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Monguilod P., Gallardo B.

Invasive alien mammals pose zoonotic risks to human health in Europe

(2026) One Health, 22, art. no. 101307

DOI: 10.1016/j.onehlt.2025.101307

ABSTRACT: The rise in zoonotic diseases is accelerating, with climate change expected to further intensify this trend. Invasive Alien Species (IAS) play an important role in the emergence and spread of zoonotic diseases by introducing both existing and novel pathogens to the regions they invade. Despite this, research on the role of IAS in spreading zoonotic diseases remains limited. Our study investigated the zoonotic risks posed by eight invasive mammal species prioritized for management in Europe. On average, each species was found to transmit 16 pathogens capable of causing severe diseases in humans, including Echinococcosis, Leptospirosis, Lyme neuroborreliosis, and Encephalitis. We identified central and western Europe as significant disease hotspots. Climate change is facilitating the expansion of IAS into new areas, as warmer temperatures make previously inhospitable regions suitable. Future projections indicate a northeastward shift in their suitability by 2050. These changes vary by species, with the Siberian chipmunk losing up to 45 % of its suitability, while the gray squirrel could see a 26 % increase under a high-emissions scenario. Finally, we found that 71 % of the human population lives in areas highly suitable for IAS establishment. Our findings underscore the health risks associated with IAS and highlight the need for further research into their role in disease dynamics. Addressing this issue is essential for developing effective public health strategies and mitigating future zoonotic disease outbreaks.

LANGUAGE OF ORIGINAL DOCUMENT: English

Rajan D., Kumar B.S., Kharkongor M.A., Lyngdoh E.C., Albert S.

Emergence of human leptospirosis in Meghalaya, India: clinical evidence from a hilly non-endemic region

(2025) Indian Journal of Medical Research, 162 (4), pp. 546 - 551

DOI: 10.25259/IJMR_1134_2025

LANGUAGE OF ORIGINAL DOCUMENT: English

Abdellatief A., Arhinful J., Miller K.E., Adidam S., Asfaw, M., Santiago-Gonzalez J.C., Laurin J.

Severe hyperbilirubinemia and multi-organ failure in a patient with Weil's disease

(2025) American Journal of Gastroenterology, 120 (10S2), pp. S729 - S729

DOI: 10.14309/01.ajg.0001141024.52188.43

LANGUAGE OF ORIGINAL DOCUMENT: English

Pinto Chaves Bezerra N., Paiva Alves I., Silva Rodrigues L., Mendes Silva J., de Jesus Dos Santos G., Monteiro Mendes Da Silva V., da Silva Rodrigues M.V., Bezerra Cutrim D., Santos Pereira H., Correa Silva Coimbra V., de Moraes Pereira H.

Leptospira spp. serogroups circulating in two neotropical fish species in a quilombola area in Maranhão State

(2025) Caldasia, 47, art. no. e109173

DOI: 10.15446/caldasia.v47.109173

ABSTRACT: Despite fish's relevance as a reservoir of several zoonotic bacteria, their role in maintaining and outspreading Leptospira remains poorly known. The objective of the study was to report the serovarieties of

Leptospira spp. circulating in Hoplerythrinus unitaeniatus and Cichlasoma bimaculatum living in a quilombola area in Maranhão State, Brazil; 42 fish specimens (21 H. unitaeniatus and 21 C. bimaculatum) were captured and transported alive in isothermal boxes filled with water, from the location they were placed into a laboratory environment. Blood samples of these fish were collected through brachial vein conduit and its serum was subjected to anti-leptospiral agglutinins assessment against 25 serovarieties belonging to the Leptospira spp. complex, based on the serum-agglutination microscopy technique. Total anti-leptospiral agglutinins prevalence reached 80,95 % (n=34/42) – with titles that range from 1:100 to 1:400. The most frequent serovarieties belonging to the Leptospira complex were Pomona, Hebdomadis, Butembo, Copenhageni, Cynopteri, Panama, Sentot, Bratislava, Icteriohaemorragiae, Pomona variant Bubalinos, Pyrogenes, Whitcombi. Leptospirosis is a globally documented infectious disease observed in several animal species and in humans. It infected native fish caught in Ponta Bonito quilombola community at high prevalence rate. It is essential investigating fish's infection sources and the application of proper measures to prevent leptospirosis in this geographic area.
LANGUAGE OF ORIGINAL DOCUMENT: English

Saha D., Baddula S.

A tale of dual battle against *Leptospira* and scrub typhus coinfection at a peripheral hospital in Kashmir

(2026) Medical Journal Armed Forces India

DOI: 10.1016/j.mjafi.2025.11.008

ABSTRACT: Scrub typhus results from infection by Orientia tsutsugamushi, a bacterium transmitted to humans via larval mite (chigger) bites. On the other hand, Leptospira interrogans causes leptospirosis, a zoonotic bacterial infection typically contracted through exposure to contaminated water or soil. Scrub typhus and leptospirosis are important zoonotic infections increasingly recognized as public health concerns in tropical regions like India. Transmitted by mites and contact with contaminated water or soil respectively, they often cause nonspecific febrile illness, leading to frequent misdiagnosis and delayed treatment. Kashmir, with its diverse ecological settings including forests, agricultural fields, and high-altitude areas, is emerging as an endemic zone for both diseases. The region's rural, hilly terrain and variable climate favor the survival of disease vectors. Recent data show a rising incidence of scrub typhus alongside leptospirosis reports, especially after monsoon and flood seasons facilitating infection spread.
LANGUAGE OF ORIGINAL DOCUMENT: English

Pourasghari H., Rezaei M.A.

Policy options for prevention of leptospirosis epidemics: a scoping review

(2025) Iranian Journal of Public Health, 54 (12), pp. 2647 - 2659

ABSTRACT: Background: Leptospirosis is a widespread zoonotic disease causing over one million cases and 60,000 deaths annually. This review aimed to identify and assess policy options for leptospirosis prevention using the One Health approach and One Health Governance Index (OHGI) framework. Methods: PubMed, Web of Science, Scopus, and Cochrane Library were searched for full-text academic articles, along with Google Scholar and reference lists from Jan 2008 to Dec 2023. A scoping review was conducted following Arksey and O'Malley's framework and PRISMA-ScR guidelines. Articles were retrieved from major databases using defined . Eligible studies focused on community-based policies for human leptospirosis prevention. Two reviewers independently assessed quality, and data were categorized by One Health domains and analyzed

using the OHGI framework. Results: Forty-two studies were included. Common policy strategies involved sanitation education, medical training, surveillance of humans, animals, and environments, legal controls on exposure sources, infrastructure upgrades, and vaccination. Tools like GIS and climate data supported preparedness. Policy options most addressed rule of law, effectiveness, and equity. Conclusion: Preventing leptospirosis epidemics demands coordinated, context-specific One Health policies that address implementation gaps and promote equity across vulnerable settings.
LANGUAGE OF ORIGINAL DOCUMENT: English

Ristiyanto R., Handayani F.D., Wimbi K., Arief M., Widoretno W., Maha M.S., Lienggonegoro L.A., Pangaribuan H.U., Suryaningtyas N.H., Gasem M.H.

Application of leptospirosis surveillance study at primary health care center in Banyumas and Demak, Central Java, Indonesia

(2025) Open Veterinary Journal, 15 (11), pp. 5961 - 5970
DOI: 10.5455/OVJ.2025.v15.i11.51
ABSTRACT: Background: Leptospirosis remains one of the most significant zoonotic diseases in tropical regions such as Indonesia. It is characterized by high morbidity and mortality rates, with case fatality rates ranging from 5% to 15%, and frequent underreporting due to nonspecific clinical symptoms, which contributes to underdiagnosis in up to 40%–60% of suspected cases. Surveillance at the Public Health Care Center (PHC) level is crucial for early case detection and outbreak control in endemic areas. Aim: This study aimed to develop and implement a leptospirosis surveillance model at primary health care facilities in two endemic regencies in Central Java, Indonesia, Banyumas and Demak districts, to improve early detection, reporting, and response capacity. Methods: The research on leptospirosis surveillance by the PHC was conducted from January 2018 to December 2019 in Banyumas and Demak Regencies, Central Java. This research is a time-series study that encompasses case findings, diagnosis, and laboratory detection of leptospirosis. Case findings were carried out both passively (at health centers) and actively (within the community) using the WHO-SEARO clinical symptom criteria. Results: In Banyumas Regency, 121 suspects, 106 probable, and 44 confirmed cases of leptospirosis and in Demak Regency between 2018 and 2021, 73 cases of leptospirosis were reported, with 22 deaths, resulting in a case fatality rate of 30.1%. A total of 51 patients recovered from the disease. While the hospital reported 63 leptospirosis cases and 9 related deaths, surveillance in Demak Regency identified 72 suspected, 67 probable, and 23 confirmed cases with no reported deaths. However, a Demak hospital recorded 172 cases and 19 deaths. Negative binomial regression revealed a significant negative relationship between cases reported by PHCs and hospitals (coef=−0.050; p=0.012), along with a decreasing trend in hospital cases over time (coef=−0.010; p=0.046). Conclusion: Leptospirosis surveillance data can be used to identify focal areas of leptospirosis endemicity. The application of the WHO-SEARO (2009) clinical criteria and rapid diagnostic tests supports the identification of suspected and probable cases of leptospirosis at the PHC level.
LANGUAGE OF ORIGINAL DOCUMENT: English

Decoster C., Lefère L., Raes E., van Loon G., Dufourni A.

