and the efficacy of booster doses. The results showed that killed or formalinized antigens were effective in inducing antibodies, but the serovar specificity was limited.

In a study by Leitner et al. (2008), a prospective, open-label, randomized trial was conducted to evaluate the efficacy of killed whole-leptospire vaccines. The study included 250 participants, and the vaccines were administered in a single dose. The study showed that the killed whole-leptospire vaccines were effective in inducing antibodies, but the serovar specificity was limited.

In summary, killed or formalinized antigens are effective in inducing antibodies, but the serovar specificity is limited. Further studies are needed to improve the serovar specificity of leptospire vaccines and to identify effective adjuvants.
Leptospires. The serovars were identified using immunochromatographic (Leptotek) and enzyme-linked immunosorbent assay (ELISA; Panbio) tests. In the control group, IgM antibodies were detected in 26/19 (19%) patients during autumnalis. The sensitivity of the MAT test was 47.3% and the specificity was 75.5%. The sensitivity of the ELISA test was 60.9% and the specificity was 65.6% (Blacksell et al., 2006).

Kawaguchi et al. (1984) observed a significant association between scrub typhus and leptospirosis. The presence of specific antibodies against leptospirosis was detected in 40.6% of patients with scrub typhus, 23.9% (95% CI 19.7–28.0%) of patients with scrub typhus and 21.2% (95% CI 17.1–3.58%) of patients with scrub typhus and leptospirosis (OR, 2.12; 95% CI 1.25–3.58). The presence of specific antibodies against leptospirosis was detected in 1.92% of patients with scrub typhus (OR, 1.92; 95% CI 1.24–2.98), and the presence of specific antibodies against leptospirosis was detected in 1.90% of patients with scrub typhus (OR, 95% CI 1.17–3.09). The presence of specific antibodies against leptospirosis was detected in 12.8% of patients with scrub typhus and leptospirosis, 12.8% of patients with scrub typhus, and 12.8% of patients with scrub typhus and leptospirosis (Syhavong et al., 2007). In the control group, the presence of specific antibodies against leptospirosis was detected in 26/19 (19%) patients during autumnalis. The sensitivity of the MAT test was 47.3% and the specificity was 75.5%. The sensitivity of the ELISA test was 60.9% and the specificity was 65.6% (Blacksell et al., 2006).


An open randomized controlled trial of desmopressin and pulse dexamethasone as adjunct therapy in patients with pulmonary involvement associated with severe leptospirosis. *Clin Microbiol Infect* 16: 1207-12.


A Review: Leptospirosis

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Abstract

Leptospirosis is a zoonotic bacterial infectious disease caused by pathogenic species, which are highly motile environmental spirochaetes. The taxonomy of leptospires is rapidly changing as their diversity is examined but pathogenic *Leptospira* species are classified into more than 200 serovars. It especially affects young men who work in an environment where there are infected hosts, soil or water in both rural areas and urban slums. Diverse vertebrates, especially rats, are the most important reservoirs. Leptospires colonize rodent renal tubules, leading to chronic excretion. There is also recent evidence that humans may be chronic excreters. The incidence is highest during and after the rainy season and the incubation period is usually 5 to 14 days. Ninety per cent of cases are anicteric. The initial
septicaemic phase is characterised by fever with chills, myalgia, headache, abdominal pain, vomiting, and conjunctival suffusion. Hepatic & renal dysfunction, meningitis and leptospirosis-associated pulmonary haemorrhage syndrome may develop from the end of the first week of illness. When jaundice occurs it is associated with only mild elevations in transaminases – a useful clue distinguishing such patients from those with viral hepatitis. There are three main current methods for the laboratory diagnosis of leptospirosis, culture, serology, and polymerase chain reactions but none of these are accessible and accurate diagnostic tools. Rapid diagnostic tests are based on antibody detection, which as anti-leptospiral antibodies rise in the second week, are unlikely to be diagnostically useful when patients present in the first week of illness. Parenteral cefotaxime, ceftriaxone, penicillin and doxycycline are efficacious for severe leptospirosis. Oral penicillins and tetracyclines are commonly used to treat less severe disease. Leptospirosis is a very important disease in rural Laos where exposure to water through farming, fishing and travelling is so common. As leptospirosis is treatable with relatively inexpensive antibiotics it is an important diagnosis to make. However, empirical treatment is complicated by the difficulties in distinguishing leptospirosis from scrub typhus and murine typhus – the latter do not respond to cephalosporins and penicillins but do to tetracyclines. Laboratory diagnosis is difficult as there are no local MAT facilities and very limited PCR and culture facilities and no rapid tests deployable with sufficient sensitivity and susceptibility. More research is needed to improve laboratory diagnostic techniques.

**Keywords:** Leptospirosis, *Leptospira*, review, Laos

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