

# Leptospirosis in Italy, a neglected disease

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## ABSTRACT:

— We report the case of a 49-year-old homeless and alcoholic man, who presented with fever, cough and fatigue and developed acute kidney and liver failure after admission. Serological and urine test for *Leptospira* were positive. The patient was treated with ampicillin-sulbactam with complete recovery.

— **Keywords:** Leptospirosis, Dialysis, Alcoholic.

## INTRODUCTION

Leptospirosis is a widespread zoonosis. Natural reservoirs are savage and domestic infected animals. Humans develop the disease by indirect contact with urine-polluted water and soil. Leptospirosis is a professional and recreational disease<sup>1</sup>. In Italy, the burden of disease is probably underestimated and the incidence is higher in the North-East of the country<sup>3</sup>. Leptospirosis is usually a systemic febrile illness, characterized by lung involvement, jaundice, acute renal and liver failure, with hemorrhagic diathesis, often requiring intensive care unit (ICU) admission and renal replacement therapy<sup>4</sup>. Diagnosis is often difficult because only a limited number of specialized centers can perform specific serological and molecular tests.

## CASE REPORT

A 49-year-old alcoholic and homeless man was admitted to our Infectious Diseases Unit with a 7-day history of fever, cough, weight loss and intense fatigue. Blood tests showed neutrophilic leukocytosis, hemolytic anemia and thrombocytopenia, increased inflammatory markers (fibrinogen 8.20 mg/dl, PCR 244 mg/L), acute kidney failure with anuria (creatinine 3.6 mg/ml, estimated glomerular

filtration rate 25 ml/min), jaundice (total bilirubin 10.3 mg/dl, direct bilirubin 9.4 mg/dl) and liver failure. Physical examination showed conjunctival injection, scleral and skin jaundice and confusion. Chest x-ray was suggestive for interstitial pneumonia [1]. Serological tests for HIV, HAV, HBV, HCV, TPHA, Widal-Wright, Weil-Felix, CMV, EBV, toxoplasma were negative. Acid-fast bacilli smear and culture and blood cultures were also negative. The patient developed a rapid deterioration of renal function (creatinine 7.6 mg/dl) with persistent anuria, unresponsive to fluid administration and diuretic therapy with intravenous furosemide [4], as well as a decrease of platelet count (33,000/ $\mu$ l) and hepatic function (total bilirubin 25 mg/dl, direct bilirubin 23.03 mg/dl). Hemodialysis was started. Considering the precarious sanitary conditions, as well as the environmental and personal risk factors (alcoholism, crumbling housing), leptospirosis was suspected. As a consequence, antibiotic therapy was switched to ampicillin-sulbactam and urine and serum samples were sent to the National Reference Hospital INMI L. Spallanzani for *Leptospira* and *Listeria* tests (positive serology >1:400 and urine polymerase chain reaction for *Leptospira*, negative serology for *Listeria*). In the following days, the patient progressively improved, with normalization of blood tests. After two weeks, the patient was finally discharged in good clinical conditions.

## CONCLUSIONS

This case report underlines that leptospirosis is still a neglected disease, which can affect people with some risk factors such as alcoholism, homelessness, poor hygiene. Leptospirosis is still associated with high mortality and morbidity rate. Different antibiotic therapies have been reported<sup>5,6</sup>, with the most consistent data referring to ampicillin. However, early diagnosis, renal replacement and ICU support are crucial. Etiological diagnosis is often difficult because of the limited number of specialized centers available in Italy. A multidisciplinary approach, including infectious disease and microbiology specialists, nephrologists and intensivists is essential for a good outcome.

## References

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