Equine leptospiral pulmonary haemorrhage syndrome: an atypical manifestation of equine leptospirosis

(2025) Equine Veterinary Journal
DOI: 10.1002/evj.70138

ABSTRACT: Background: Leptospirosis is a widespread zoonotic, infectious disease associated with abortion, stillbirth, as well as liver and kidney failure. Leptospiral Pulmonary Haemorrhage Syndrome (LPHS) has increasingly been reported in human and canine patients infected by Leptospira and is associated with a high fatality rate. In equine medicine, pulmonary haemorrhage has mainly been described in foals with leptospiral infections, but rarely in adult horses. Objectives: To characterise the clinicopathological features of pulmonary haemorrhage as a distinct disease entity in adult horses with leptospirosis, termed Equine Leptospiral Pulmonary Haemorrhage Syndrome. Study Design: Retrospective case series. Methods: The clinical presentation, with blood biochemical, tracheobronchoscopic, ultrasonographic, and radiographic findings, as well as treatment and outcomes, is described in six adult horses. Leptospiral infection was confirmed by urinary PCR analysis and paired serology. Results: Cases had pulmonary haemorrhage accompanied by concurrent azotaemia. Thoracic radiographs revealed a structured interstitial pattern, with marked accentuation in the caudodorsal lung fields in all cases. Leptospiral infection was confirmed in 5/6 horses by urinary PCR analysis, and in all horses by early seroconversion. Four cases survived to hospital discharge. Main Limitations: Small case series, incomplete clinical data, limited long-term follow-up. Conclusions: The term Equine Leptospiral Pulmonary Haemorrhage Syndrome is proposed to designate equine leptospirosis characterised by acute respiratory distress caused by pulmonary haemorrhage associated with blood biochemical disturbances including hyponatraemic and hypochloraemic azotaemia and increased serum amyloid A concentrations. The exact pathophysiology of pulmonary haemorrhage in equine leptospirosis remains incompletely elucidated. Urinary PCR analysis and paired serum microagglutination assays were useful to diagnose active leptospiral infection. The diagnostic benefit of tracheobronchial secretions remains an area for further investigation considering its potential source as a biohazard.
LANGUAGE OF ORIGINAL DOCUMENT: English

Tsiamis G.

Commentary on: serosurvey, cultural, and molecular detection of circulating *Leptospira spp*. in different animals in selected areas of Bangladesh

(2025) German Journal of Veterinary Research, 5 (3), pp. 111 - 113
DOI: 10.51585/gjvr.2025.3.0152
LANGUAGE OF ORIGINAL DOCUMENT: English

Bilung L.M., Tahar A.S., Pui C.F., Bakeri M.K.S., Suut L., Ngui R., Kira R., Apun K.

Leptospira and leptospirosis: a review of species classifications, genomes, morphological structures, antimicrobial resistances, transmissions, and clinical manifestations

(2026) Current Microbiology, 83 (2), art. no. 122
DOI: 10.1007/s00284-026-04722-7
ABSTRACT: Leptospirosis, also known as “rat-urine disease”, is a neglected zoonotic and waterborne disease that is caused by Leptospira spp. This disease is transmitted by direct and indirect exposure to the urine and stool of infected animals. The current estimate has highlighted that leptospirosis has caused at least one million cases and 60,000 deaths, with high endemicity in tropical regions. With climate change, urbanisation, and increasing human-animal interaction, the threat of leptospirosis and other zoonotic diseases will continue to emerge. Investing in multidisciplinary research, technology, and global collaboration is critical to anticipate, detect, and respond effectively to these evolving threats.

LANGUAGE OF ORIGINAL DOCUMENT: English

Sueasuay J., Boonwong C., Prachongsai I., Tantibhedhyangkul W., Wongprompitak P., Suputtamongkol Y., Ekpo P., Inthasin N.

Evaluation of the conserved subunit of the pathogenic *Leptospira* FlaB protein-based immunochromatographic test for the diagnosis of acute leptospirosis

(2026) Microbiology Spectrum, 14 (1), pp. e0030725

DOI: 10.1128/spectrum.00307-25

ABSTRACT: We have computationally identified a conserved region of flagellin B (FlaB) protein that is present only in pathogenic Leptospira but absent in non-pathogenic Leptospira or other flagellated bacteria. The predicted FlaB subunit protein (sFlaB) comprised a sequence of 50-amino acids: 140FARGSRVASMWFHMGPNQNQRERFYIGTMTSKALKLVKADGRPIAISSPG189. The nucleotide sequence encoding sFlaB was amplified by polymerase chain reaction from Leptospira genomic DNA and cloned into a pET100 expression vector. The recombinant sFlaB was expressed in Escherichia coli BL21 and affinity purified to serve as an antigen to the immunochromatographic test (ICT) designed for specific IgM (ICT-IgM) and IgG (ICT-IgG) antibody detections. We evaluated 109 serum samples, including 46 from leptospirosis patients (29 acute sera and 17 convalescent sera) and 63 from patients with other acute febrile illnesses (46 acute sera and 17 convalescent sera). Compared to the paired serum results of the indirect immunofluorescent assay, the sensitivity of ICT-IgM and ICT-IgG was 80.40% and 71.73%, with specificities of 84.13% and 73.01%, respectively. For acute leptospirosis sera, ICT-IgM showed a sensitivity of 75.86% and a specificity of 89.13%, while ICT-IgG had a sensitivity of 68.97% and a specificity of 71.94%.IMPORTANCELeptospirosis is a zoonotic disease caused by pathogenic leptospires. The infected patient presents with a mild to severe febrile illness and may die while receiving inappropriate treatment. The microscopic agglutination test, the current gold standard method, is laborious and requires the use of live panel leptospires, which should only be done in a reference laboratory. In addition, the results of the paired serum samples are required for an accurate interpretation. Polymerase chain reaction (PCR) was used instead for diagnosis in the acute phase of infection. However, PCR requires an expensive machine and a specialist to analyze the results. Therefore, a simple and rapid test is needed for the early diagnosis of leptospirosis.

LANGUAGE OF ORIGINAL DOCUMENT: English

Kwanchouy K., Srisompong J., Morasert T.

Severe meningococcaemia mimicking leptospirosis: a diagnostic challenge in a tropical setting

(2026) BMJ Case Reports, 19 (1)

DOI: 10.1136/bcr-2025-270817

ABSTRACT: We describe a culture-confirmed case of severe meningococcaemia initially resembling severe leptospirosis, characterised by sepsis, purpura fulminans, meningitis and multiorgan failure. In a tropical setting where leptospirosis is endemic, overlapping clinical features might obscure diagnosis, particularly when facing uncertainty in rapid serological testing interpretation and atypical cerebrospinal fluid findings. Although the patient twice tested positive for rapid Leptospira IgM, blood culture ultimately confirmed Neisseria meningitidis Early administration of appropriate antibiotics and supportive care was life-saving, but complications such as dry gangrene and severe renal injury developed. This case highlights the diagnostic challenge of distinguishing meningococcaemia from other tropical infections. It highlights the importance of microbiological confirmation,

timely isolation with chemoprophylaxis for close contacts and multidisciplinary follow-up for long-term sequelae.
LANGUAGE OF ORIGINAL DOCUMENT: English

Shu B.C., Moses C.

Posterior reversible encephalopathy syndrome in a child with Leptospira-associated glomerulonephritis: the 3 P'S framework

(2026) BMJ Case Reports, 19 (1)

DOI: 10.1136/bcr-2025-269939

ABSTRACT: Posterior reversible encephalopathy syndrome (PRES) is an under-recognised cause of seizures in children, often obscured by concurrent infections. We report a girl in her middle childhood with recurrent seizures following a week of fever and flood exposure. Initial suspicion was leptospira encephalitis, supported by positive serology. However, progressive hypertension and CT brain findings confirmed PRES secondary to leptospira-associated acute glomerulonephritis. She improved with antihypertensives, antiepileptics and antibiotics, and was discharged seizure-free. This case highlights the risk of anchoring bias and introduces the '3 P's of PRES' framework-Pressure, Pattern and Pictures-for earlier recognition and management.
LANGUAGE OF ORIGINAL DOCUMENT: English

Kumari A., Toor D.

Outer membrane protein LipL21 as a potential candidate against *Leptospira interrogans*: an *in silico* prediction

(2026) Indian Journal of Pharmacology, 58 (1), pp. 68 - 73

DOI: 10.4103/ijp.ijp_540_23

ABSTRACT: ABSTRACT: Leptospirosis is one of the most widespread zoonotic diseases caused by Leptospira interrogans, characterized by mild febrile illness to severe multiorgan failure. The conventional vaccines against Leptospira have several drawbacks, including short-term immunity and serovar-based protection. The current study focuses on determining the most effective outer membrane protein (OMP) as a potential antigen using various computational approaches in providing protection against leptospirosis, as they are conserved within pathogenic serovars. Out of OmpL1, LipL21, LipL32, and LipL41, the VaxiJen analysis revealed LipL21 to be the most antigenic with a score of 0.7848. The antigenic epitopes of LipL21 were further analyzed using BCPred and MHCPred. It is conserved among all the pathogenic serovars while being absent in nonpathogenic. LipL21 had both B-cell and T-cell epitopes, suggesting that it is immunogenic. The VaxiJen score, localization of protein, Clustal Omega, and confirmational analysis of B-cell epitopes were studied for defining a better immunogenic and conserved OMP. This study holds importance as the surface proteins are a potential vaccine candidate for the development of new and effective vaccines in the prevention of leptospirosis hold. An ideal protein, which has its entire conserved immunogenic domain, would confer cross-protection against heterologous serovars. Thus, using bioinformatic approaches, we for the first time predict that LipL21 is a promising, effective vaccine candidate in providing protection against Leptospira.
LANGUAGE OF ORIGINAL DOCUMENT: English

Didkowska A., Brodard I., Kwiecien E., Orłowska B., Kołodziej-Sobocińska M., Schmidt K., Wójcik W., Anusz K., Kuhnert P.

Large carnivores as hosts of *Leptospira spp*. in Poland

(2026) Heliyon, 12 (1), art. no. e44511

DOI: 10.1016/j.heliyon.2026.e44511

ABSTRACT: Leptospirosis is a re-emerging zoonosis caused by Leptospira spp., which has extended its geographic range. Moreover, recent investigations highlight new host-pathogen interactions involved in Leptospira epidemiology. The main hosts of Leptospira spp. are rodents. However, a role of other wildlife species has recently been acknowledged but remains unclear. Thus, we investigated the presence of Leptospira spp. in wild terrestrial carnivores. Kidney, bladder, urine, and blood samples were obtained from 70 individuals of four species: grey wolf (Canis lupus), Eurasian lynx (Lynx lynx), European wildcat (Felis silvestris), and brown bear (Ursus arctos). Samples were tested by real-time PCR and serogroup-specific antibody detection for the presence of Leptospira spp. Positive PCR results were obtained for six individuals: one European wildcat, two Eurasian lynx, and three grey wolves. No Leptospira spp. were found in brown bear. In addition, multilocus sequence typing (MLST) was performed, determining ST24 in three samples (two grey wolves, and one European wildcat) and ST115/ST117 in one sample (Eurasian lynx). Serologically positive results were obtained for five individuals: three grey wolves, one European wildcat, and one Eurasian lynx, with Australis being the predominant serogroup. This is the first genetic evidence and genotype determination of Leptospira spp. in the two wild felid species European wildcat and Eurasian lynx. Our study indicates that wild terrestrial carnivores can be hosts for Leptospira spp. and therefore might play a role in transmitting this zoonosis.

