Abstract

Leptospirosis is a bacterial disease transmitted directly or indirectly from animals to humans that may result in severe hemorrhagic, hepatic/renal and pulmonary disease. There are 20 known Leptospira species and hundreds of serovars, some of which belong to different species. It is essential to identify pathogenic Leptospira serovars and their potential reservoirs to prepare adequate control strategies. Objective: To characterize the Leptospira serovars isolated from rodents, dogs, pigs and water samples in Colombia. Materials and methods: Leptospira organisms were isolated and cultured, and pathogenic strains were identified using a polymerase chain-reaction (PCR). Leptospira DNA and Salmonella Braenderup H9812 (molecular weight standard) DNA were cleaved using NotI and subjected to pulsed-field gel electrophoresis (PFGE). The PFGE patterns were analyzed based on bacterial strain-typing criteria and Dice coefficients (DCs) between these isolates and over 200 Leptospira organisms isolated from other parts of the world. Results: All of the isolates were pathogenic strains, and five were genetically characterized. The P275 (84% DC) and P282 (95% DC) pig isolates were related to the Leptospira interrogans Pomona serovar; the I15 (DC: 100%) rat isolate was identical to the Leptospira interrogans Icterohameorrhagiae or Copenhageni serovars, while the C67 (64% DC) dog and A42 (60% DC) water isolates were not related (< 73.7% DC) to any of the 200 reference serovars; the closest serovars were the Leptospira noguchii Nicaragua and Orleans serovars, respectively. Conclusion: This was the first molecular characterization of Colombian Leptospira spp isolates; these isolates will be used to develop a Colombian diagnostic panel.

Keywords

Leptospira, electrophoresis, gel, pulsed-field, Colombia.