Identification of Rickettsia spp infection in patients with clinical suspicion of Leptospirosis: Application of Molecular Techniques in a Case Series

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Presentation Abstract

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Abstract: Leptospirosis is a public health problem on the Colombian Caribbean Coast. In Cartagena, a major city in this region, this disease is endemic with high annual lethality. In clinical practice, differential diagnosis of leptospirosis with others icteric febrile syndromes is crucial to an appropriated therapeutic approach. Nevertheless, high complexity hospitals employ only serological test to confirm suspicious cases, with an elevated frequency of undetermined results. Therefore, the aim of this study was to apply molecular techniques in patients under leptospirosis suspicion. It was carried out a case series study with adults in 2013 last trimester. Patients with clinical manifestations and positive/undetermined results in serological test for leptospirosis were included. We used Polymerase Chain Reaction to detect *Leptospira spp* from blood samples with specific primers that amplify a DNA segment from the *lipl32* gen. A total of 9 patients were included (3 women, 6 men). IgM test for leptospirosis was positive in 5 subjects and undetermined in 4 others. A 423pb product was expected, however only 3 samples showed an amplicon of 358pb. When those DNA fragments were sequenced, none of them were part of *Leptospira spp*. genome. Thereafter, samples were amplified for *Riskettsia spp.* by nested PCR for the *OmpB* gene. Seven samples were positive (420pb amplicon). These samples were also positive for *Rickettsia spp* 17KDa gene (230pb amplicon). According to these results, in spite of high clinical suspicion in a scenario were physicians are familiarized with leptospirosis, lacking of specific tests could lead to misdiagnosis. On this particular situation, considering that therapeutic approaches between leptospirosis and rickettsiosis are mainly divergent, a permanent protocol for

differential diagnosis would be a major advance in reducing diseases burden. Also, this case series study revealed an apparently silent public health threat by rickettsiosis.

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