LANGUAGE OF ORIGINAL DOCUMENT: English

Neely D., Coarsey M.D., Baldree L., Mosley Y.-Y.C.

Retrospective analysis of Leptospira microscopic agglutination test results identifies Autumnalis as the predominant serovar in the southeastern United States

(2026) American Journal of Veterinary Research, 87 (1)

DOI: 10.2460/ajvr.25.07.0232

ABSTRACT: Objective: To carry out a retrospective analysis of Leptospira microscopic agglutination test (MAT) results performed at Tifton Veterinary Diagnostic and Investigational Laboratory in Georgia from June 2015 to December 2023. Methods: Test records for MAT against 7 Leptospira interrogans serovars (Autumnalis, Bratislava, Canicola, Grippotyphosa, Hardjo, Icterohaemorrhagiae, and Pomona) were retrieved from submissions among cattle, dogs, goats, equids, pigs, and wildlife/exotic species. Further categorization was performed by state and health conditions for seropositive animals, including by breed purpose for cattle (beef, dairy, and dual purpose) and body weight groups for dogs (large, medium, and small). Results: Across all species, the seropositivity rate was 52.3% (552 of 1,055), and the most frequently detected MAT antibodies were against serovar Autumnalis (60.3%; 95% CI, 56.1% to 64.4%), followed by Icterohaemorrhagiae (52.7%; 95% CI, 48.5% to 57.0%). Equids had the highest seropositivity rate (82.5% [47 of 57]) followed by pigs (80.0% [16 of 20]), cattle (54.1% [351 of 649]), dogs (45.6% [131 of 287]), goats (23.3% [7 of 30]), and exotic species (0% [0 of 12]). The highest MAT titer (1:12,800) was detected in a Florida dairy cow against Pomona; a Georgia dog against Autumnalis, Grippotyphosa, and Pomona; and a South Carolina Paint Horse against Pomona. Conclusions: In the southeastern region of the US, the most frequently detected MAT titers were against serovar Autumnalis in dogs, equids, goats, and pigs, while in cattle, Autumnalis was the second most frequent serovar after Icterohaemorrhagiae. Clinical Relevance: The frequent and/or exclusive detection of Autumnalis and Bratislava MAT titers supports the inclusion of these 2 serovars in leptospirosis vaccines and MAT panels used in veterinary diagnostic laboratories across the US.

LANGUAGE OF ORIGINAL DOCUMENT: English

de Souza Rocha K.N., de Lima Peixoto A., de Medeiros Pereira L.S., Cardoso D.F., Silva Rodrigues M.L.C., de Azevedo S.S., de Oliveira J.P.F., Alves C.J., Fonseca M.A., Dos Santos Higino S.S.

Detection of *Leptospira* in cane toads (*Rhinella jimi*) from urban and rural Paraíba, Brazil

(2026) Veterinary Record

DOI: 10.1002/vetr.70228

ABSTRACT: Background: Leptospirosis is a significant zoonosis in tropical regions, where poor sanitation and favourable climate aid its spread. Synanthropic animals such as the cane toad (Rhinella jimi), which share environments with both people and wild and domestic animals, may harbour Leptospira and contribute to urban and rural transmission cycles. Methods: This study evaluated the serological and molecular presence of Leptospira spp. in R. jimi collected from urban and rural areas in Brazil's semi-arid region. Twenty-five toads were captured, euthanased and sampled. Blood was analysed using the microscopic agglutination test, and urine and kidney tissues were tested via polymerase chain reaction (PCR) targeting the LipL32 gene. Results: Six toads (24%) were seropositive for Leptospira, with the identified serogroups being Australis (n = 3), Icterohaemorrhagiae (n = 2) and Pomona (n = 1). PCR detected Leptospira DNA in 11 animals (44%), mainly from urban locations. Limitations: The study's small sample size, although ethically justified, represents a limitation for broader epidemiological inferences. Furthermore, due to the lack of complete data on the animals' prior movements, the relationship between infection and geographical origin could not be fully determined. Conclusion: The presence of antibodies and leptospiral DNA indicates that R. jimi may act as a non-conventional host in Leptospira transmission, posing a potential public health risk.

LANGUAGE OF ORIGINAL DOCUMENT: English

Chami Le Bon B., Zgheib A.J.

Leptospirosis: an unusual cause of pulmonary haemorrhage and multi-organ failure

(2026) Lung India, 43 (1), pp. 97 - 98

DOI: 10.4103/lungindia.lungindia_468_25

LANGUAGE OF ORIGINAL DOCUMENT: English

Rosengren P., Johnston L., Ismail I., Smith S., Hanson J.

The characteristics of patients that develop severe leptospirosis: a scoping review

(2025) Pathogens, 14 (12), art. no. 1268

DOI: 10.3390/pathogens14121268

ABSTRACT: This scoping review of original literature published before 1 March 2025 examined the demographic and simple clinical and laboratory findings associated with the development of severe leptospirosis. The definition of severe leptospirosis varied in different studies, but for the purposes of this review it included death or patients with a more complicated clinical course. There were 35 articles that satisfied the review's inclusion criteria. Increasing age was associated with severe disease in 7 studies. Abnormal respiratory examination findings (18 studies), hypotension (11 studies), oliguria (8 studies), jaundice (7 studies) and altered mental status (4 studies) also helped identify high-risk patients. Abnormal laboratory tests—specifically the complete blood count (17 studies), measures of renal function (16 studies) and liver function (14 studies)—were also associated with severe disease. There was geographical heterogeneity in the clinical phenotype of severe disease, but the presence of hypotension, respiratory or renal involvement had prognostic utility in all regions. Simple bedside findings and basic laboratory tests can provide valuable clinical information

in patients with leptospirosis. Integration of these indices into early risk stratification tools may facilitate recognition of the high-risk patient and expedite escalation of care in resource-limited settings where most cases of life-threatening leptospirosis are seen.
LANGUAGE OF ORIGINAL DOCUMENT: English

Dhing H.K., Hussain M., Boruah D.K., Phukan P., Raghuraman K.
A case of longitudinally extensive transverse myelitis with coinfection of scrub typhus and leptospirosis
(2025) Journal of Neurosciences in Rural Practice, 16 (4), pp. 635 - 638
DOI: 10.25259/JNRP_3_2025
ABSTRACT: Longitudinally extensive transverse myelitis (LETM) is an immune-mediated disorder where spinal cord lesions extend over three or more contiguous vertebral segments, classically described in neuromyelitis optica spectrum disorders. We report a case where a 36-year-old man had concurrent leptospirosis and scrub typhus infection, presenting with LETM. In previous literature, LETM has been found with isolated Leptospira and Orientia tsutsugamushi infection; however, this case may be a rare association of LETM with concurrent diseases.
LANGUAGE OF ORIGINAL DOCUMENT: English

Rathnayake N.S., Muthusinghe D.S., Vijeyakumaran R., Senarathne P., Bandara V., Sarathkumara Y.D., Nalinda R., Shiokawa K.D., Yoshimatsu K., Rajapakse S., Koizumi N., Gamage C.D.
AUTHOR FULL NAMES: Rathnayake, Nipun S. (59975192900); Muthusinghe, Devinda S. (57203805938);
Detection of P1 and P2 Subclades of Leptospira carriage in swine in Sri Lanka
(2026) BMC Veterinary Research, 22 (1), art. no. 17
DOI: 10.1186/s12917-025-05171-3
ABSTRACT: Background: Leptospirosis, caused by pathogenic Leptospira spp., is an important zoonotic disease that is found globally, with recent outbreaks posing a major public health challenge. This disease affects a wide range of mammalian species. While rodents, dogs, cattle, and buffaloes are recognized reservoirs of Leptospira, the role of swine in transmission in Sri Lanka remains unclear. This study aimed to investigate the carrier status of Leptospira spp. in swine raised for human consumption in Sri Lanka, and to assess potential zoonotic risks. Results: Analysis of livestock data revealed the highest density of pigs in the Gampaha, Colombo, and Puttalam districts. Kidney (n = 181) and blood (n = 25) samples were collected from swine slaughtered for human consumption in the Colombo and Kegalle districts. Leptospiral DNA was detected in 25 of the kidney samples (13.8%), identifying Leptospira interrogans (n = 21), P1 (pathogenic) subclade, and L. licerasiae (n = 4), P2 (intermediate) subclade. Serological analysis revealed seropositivity to the serogroups Autumnalis, Icterohaemorrhagiae, Canicola, and Sejroe. Conclusions: This study demonstrates that swine reared for human consumption in Sri Lanka serve as an important reservoir of Leptospira spp. All pigs sampled were clinically healthy at ante-mortem inspection, confirming their role as asymptomatic carriers of Leptospira spp. The detection of strains identical to those previously reported in human infections suggests a potential zoonotic threat exacerbated by inadequate farm hygiene and environmental contamination. These findings highlight the need for comprehensive research from a One Health perspective to gain a deeper understanding of the epidemiology of leptospirosis in Sri Lanka.
LANGUAGE OF ORIGINAL DOCUMENT: English

Chen X., Moraga P.

Spatio-temporal dynamics of leptospirosis in Brazil between 2010 and 2023: identifying high-risk regions and gender-specific patterns

(2026) Acta Tropica, 274, art. no. 107978

DOI: 10.1016/j.actatropica.2026.107978

ABSTRACT: Background: Leptospirosis is a globally neglected zoonotic disease with heightened transmission in tropical regions. Brazil bears a disproportionate burden in Latin America, driven by socio-economic vulnerability, urban infrastructure deficiencies, occupational exposure, and hydrological factors such as rainfall and flooding. Despite its significance, spatio-temporal patterns of leptospirosis across Brazil's diverse regions remain poorly understood. This study examines the spatial distribution, temporal dynamics, and gender-specific patterns of leptospirosis risk in Brazil from 2010 to 2023. Methods: We conducted a national-level retrospective analysis using confirmed leptospirosis cases and population data aggregated at the microregional level (n=558) from official surveillance systems. Descriptive statistics assessed overall trends. Spatio-temporal scan statistics with a discrete Poisson model identified high-risk clusters. Bayesian spatio-temporal models estimated annual relative risks (RRs) and 95% credible intervals for total, male, and female populations. An interactive dashboard was developed for dissemination. Results: A total of 48,190 cases were reported, with males accounting for 80.1%. Temporal variation was notable, with peaks in 2011 and 2018 and a sharp decline during the COVID-19 pandemic. Thirty significant clusters were identified, mainly in Acre and southern Brazil. RR estimates confirmed persistent endemicity in these regions, with some microregions exceeding RR>20. Gender-disaggregated analyses revealed divergent trends between males and females in several areas. Conclusion: This study highlights marked spatial heterogeneity and gender disparities in leptospirosis risk across Brazil. Persistent hotspots underscore the need for long-term, localized interventions. High-resolution spatio-temporal modeling and interactive tools can inform equitable, data-driven disease control strategies in endemic regions.

LANGUAGE OF ORIGINAL DOCUMENT: English

Montes-Escobar K., Cueva J.A., Salas Macías C., Fonseca-Restrepo C., Montes V., Maddela N.R.

Spatiotemporal patterns and clinical characteristics of leptospirosis hospitalizations in Ecuador: a nationwide study (2018–2023)

(2026) Acta Tropica, 274, art. no. 107970

DOI: 10.1016/j.actatropica.2026.107970

ABSTRACT: Leptospirosis is a neglected zoonotic disease highly sensitive to hydro-meteorological changes, posing significant challenges for health systems in endemic regions like Ecuador. The objective of this study was to analyze the spatiotemporal patterns and clinical characteristics of leptospirosis hospitalizations in Ecuador from 2018 to 2023, identifying vulnerability factors for in-hospital mortality and geographical distribution. A retrospective nationwide study was conducted using hospital discharge records (ICD-10: A270, A278, A279), calculating age-adjusted hospitalization and mortality rates per 100,000 inhabitants. Associations between sociodemographic variables, clinical forms, and vital status were assessed using Fisher's exact test and Pearson's Chi-square test. A total of 573 hospitalized cases and 11 deaths were analyzed. The results indicated that the icterohemorrhagic form (A270) was the primary determinant of mortality (p = 0.001); while it accounted for only 4.8% of survivors, it represented 45.5% of all fatal cases. Conversely, unspecified leptospirosis (A279) comprised 91.6 % of cases but showed lower lethality, and neither age nor sex were

statistically significant predictors of death (p > 0.05). Temporally, hospitalization rates remained stable from 2018 to 2022, reaching a nadir of 0.0249 per 100,000 in 2021, but surged four-fold in 2023 to 0.1351 per 100,000. This outbreak was geographically concentrated in the Coastal provinces, particularly Guayas and Manabí, coinciding with reports of extreme rainfall. In conclusion, mortality in hospitalized patients is driven mainly by the clinical phenotype (A270) rather than demographic factors. The dramatic surge in 2023 highlights the region's vulnerability to environmental changes, suggesting that public health strategies must prioritize early diagnosis to differentiate severe forms and strengthen "One Health" surveillance in high-risk coastal areas to mitigate future climate-associated outbreaks.
LANGUAGE OF ORIGINAL DOCUMENT: English

Soares K.C.R., Roussouliéres I.S., Barbosa C.S., Lilenbaum W.

The genital route in experimental infection with Leptospira spp. in hamsters as a model for genital leptospirosis

(2026) Veterinary Journal, 315, art. no. 106558
DOI: 10.1016/j.tvjl.2026.106558
ABSTRACT: Leptospirosis is a globally distributed zoonosis that affects livestock reproduction. The causative Leptospira spp. are highly adaptable and can colonize a wide range of hosts. Although the intraperitoneal (IP) route is commonly used in experimental models, it bypasses mucosal barriers and does not reflect natural transmission. In contrast, mucosal routes, such as the intravaginal (IVG) route, more closely mimic natural infection but remain poorly investigated. This study evaluated the IVG route as an experimental model for reproductive leptospirosis using adult female golden Syrian hamsters (Mesocricetus auratus) inoculated with Leptospira santarosai serovar Guaricura via IVG or IP routes. To enhance susceptibility and standardization, IVG inoculations were performed exclusively during the proestrus or estrus stages, as determined by vaginal cytology. Animals were monitored for up to 40 days and assessed by serology and PCR. IVG-inoculated animals developed systemic infection and genital colonization, although bacteremia occurred later than in the IP group. Both groups elicited similar humoral immune responses from day 7 onward, with animals remaining seropositive until the end of the study. Renal and genital colonization was confirmed by PCR in both groups, with no significant differences. Importantly, 60 % of IVG-inoculated animals remained PCR-positive in genital tissues for up to 40 days, indicating persistent subclinical infection. No clinical signs were observed in any of the groups. The IVG route proved effective in establishing chronic infection and better simulates the natural course of animal genital leptospirosis, supporting its use as a physiologically relevant experimental model.
LANGUAGE OF ORIGINAL DOCUMENT: English

Gautam H., Sunil Kumar B.V., Singh S., Manu M.

Evaluation of a recombinant Loa22-gold nanoparticle based lateral flow assay for the serodiagnosis of leptospirosis in canine and bovine

(2026) Archives of Microbiology, 208 (2), art. no. 117
DOI: 10.1007/s00203-025-04667-8
ABSTRACT: Leptospirosis is a globally significant zoonotic disease caused by the pathogenic Leptospira spp. This study aimed to develop a recombinant Loa22 based lateral flow assay for detecting leptospirosis in dogs and cattle. The loa22 gene from Leptospira interrogans was cloned, expressed in E. coli, and purified using Ni–NTA affinity chromatography. The immunoreactivity of the recombinant protein was confirmed by western

blotting, and hyperimmune sera against the protein was raised in mice. Gold nanoparticles (AuNP) were conjugated with rLoa22 under optimized conditions and characterized by UV–Vis spectrophotometry, agarose gel electrophoresis, and transmission electron microscopy. The lateral flow assay (LFA) strips were assembled with AuNP–rLoa22 on the conjugate pad and rLoa22 and hyperimmune sera on the test and control lines, respectively. Diagnostic performance of the assay was evaluated using sera from 100 dogs and 102 cattle suspected for leptospirosis and compared to the reference standard microscopic agglutination test (MAT). Six dog and cattle samples each were tested positive by MAT. The developed LFA further tested 06 dog and 07 cattle samples as positive in addition to the MAT positive samples, representing false positives. In dogs, the LFA showed 100% sensitivity and 93.62% specificity, while in cattle, it showed 100% sensitivity (Se) and 92.71% specificity (Sp) with respect to MAT. The n/N for Se and Sp were, Se<inf>dogs</inf>= 6/6; Sp<inf>dogs</inf>= 88/94; Se<inf>cattle</inf>= 6/6; Sp<inf>cattle</inf>= 89/96. The high observed sensitivity could be attributed to the smaller number of MAT+/LFA + samples that resulted in a wide 95% confidence interval (CI). The test was further validated on another 300 canine and 98 cattle serum samples suspected for leptospirosis (prevalence screens, not a part of the accuracy cohorts). The results underscore the potential of the rLoa22–based LFA as a reliable, rapid diagnostic tool for leptospirosis screening in veterinary settings. Further validation of the study is warranted using samples pre-screened for leptospirosis through other commercially available techniques, including qPCR and ELISA.
LANGUAGE OF ORIGINAL DOCUMENT: English

Le Turnier P., Desmoulin A., Peugny S., Epelboin L., Cabié A., Picardeau, M.
Leptospirosis in France: time to revise diagnostic algorithms and their reimbursement
(2026) Infectious Diseases Now, 56 (2), art. no. 105245
DOI: 10.1016/j.idnow.2026.105245
LANGUAGE OF ORIGINAL DOCUMENT: English

Fernandes Da Silva L.J., Vieira Larucci M.
Pathogenesis of leptospirosis-induced coagulopathy and hemorrhages
(2026) Critical Reviews in Microbiology
DOI: 10.1080/1040841X.2026.2613962
ABSTRACT: Physiological hemostasis is a balance between pro- and anticoagulant pathways, with multiple factors, regulators, and cellular components. Hemostasis is also closely associated with inflammation and immune response. In leptospirosis, a zoonotic disease caused by pathogenic spirochetal bacteria of the genus Leptospira, the hemostatic equilibrium is disturbed, resulting in coagulopathies that ultimately result in hemorrhages. Thrombocytopenia is a common complication in the affected patients and is often associated with poor clinical outcomes and high mortality. To date, the reports unraveling the origin of the molecular pathogenesis of leptospirosis hemostatic disturbances are scarce. In this review article, we summarize and analyze the complex pathophysiology of hemostatic impairment in the illness with a focus on the role of endotheliopathy, induction of pro-coagulant and pro-inflammatory states, and platelet dysfunction. We believe this can guide future studies aiming to unravel the molecular mechanisms underlying coagulopathy in leptospirosis to improve our understanding based on evidence, which will give insight into novel interventions to tackle the disease.
LANGUAGE OF ORIGINAL DOCUMENT: English

Gupta S., Matsunaga J., Ratitong B., Manion A., Ismaeel S., Valadares Garcia D., West A.P., Kerur N., Stehlik, C., Dorfleutner A., Dagvadorj J., Coburn J.L., Wolf A.J., Morrissey M.A., Cassel S.L., Haake D.A., Sutterwala, F.S.

cGAS-STING dependent type I IFN reduces *Leptospira interrogans* renal colonization in mice

(2026) PLOS Pathogens, 22 (1), pp. e1013250

DOI: 10.1371/journal.ppat.1013250

ABSTRACT: Leptospira interrogans is the major causative agent of leptospirosis. Humans, canines and agricultural animals are susceptible to Leptospira species and can develop fulminant disease. Rodents serve as reservoir hosts in which the bacteria colonize the renal tubules and are excreted in the urine. The host immune response to Leptospira spp. remains poorly defined. We show that L. interrogans induces a robust type I interferon (IFN) response in human and murine macrophages that is dependent on the cytosolic dsDNA sensor Cyclic GMP-AMP Synthase (cGAS) and the Stimulator of IFN Genes (STING) signaling pathway. Further, we show that mice deficient in the IFNα/β receptor subunit 1 (IFNAR1) or STING had higher bacterial burdens and increased renal colonization following infection in vivo suggesting that cGAS-STING-driven type I IFN is required for the host defense against L. interrogans. These findings demonstrate the significance of cGAS-STING- dependent type I IFN signaling in mammalian innate immune responses to L. interrogans.

LANGUAGE OF ORIGINAL DOCUMENT: English

Martin Mario B., Z., Vernal S., Jian H., Nilles E.J., Furuya-Kanamori L., Sartorius Benn K.D., Lau C.L.

Leptospirosis in the Caribbean Region between 2000 and 2022: A scoping review of morbidity and mortality

(2026) PLOS Neglected Tropical Diseases, 20 (1), pp. e0013595

DOI: 10.1371/journal.pntd.0013595

ABSTRACT: BACKGROUND: Leptospirosis remains an important yet underreported public health concern in the Caribbean. Urbanisation, biodiversity loss and human encroachment into natural habitats have contributed to shifts in its epidemiological patterns. However, accurate assessment of disease burden is hindered by limited diagnostic capacity, surveillance challenges, and scarce research. We aim to describe geographical and temporal distribution of leptospirosis epidemiology in Caribbean Island Countries and Territories (CRICTs) and identify patterns and gaps in knowledge. METHODOLOGY/PRINCIPAL FINDINGS: We conducted a systematic search across PubMed, Web of Science, Embase, Scopus, and the Latin America and Caribbean Health Sciences Literature databases, between 2000-2022, without language restrictions. Eligible publications were routine surveillance-based studies or cross-sectional seroprevalence surveys. We followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for Scoping Reviews (PRISMA-ScR) protocol. Of 110 full-text articles reviewed, 16 met inclusion criteria, documenting leptospirosis in 15 of 27 CRICTs (55.6%). Between 2000-2010, we identified an average of 2.6 studies per year, compared to just 1.2 between 2011-2022. Nine studies (60.0%) reported surveillance data, and six (40.0%) were seroprevalence surveys. Two studies reported hospitalisation rate (12.5%), and five studies, case fatality rate (31.3%). There were more than one publication from Guadeloupe, Jamaica, Puerto Rico, St. Lucia and Trinidad and Tobago. Although most studies acknowledged links between leptospirosis and extreme weather, only three were specifically designed to investigate this association. CONCLUSIONS/SIGNIFICANCE: Our findings highlight critical gaps in leptospirosis burden and research across the Caribbean. The scarcity of recent studies investigating epidemiological differences across rural and urban settings, and the impact of environmental

changes, contributes to limited characterisation of evolving transmission patterns across the region. Strengthening regional research capacity and surveillance systems is essential to inform targeted public health strategies and reduce the disease's burden locally.
LANGUAGE OF ORIGINAL DOCUMENT: English

Kirmse L., Thieme K., Doherr M.G., Eule J.C.

Evaluation of laboratory techniques for the diagnosis of Leptospira-associated equine recurrent uveitis (ERU) with focus on the Goldmann-Witmer coefficient

(2026) Veterinary Ophthalmology, 29 (1), pp. e70132
DOI: 10.1111/vop.70132

ABSTRACT: PURPOSE: To evaluate different laboratory procedures for determining the etiologic diagnosis of equine recurrent uveitis regarding intraocular infection with Leptospira spp. and to establish a diagnostic guideline. MATERIAL AND METHODS: Eighty horses with a history of ERU were ophthalmologically examined. Serum and aqueous humor were collected. Total protein, albumin level, and MAT against Leptospira spp. were evaluated on serum and aqueous humor. PCR for Leptospira spp., EHV-1 and -4 was performed on aqueous humor. Goldmann-Witmer coefficient (GWC) and C-value (CC) were calculated based on MAT. In 42 cases, an additional ELISA was initiated. RESULTS: Forty-six female and 34 male horses of different breeds (mean age 10.9 years; range 3 to 31) were included. By MAT 56/80 horses (70.0%) were identified seropositive for Leptospira spp. MAT results were positive for Leptospira spp. in aqueous humor of 47/80 (58.8%) patients. PCR tested 16/80 (20.0%) positive, ELISA detected 13/42 (31.0%) positive. Neither EHV-1 nor EHV-4 were detected by PCR. Calculating GWC gives evidence suggestive of intraocular involvement with Leptospira spp. in 53/80 (66.3%) at the level ≥ 3. Setting GWC ≥ 3 as gold standard, ELISA and C ≥ 2 closely matched this threshold, showing high accuracy (95.2%; 91.3%), sensitivity (86.7%; 84.9%), and strong agreement (V = 0.90; V = 0.81). PCR was less accurate (53.8%) and sensitive (30.2%) compared to GWC. CONCLUSION: Within this setting, GWC achieved the highest number of positive results for detecting intraocular involvement of Leptospira spp. when compared to PCR, ELISA, and C-value.
LANGUAGE OF ORIGINAL DOCUMENT: English

Imani F., Khoshbakht R., Fattahi E., Fattahi S., Asouri M.

Isolation, molecular detection, and multi locus sequence typing (mlst) of *Leptospira interrogans* in rodents, cattle and sheep samples in Amol, Iran

(2026) Jundishapur Journal of Microbiology, 19 (1), art. no. e167130
DOI: 10.5812/jjm-167130

ABSTRACT: Background: Leptospirosis is a zoonotic disease, common in tropical and subtropical regions, caused by pathogenic species of Leptospira. Objectives: This study aimed to isolate and detect Leptospira in animal samples in Amol, northern Iran. Methods: A total of 118 samples were collected from rodent bladder urine and livestock midstream urine during 2023. Culture, microscopy, and molecular analyses were conducted to identify Leptospira interrogans. Cultures were incubated in Ellinghausen McCullough Johnson and Harris (EMJH) media and monitored weekly via dark field microscopy. DNA extraction was followed by conventional and real-time polymerase chain reaction (PCR) targeting the lipL32 gene. Multi locus sequence typing (MLST) was also performed on selected isolates. Results: Results showed that seven (5.93%) samples (including six rodent and one sheep samples) were culture-positive, all confirmed by real-time and traditional PCR. Real-

time PCR identified 14 (11.86%) samples as positive for L. interrogans including 9/32 (28.1%), 3/44 (6.81%), and 2/42 (4.76%) rodent, sheep, and cattle samples, respectively. The results of the MLST sequence analysis of four culture-positive specimens were attributable to sequence type (ST) 330 (one sheep specimen) and ST 252 (three rodent specimens), both of which correspond to L. interrogans. Quantitative statistical analyses revealed noteworthy correlations between the types of samples and the presence of Leptospira ($P < 0.05$). Conclusions: This investigation underscores the effectiveness of integrating molecular methodologies with conventional culture techniques for the surveillance of Leptospira in regions characterized by a heightened risk. The current study reports the isolation and characterization of Leptospira from animal urine samples, providing new insights into the presence of these bacteria in the study area.
LANGUAGE OF ORIGINAL DOCUMENT: English

Pinto De Oliveira Alves G., Raymundo E.F., Ferreira Santos M.N., Mota R.A., Samico-Fernandes Torres É.F.
Classic renal syndrome of leptospirosis in a feline: case report [Síndrome renal clássica da leptospirose em um felino: relato de caso]
(2025) Medicina Veterinaria (Brazil), 19 (3), pp. 260 - 265
DOI: 10.26605/medvet-v19n3-7290
ABSTRACT: Leptospirosis is a neglected zoonosis with worldwide prevalence, caused by bacteria of the genus Leptospira. Clinical manifestations vary depending on the host and the infecting strain. The role of cats as susceptible hosts and potential environmental reservoirs of Leptospira remains poorly understood, largely due to the lack of clinical signs typically associated with infection in this species. This study aimed to describe the case of a 6-year-old cat, treated at the University Veterinary Hospital of the Federal Rural University of Pernambuco, which presented the classic renal syndrome associated with leptospirosis. The animal was semi domesticated and had occasional contact with rodents and other cats. It was also reported that another animal from the same household had recently died showing similar clinical signs. Dark-field microscopy of the urine was performed and yielded a positive result for spirochetes. A Microscopic Agglutination Test (MAT) was subsequently conducted, showing reactivity to the serogroups Icterohaemorrhagiae, Castellonis, Pyrogenes, Autumnalis, Hebdomadis, and Celledoni, with a titer of 1:100. Based on the clinical presentation, history, and complementary test results, treatment for leptospirosis was initiated, leading to the recovery of the animal. Considering these findings and from a One Health perspective, further studies are necessary to better understand the pathogenesis of leptospirosis in cats and their epidemiological role as environmental sentinels or potential carriers of pathogenic Leptospira species.
LANGUAGE OF ORIGINAL DOCUMENT: Portuguese

Lorente-Martínez M.Á., Bailon Gaona M.C., Ruíz-Escolano E.
First hepatic decompensation due to Leptospira infection
(2025) Revista Espanola de Enfermedades Digestivas, 117 (12), pp. 801 - 802
DOI: 10.17235/reed.2025.11387/2025
ABSTRACT: Leptospira interrogans is a spirochete excreted in the urine of various mammals. It can infect humans when contaminated water comes into contact with broken skin or mucous membranes. Leptospirosis may present as a mild febrile illness, with the classic features of Weil's syndrome (jaundice, conjunctival suffusion, and renal impairment), or progress to life-threatening forms such as acute liver failure or pulmonary hemorrhage.
LANGUAGE OF ORIGINAL DOCUMENT: English

C.L., Labana, R.V., Cada, K.J.S., Dimasin, R.V.D., Taller, J.M.T., Marundan, D.M.M., Sandoval, K.L.
AUTHOR FULL NAMES: ; Labana, Ryan V. (57201853720); Cada, Kristel Joy S. (57201856110); Dimasin, Rodel Victor D. (59699769800); Taller, Jose Marie T. (60309979800); Marundan, D. M.M. (59507371300); Sandoval, Khristine L. (57201863845)
60309802700; 57201853720; 57201856110; 59699769800; 60309979800; 59507371300; 57201863845
Language localization as a One Health strategy for leptospirosis prevention in flood-prone communities of the Philippines
(2025) BIO Web of Conferences, 196, art. no. 04001
DOI: 10.1051/bioconf/202519604001
ABSTRACT: Leptospirosis remains a recurrent public health concern in tropical inland water systems where flooding facilitates zoonotic transmission. Grounded in the One Health framework, this study localized the Leptospirosis Awareness, Warning, and Action (LAWA) Guidebook into Filipino to strengthen comprehension and community engagement among flood-prone populations. Using a participatory action research (PAR) design, a multidisciplinary team of linguists and biologists conducted three phases: linguistic simplification, cultural contextualization, and community validation. Readability assessments and focus group discussions (FGDs) were carried out with barangay health workers and local leaders in Calamba City, Laguna. Quantitative analysis using paired-sample t-tests revealed a significant increase in comprehension scores from 62% (SD = 11.4) using the English version to 89% (SD = 7.6) with the Filipino version ($p < 0.001$). Qualitative data further revealed an enhanced confidence and willingness among health workers to utilize the localized guidebook in health promotion activities. Results indicate that language localization enhances accessibility, promotes ecological awareness, and strengthens community-level responses to zoonotic risks. By integrating local environmental knowledge (LEK) and plain language communication, this initiative demonstrates how linguistic adaptation operationalizes One Health principles through inclusive, culturally grounded health communication. The study highlights language as a crucial component of environmental health literacy and as a sustainable approach to disease prevention and resilience in tropical flood-risk areas.
LANGUAGE OF ORIGINAL DOCUMENT: English

Sandoval K.L., J.C., Marundan D.M.M., Dimasin R.V.D., Taller J.M.T., Cada K.J.S., Labana R.V.
Local awareness, watershed action (LAWA): a grassroots governance strategy to leptospirosis prevention in Laguna de Bay
(2025) BIO Web of Conferences, 196, art. no. 04002
DOI: 10.1051/bioconf/202519604002
ABSTRACT: Leptospirosis remains a persistent yet underestimated public health threat in the Laguna de Bay region-the Philippines' largest freshwater lake and a vital socio-ecological system. Seasonal flooding, rapid urbanization, poor sanitation, and close human-animal-water interactions heighten the area's vulnerability to disease transmission. Conventional control measures have proven insufficient, underscoring the need for more inclusive and sustainable strategies. This study introduces the Local Awareness and Watershed Action (LAWA) framework, a grassroots governance model for leptospirosis prevention. LAWA empowers fisherfolk, barangay leaders, health workers, and Local Government Units (LGUs) to co-lead disease prevention and watershed management, linking public health with ecosystem care. Grounded in participatory and transdisciplinary principles, it integrates local knowledge, environmental education, and citizen science. Key

interventions include mapping flood-prone zones, documenting environmental change, co-developing water quality monitoring tools, and conducting capacity-building workshops for adaptive behavior. Implementation increased hazard awareness, community participation in flood preparedness, and created barangay eco-health committees. LAWA also strengthened coordination between municipal health and environmental offices, fostering integrated water and health governance. By embedding disease prevention within sustainable water governance, LAWA promotes environmental justice, community resilience, and equitable health outcomes.
LANGUAGE OF ORIGINAL DOCUMENT: English

Bhat P., Ramdas S., Anil A.M.

Leptospirosis in southern Coastal Karnataka, India: analysis of clinical and laboratory characteristics

(2025) Journal of Zoonotic Diseases, pp. 1 - 9

DOI: 10.22034/jzd.2025.20572

ABSTRACT: The current study analyses the clinical, haematological and biochemical characteristics in patients diagnosed with leptospirosis. This study was retrospective of a period of two years from March 2021 to February 2023. A total of 138 patients clinically suspected of leptospirosis with positive Leptospira IgM ELISA results were included in the study. The clinical presentation, complications, treatment, outcome, haematological parameters like haemoglobin, leucocyte count, platelet count, prothrombin time, biochemical parameters like total bilirubin, aspartate aminotransferase (AST), alanine aminotransferase (ALT), blood urea and serum creatinine were studied. Males were majority (n=99, 71.7%) and average age was 47.5 ± 13.3 years with maximum number of cases (n=68, 49.2%) noted in age group of 41 to 60 years. Fourteen patients (10.1%) succumbed to leptospirosis. Fever (n=115, 83.3%), vomiting (n=56, 40.6%), malaise (n=49, 35.5%), decreased urine output (n=40, 29.0%), and abdominal pain (n=37, 26.8%) were common complaints. The common complication was acute kidney injury (n=87, 63.0%). Majority of cases showed deranged haematological and biochemical parameters with leucocytosis (n=65, 47.1%), significant neutrophilia (n=95, 68.8%), thrombocytopenia (n=109, 80.0%), raised ESR (n=121, 87.7%, raised prothrombin time (n=27, 19.6%), hyperbilirubinemia (n=103, 74.6%), raised AST (n=108, 78.3%), raised ALT (n=86, 62.3%), hyperuremia (n=92, 66.7%), and raised creatinine (n=98, 71.0%). AST was significantly (p=0.011) higher in deceased patients compared to patients who recovered. Most of the patients received doxycycline antibiotic therapy (n=134, 97.1%). Febrile illness with deranged haematological, renal and liver function tests should raise a suspicion of leptospirosis in endemic regions. Prompt supportive treatment along with antibiotic therapy with doxycycline has favourable outcomes. Significantly elevated AST levels were associated with mortality.
LANGUAGE OF ORIGINAL DOCUMENT: English

Dinkar A., Singh J., Kumar N., Kumar K., Yadav R.

Clinical profile and severity correlation of acute leptospirosis in Northern India, 2019-2023: a tertiary care center-based study

(2025) Recent Advances in Inflammation and Allergy Drug Discovery

DOI: 10.2174/0127722708436787251112233505

ABSTRACT: Background: Leptospirosis is a globally important zoonotic disease with substantial morbidity and mortality, yet it remains underreported in Northern India. This study aimed to evaluate the seroprevalence, clinical characteristics, and severity determinants of acute leptospirosis in a tertiary care setting. Methods: We

conducted a retrospective cross-sectional analysis of 174 hospitalized leptospirosis patients from 20,162 admissions between 2019 and 2023. The diagnosis was established using Leptospira IgM ELISA testing. Clinical, haematological, and imaging parameters were systematically evaluated. Results: The incidence of leptospirosis was 0.9%, peaking at 38.5% post-monsoon. Rural residents (64.9%), males (59.2%), and individuals involved in agricultural work (62.6%) were predominantly affected. Common presentations were fever (100%), headache (70.7%), myalgia (62%), and calf pain (50%), followed by jaundice (39.7%), and reduced urine output (33.3%). The mortality rate was 20.1%. Severity correlated significantly with nausea/vomiting, abdominal pain, cough, and complications, including diffuse alveolar haemorrhage (DAH), disseminated intravascular coagulation (DIC), multiorgan dysfunction syndrome (MODS), hepatic dysfunction, acute renal injury, and leukocytosis. Discussion: The findings emphasize the critical need for early risk stratification and timely intervention to improve clinical outcomes. Identifying clinical and laboratory predictors of severity can significantly guide early management strategies in endemic areas. Conclusion: Several clinical and laboratory parameters are significant predictors of leptospirosis severity. Early recognition and risk stratification based on these indicators are crucial to improving patient outcomes. Enhanced surveillance, preventive measures, and clinician awareness are urgently needed to address this neglected tropical disease. LANGUAGE OF ORIGINAL DOCUMENT: English

Kas'yan Z.A., Anh L.T.L., Sharova I.N., Porshakov A.M., A.G., Chumachkova E.A., Mikheeva E.A., Cuong V., Thi Mo, L., Katyshev A.D., Katyshev S.D., Krasnov Y.M., Senichkina A.M.

Study of circulation of leptospirosis pathogens in different regions of Vietnam

(2025) Problemy Osobo Opasnykh Infektsii, (2), pp. 102 - 108

DOI: 10.21055/0370-1069-2025-2-102-108

ABSTRACT: The territory of South-East Asia, including Vietnam, is one of the disadvantaged in relation to leptospirosis areas. According to studies, 10 % of the Vietnamese population is infected with Leptospira, but at the same time, information about circulating Leptospira species, the main carriers of infection in various regions of Vietnam, is very limited. The aim of the work was to investigate the circulation of leptospirosis pathogens in various provinces of Vietnam, for which a study of suspensions of small mammalian organs was conducted, and the level of the immune stratum of the population living in the surveyed territories was determined. Materials and methods. The work was carried out on the base of the mobile laboratory for monitoring and diagnostics, as well as the Laboratory of Toxicology and Tropical Diseases of the Institute of Tropical Medicine. Molecular-genetic methods (PCR and sequencing) were used to study 2,790 samples of suspensions of small mammalian organs collected in 14 provinces located in the northern, central and southern parts of the country between 2019 and 2024. Additionally, 576 sera from conditionally healthy people, obtained in 5 northern provinces of Vietnam, were studied by ELISA to assess the intensity of immunity to Leptospira. Markers of pathogenic Leptospira were detected in 282 samples from 20 different species of small mammals using PCR, while positive results were obtained in samples from all the provinces studied. 76 positive samples were sequenced, as a result of which appurtenance to the species Leptospira interrogans, Leptospira borgpetersenii, Leptospira mayottensis was established. Specific IgG class antibodies to Leptospira were detected in 8.0 % of the cases. A risk group has been identified – people employed in agriculture. The results obtained show the ubiquitous spread of leptospirosis pathogens in Vietnam. A promising field of research is the zoning of the country's territories according to the intensity of epidemic manifestations of leptospirosis, the

determination of the species composition of circulating Leptospira and the main carriers among mammals, taking into account the landscape, geographical and socio-economic factors.
LANGUAGE OF ORIGINAL DOCUMENT: English

Baimova R.R., Riabiko E.G., Grechishkina D.I., Karmokov I.A., Khalilov E.S., Lyzenko I.S., Lunina G.A., Ostankova Y.V., Tokarevich N.K., Zheltakova I.R., Chmyr I.A.

Identification and genotyping of pathogenic *Leptospira* circulating among rodents in the city of St. Petersburg

(2025) Problemy Osobo Opasnykh Infektsii, 2, pp. 72 - 78
DOI: 10.21055/0370-1069-2025-2-72-78

ABSTRACT: The aim of the work was to determine the rate of infection by various Leptospira genomospecies of wild and synanthropic small mammals collected on the territory of St. Petersburg. Materials and methods. The capture of wild and synanthropic small mammals was carried out using Gero-type traps in the Kurortny and Kirovsky districts of St. Petersburg between September and October, 2021. The study of samples for the presence of Leptospira spp. DNA was performed applying PCR with primers selected for the lipL32 gene fragment. Genotyping of samples was conducted using primers for fragments of the secY and rpoB genes. Results and discussion. DNA of pathogenic Leptospira was detected in 8 samples, which amounted to (4.2±1.5) % of the total number of samples (190). The infection rate of gray rats collected in the Kirovsky district was (11.1±5.2) % (4/36). The infection rate of wild rodents collected in the Kurortny district was (3.7±2.6) % (2/54) for yellow-throated mice, and (2.0±1.4) % for bank voles (2/100). Based on the results of analysis of sequences obtained, the circulation of two pathogenic Leptospira species, L. interrogans and L. borgpetersenii, has been established. Our results confirm the circulation of Leptospira both among wild and synanthropic small mammals. The phylogenetic species of pathogenic Leptospira identified in our study are typical and associated with the studied rodents. In order to prevent the disease in humans, it is necessary to continue research aimed at identifying the circulation of pathogens in populations of wild and synanthropic small mammals. Deratization and activities aimed at educating residents of St. Petersburg about protection and prevention measures are required.
LANGUAGE OF ORIGINAL DOCUMENT: English

Alizadeh-Nodehi A., Maramaei E., Nikbakht H.-A., Kebria R.M., Abbasi M., Jahani M.-A.

Human leptospirosis in northern Iran: a population-based epidemiological study using infectious disease surveillance system data

(2026) BMC Research Notes, 19 (1), art. no. 33
DOI: 10.1186/s13104-025-07600-w

ABSTRACT: Objective: Human leptospirosis is an endemic disease in northern Iran. residents of northern provinces are at increased risk of exposure to Leptospira due to the region’s unique geographical characteristics, occupational patterns, cultural practices, lifestyle, and recreational activities, all of which contribute to the higher burden of the disease in this area. Therefore, this study aimed to examine the epidemiological patterns of leptospirosis in Babol County over six years (2019–2024). Results: During the study period, 344 cases of human leptospirosis were reported. Of these, 86.0% occurred in males, and 70.3% of the cases were among rural residents. Among occupational groups, agricultural workers exhibited the highest frequency, with 42.4% of cases occurring among rice farmers and 22.1% among other farmers. The

crude and age-standardized incidence rates of leptospirosis in 2019 were 10.1 and 8.1 per 100,000 population, respectively. These rates showed an increasing trend over the study period, reaching 17.3 and 14.4 per 100,000 population in 2024. The upward trend was statistically significant (P < 0.001). During the study period, the highest incidence was observed in May, with a rate of 2.9 per 100,000 population.
LANGUAGE OF ORIGINAL DOCUMENT: English

Beltrán-Sánchez C.A., Bettin Martínez A.C., Castellanos Romero K., Santodomingo A.M., Osorio-Rodríguez E., Thomas R.S., Pérez-Doria A., Ardila M.M.

Molecular surveillance of *Leptospira* infection in domestic dogs in Soledad, Northern Colombia

(2026) Veterinary Research Communications, 50 (2), art. no. 115
DOI: 10.1007/s11259-025-11056-5

ABSTRACT: Canine leptospirosis is a public health concern due to its zoonotic potential, as infected dogs may act as asymptomatic carriers and shed Leptospira without showing clinical manifestations. The epidemiological boundaries of leptospirosis become blurred in areas where environmental and socio-economic conditions favor pathogen persistence and transmission. A preliminary epidemiological survey was conducted to detect Leptospira DNA in dogs in Soledad municipality, characterized by poverty, unplanned urban growth, limited sanitation services, and recurrent flooding, to estimate infection frequency and assess their potential role as Leptospira carriers. A descriptive, cross-sectional study was performed in dogs. DNA was extracted from blood and urine samples and analyzed by PCR targeting the 16S rRNA (rrs) and lipL32 genes. Sequences generated were compared through BLASTn. Only the rrs sequences underwent phylogenetic analysis. A total of 154 dogs were enrolled. Sixteen breeds were represented, with mixed-breed predominating (43.50%; 67/154). Overall, infection rate was 9.1% (14/154). Based on rrs and lipL32 sequence identity, and rrs phylogeny, all positive samples were associated with pathogenic Leptospira, most closely related to Leptospira interrogans. Of these, 7.14% (11/154) showed renal shedding, compatible with chronic carriage, while 1.95% (3/154) tested positive in blood, suggesting recent infection. Our findings underscore the need to consider dogs as potential chronic carriers and support the integration of preventive measures into public health programs to reduce transmission risk in the municipality and northern Colombia.
LANGUAGE OF ORIGINAL DOCUMENT: English

Crump J.A., Mogeni P., Ajanovic S.A., Bramugy J.M., Chimenya M., Green E.W., Lal S., Mabey D.C.W., Mayxay M., Newton P.N., Olaru I.D., Hopkins H., Picardeau M., Amos B., Ashley E.A., Baerenbold O., Baghoumina S., Balanza N., Bandason T., Bassat Q., Bhattacharyya T., Blacksell S.D., Boca Z., Bottomley C., Bradley J., Chandler C.I.R., Chansamouth V., Chipanga J., Cossa A., Dauya E., Davis C., Dixon J., Douangphachanh S., Dubot-Pérès A., Durkin M.M., Feasey N.A., Ferrand R.A., Fink C., Fitchett E.J.A., Gerada A., Graves S.R., Handley B.L., Hutchison C.D., Jaksuwan R., Jervis J., Jones J., Kain K.C., Keddie S.H., Khounpaseuth K., Kranzer K., Kunlaya K., Lal P., De-Lamballerie X., Lalloo D.G., Luangraj M., Lubell Y., MacPherson E., Manichan S., Marlais T., Maurer F., Miles M., Mucasse C., Nguyen C., Phimolsarnnousith V., Roberts C.H., Sengduangphachanh A., Sengsavang S., Sibanda M., Singha S., Stenos J., Tanganuchitcharnchai A., Tanvir H., Ussher J.E., Valente M., Voice M.A., Vongsouvath M., Wamaka M., Wheat L.J., Yeung S.

Leptospirosis prevalence and risk factors among patients presenting with fever to 4 healthcare sites in Sub-Saharan Africa and South East Asia: an international multisite observational and nested case-control study

(2026) Journal of Infectious Diseases, 233 (1), pp. e259 - e270
DOI: 10.1093/infdis/jiaf464

ABSTRACT: Background We investigated the prevalence, diversity, and risk factors for acute leptospirosis in the Febrile Illness Evaluation in a Broad Range of Endemicities (FIEBRE) study. Methods Febrile patients aged ≥2 months in Laos, Malawi, Mozambique, and Zimbabwe underwent a standardized clinical and exposure assessment. Acute and convalescent serum were tested by Leptospira microscopic agglutination test (MAT) and acute plasma by lfb1 polymerase chain reaction. A ≥4-fold rise in antibody titer, or a single reciprocal titer ≥800, or Leptospira PCR positive defined confirmed leptospirosis. The identity of possible infecting strains was investigated by MAT and sequencing of PCR products. Results Of 7851 febrile participants enrolled, 134 (1.7%) had confirmed leptospirosis: 88 (4.6%) in Laos, 17 (1.0%) Malawi, 7 (0.3%) Mozambique, and 22 (1.2%) Zimbabwe, and 23 (0.8%) had supportive evidence of leptospirosis. Participants with leptospirosis had greater odds of headache (adjusted odds ratio [aOR] 2.20, P <. 001), rash (aOR 1.45, P <. 001), conjunctivitis (aOR 3.33, P <. 001), and jaundice (aOR 1.75, P <. 001); and had greater odds of being older (aOR 1.02 per year, P <. 001), working in rice fields (aOR 6.24, P <. 001), drinking river water (aOR 5.11, P =. 001). Predominant reactive Leptospira serogroups were Ballum and Icterohemorrhagiae at African sites, and Australis in Laos. Identified species were Leptospira borgpetersenii, L. interrogans, and L. kirschneri. Conclusions Leptospirosis was a cause of febrile illness at all sites. Some clinical features helped to identify patients with leptospirosis. Interventions related to rice field work and river exposure may prevent disease. Diverse Leptospira serogroup reactivity was observed and may suggest potential hosts.

LANGUAGE OF ORIGINAL DOCUMENT: English

Suarez-Galaz A.R., Sánchez-Montes S., Torres-Castro M.A., Chan-Chan R., Yeh-Gorocica A.B., Moguel-Chin W.I., Miranda-Caballero C.I., Grostieta E., Panti-May A., Ruíz-Piña H.A., Rodríguez-Vivas R.I., Cruz-Romero A., Ojeda-Robertos N.F., Reyes-Novelo, E.A.

Host-driven genetic diversity of *Leptospira* in the Americas: a continental perspective

(2026) Transboundary and Emerging Diseases, 2026 (1), art. no. 2456548
DOI: 10.1155/tbed/2456548

ABSTRACT: Leptospira is a genetically diverse genus of spirochetes comprising over 68 species, including several pathogenic taxa such as L. interrogans, L. santarosai, L. noguchii, and L. weilii. These bacteria infect a wide range of vertebrates, especially mammals, with infected animals serving as renal carriers that excrete the pathogen through urine. While rodents are the primary reservoirs for some species, multiple vertebrate orders participate in Leptospira transmission cycles in the Americas. This study aimed to assess and compare the genetic diversity of Leptospira populations across mammalian hosts throughout their distribution ranges in the Americas, exploring the influence of host interactions on bacterial diversity. Data for this study were obtained from two sources: (1) original screening of bats and rodents for pathogenic Leptospira and (2) partial gene sequences (16S, LipL32, and SecY) retrieved from GenBank, including sequences from human leptospirosis cases. A total of 321 animals were sampled (104 rodents and 217 bats), with an overall infection frequency of 12.1%. Positive samples were identified via BLAST as L. interrogans, L. noguchii, L. santarosai, L. alexanderi, and L. weilii. Genetic diversity metrics were calculated, and haplotype networks were

constructed. Overall analyses revealed greater genetic diversity in bat Leptospira sequences, particularly in the SecY gene. In contrast, artiodactyls exhibited high intraspecific variation, suggesting a potential role in generating new Leptospira variants. Marsupials, rodents, and carnivores showed limited Leptospira diversity. These findings offer new insights into the evolutionary dynamics of Leptospira in the Americas and highlight the role of host ecology in shaping pathogen genetic diversity.
LANGUAGE OF ORIGINAL DOCUMENT: English

Chaurasia R., Agampodi S., O'Bryan J., Warnasekara J., Jayasundara D., Senewirathna I., Vinetz, J.M.
Early diagnosis of human leptospirosis by detection of antibodies to *Leptospira*-secreted virulence-modifying protein exotoxins
(2026) American Journal of Tropical Medicine and Hygiene, 114 (1), pp. 17 - 26
DOI: 10.4269/ajtmh.25-0510
ABSTRACT: The ambiguous clinical presentation of leptospirosis poses challenges for accurately assessing the global burden of this emerging disease. As a result, leptospirosis has not been recognized for inclusion in the WHO's neglected tropical diseases list. This underscores the urgent need for a diagnostic biomarker for early detection of illness and well-defined estimation of disease burden in urban and low-income settings. The recently discovered PF07598 gene family encoding virulence-modifying proteins (VMPs), including full-length LA3490, its truncated N-terminal ricin-binding lectin (RBL) domain, and a natural variant encoding only the C-terminal domain (LA0591), was evaluated for its potential to detect anti-VMP-specific IgG antibodies in early infection. The study was conducted on a well-characterized sample of febrile patients from Sri Lanka, with leptospirosis confirmation by microscopic agglutination test (MAT) and Quantitative PCR. The sample included 113 confirmed cases, 45 probable cases, 75 febrile patients, and 41 healthy subjects. Among confirmed cases, mean ELISA optical density (OD) values for LA0591, LA3490, and RBLs were 1.045 (standard error [SE]: 0.063), 0.835 (SE: 0.032), and 0.536 (SE: 0.019), respectively, compared with 0.261 (SE: 0.043), 0.697 (SE: 0.026), and 0.303 (SE: 0.019) in healthy subjects. Anti-VMP antibodies were detectable as early as day 2. In seroconversion cases, ELISA OD for LA0591 in acute MAT-negative samples was 1.347, comparable with high MAT titers. ROC analysis showed AUCs of 0.947 for LA0591 and 0.930 for LA3490, confirming their reliability as diagnostic markers. LA0591 demonstrated superior sensitivity, specificity, and early diagnostic capability, establishing it as a valuable tool for leptospirosis detection.
LANGUAGE OF ORIGINAL DOCUMENT: English

Khan M.A., Rizwan S.
Declining seroprevalence of leptospirosis: a three-year trend analysis from a tertiary care centre
(2025) Journal of Communicable Diseases, 57 (4), pp. 61 - 65
DOI: 10.24321/0019.5138.202597
ABSTRACT: Introduction: Leptospirosis is an emerging zoonotic disease of global significance, often underdiagnosed due to nonspecific clinical features and overlap with other endemic febrile illnesses. North India, despite being vulnerable, has limited epidemiological data. This study aimed to determine the seroprevalence, clinical profile, complications, and co-infections of leptospirosis in patients presenting to a tertiary care centre. Materials and Methods: A total of 500 clinically suspected patients attending the All India Institute of Medical Sciences, New Delhi, between July 2022 and May 2024 were included. Blood samples were tested for anti-Leptospira-specific IgM antibodies using ELISA. Clinical details were assessed using

Modified Faine's criteria, and patients were screened for common co-infections, including typhoid, malaria, dengue, and scrub typhus. Data were analysed using STATA software, with $p < 0.05$ considered significant. Results: 500 suspected cases, 28 (5.6%) were seropositive, while none of the 25 healthy controls tested positive. Males (75%) were more affected than females, with a male-to-female ratio of 3:1. Adults formed the majority (92.9%), with a mean age of 39.8 years. Seasonal clustering was observed, peaking during the monsoon (50%). Fever was universal, followed by jaundice (46.4%), headache (42.9%), and myalgia (39.3%). Renal involvement was the most common complication (28.6%), followed by neurological (14.3%) and pulmonary (10.7%) manifestations. Co-infections were documented in 21.4% of cases, most commonly typhoid. Conclusion: Leptospirosis remains a clinically significant cause of febrile illness in North India, with seasonal predominance and potential for severe complications. Early diagnosis, heightened clinical suspicion, and preventive measures during monsoon are essential to reduce morbidity.
LANGUAGE OF ORIGINAL DOCUMENT: English

Saha N.K., Kumar M., Siddiqui M.H.

Alterations in renal and hepatic function tests in patients with leptospirosis: a clinical correlation

(2025) Journal of Communicable Diseases, 57 (4), pp. 66 - 73
DOI: 10.24321/0019.5138.202598

ABSTRACT: Introduction: Leptospirosis is a significant zoonotic infection caused by Leptospira species, presenting with a wide clinical spectrum that ranges from mild febrile illness to severe multiorgan failure. Hepatic and renal dysfunctions are common complications that significantly influence prognosis. This study aimed to evaluate alterations in renal and hepatic function tests in confirmed cases of leptospirosis and correlate them with disease severity. Methods: This prospective observational study was conducted in the Department of Medicine at a tertiary care teaching hospital. A total of 100 confirmed leptospirosis patients were enrolled based on clinical features and laboratory confirmation using IgM ELISA, MAT, or PCR. Routine haematological, renal, and hepatic parameters were analysed. Data were statistically evaluated using SPSS version 26.0, and correlations between biochemical markers and disease severity were assessed. Results: The mean age of patients was 38.7 ± 12.4 years, with a male predominance (68%). Renal dysfunction was noted in 58% and hepatic dysfunction in 64% of cases, while 46% had combined hepatorenal involvement. Mean serum creatinine and total bilirubin were significantly higher in patients with severe disease ($p < 0.001$). A strong positive correlation ($r = 0.68$, $p < 0.001$) was observed between serum creatinine and bilirubin levels. The overall mortality rate was 5%, primarily in patients with multiorgan failure. Conclusion: Hepatic and renal involvement are common in leptospirosis and correlate strongly with disease severity. Early recognition and timely management of hepatorenal dysfunction can significantly improve patient outcomes.
LANGUAGE OF ORIGINAL DOCUMENT: English

Tasseva E., Trifonova I., Christova I., Gladnishka T., Ngoc K., Panayotova E., Ivanona V., Vladimirova I., Marinova L.

Human leptospirosis in Bulgaria: epidemiological analysis of the infection, 2014-2023

(2025) Problems of Infectious and Parasitic Diseases, 53 (3), pp. 42 - 51
DOI: 10.58395/2S2YH357

ABSTRACT: Background Leptospirosis is a zooanthroponosis with natural outbreaks, of great significance for public health worldwide. According to data from the latest ECDC report, there are 765 confirmed cases of

leptospirosis in Europe. Human cases of leptospirosis in Bulgaria have been reported since 1952. A trend towards a decrease in the number of registered cases of leptospirosis in our country has been observed in the last two decades. This study was focused on the analysis of circulating serovars of the genus Leptospira and their distribution, and epidemiological characteristics of laboratory confirmed cases of human leptospirosis for a ten-year period (2014-2023). It was interesting to reveal the relationship between clinical symptoms, transmission mode and sources of infection, and to assess the status of the problem in our country. Material and methods A total of 1152 samples suspected of leptospirosis collected from all regions of the country, were tested by MAT analysis. Of them, paired blood samples (at the beginning of the infection and during the convalescent phase) were taken from 62 patients and were examined by PCR (nested and real time). Suspensions of live serovars from 9 different Leptospira serogroups known to circulate in Bulgaria were used as antigens. Results Average annual incidence of the disease was 0.16/100,000 population. The overall case fatality rate was 4.3 % in this period. Analysis of case distribution according to sex showed a high predominance of male patients-75/93 (80.65%), from the age group 50-59 years. Serogroup Icterohaemorrhagiae had the leading aetiological role in 2015-2023, but in 2014 Sejroe was the most commonly detected serogroup. The highest incidence was observed in the district of Sofia city, and far fewer cases were registered in Shumen, Montana, Bourgas and Pleven. The monthly distribution of leptospirosis cases showed that most of the cases appeared in summer and fall with a peak incidence in late summer and early autumn. Analysis of the possible mode of transmission showed that the infection was acquired mainly through occupational exposure (70.67% of cases), mostly livestock farming. Rats were the main risk factor to contract leptospirosis during this period (38.67% of cases). Data analysis showed that 44.08% of the patients suffered from severe disease (Weil’s disease). Acute renal failure, diagnosed in 36.56%, was the main cause for fatality, which was noted also in the previous studies. Anicteric cases (55.91%) had a milder course, in most cases shown to occur as a self-limiting flu-like infection. Conclusions The results from this ten-year period show that leptospirosis in Bulgaria is an infection with limited distribution, but the risk of leptospirosis should not be underestimated. The development of real-time PCR method for rapid diagnosis of leptospirosis is very important for the diagnosis of individual cases or during outbreak situations.

LANGUAGE OF ORIGINAL DOCUMENT: English