



โครงการการตรวจทางห้องปฏิบัติการเชิงรุกในพื้นที่บริการ โรงพยาบาลพรหมคีรีและ
 การพัฒนาสุขภาพชุมชนเพื่อลดอุบัติการณ์การติดเชื้อเลปโตสไปโรซิส
 Promoting campaign in laboratory testing for confirmatory of
 Leptospirosis in Phrom Khiri Hospital and service area
 โครงการบริการวิชาการโดยศูนย์บริการวิชาการ ร่วมกับ สำนักวิชาสหเวชศาสตร์
 รหัสโครงการ SE2024019

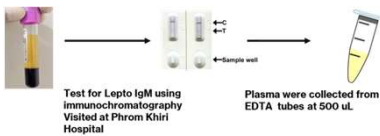


INTRODUCTION

Leptospira is a genus of spiral-shaped bacteria responsible for leptospirosis, a widespread zoonotic disease that poses significant public health challenges worldwide. The bacteria are primarily transmitted to humans and animals through direct or indirect exposure to contaminated water, soil, or the bodily fluids of infected animals. Reservoir hosts, such as rodents, can harbor the bacteria without showing symptoms, serving as a persistent source of infection for incidental hosts, including humans. Leptospirosis presents with a wide range of clinical manifestations, from mild flu-like symptoms to severe. This broad spectrum of symptoms often complicates clinical diagnosis, as leptospirosis can be mistaken for other febrile illnesses. Therefore, timely and accurate laboratory diagnosis is essential for proper case management. Laboratory testing, including serological assays and molecular techniques, plays a critical role in confirming infection, guiding appropriate treatment, and preventing severe complications associated with delayed or missed diagnoses.

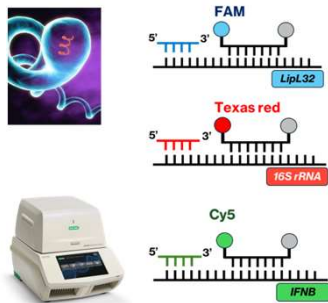
MATERIALS AND METHODS

1 Sample collection & Immunochromatography

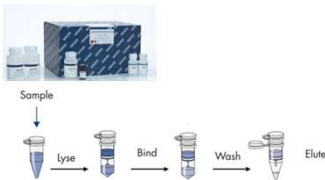


3 Quantitative PCR

Target Genes: Specific hydrolysis probes and primers were designed to detect the LipL32 gene & 16S rRNA of *Leptospira* spp.
 BioRad CFX96 real-time thermal cycler was used for probe-based qPCR



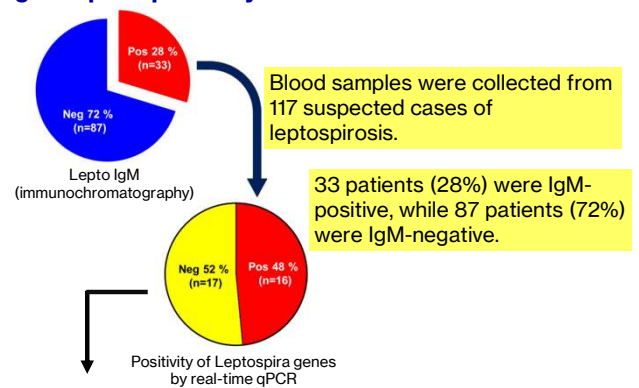
2 DNA extraction



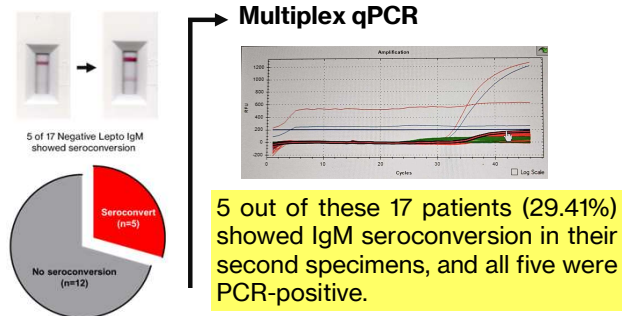
Performed using Qiagen DNA Blood Mini Kit.qPCR

RESULTS

1 Study population IgM & qPCR positivity



2 Seroconversion



CONCLUSION

The results suggest that this probe-based qPCR is useful for diagnosis of leptospirosis. The specificity of the IgM rapid test in this endemic area is still questionable because about half of patients with IgM-positive were PCR-negative even at the early stage of infection. The combination of gene detection and serologic testing is recommended to increase diagnostic accuracy. PCR and commercial serologic tests from different companies should be further evaluated in larger clinical samples

References;

- Podgoršek D, Ruzič-Sabljić E, Logar M, Pavlović A, Remec T, Baklan Z, Pal E, Cerar T. Evaluation of real-time PCR targeting the lipL32 gene for diagnosis of *Leptospira* infection. *BMC Microbiol.* 2020 Mar 11;20(1):59. doi: 10.1186/s12866-020-01744-4. PMID: 32160864; PMCID: PMC7066766.
- Backstedt BT, Buyuktanir O, Lindow J, Wunder EA Jr, Reis MG, Usmani-Brown S, Ledizet M, Ko A, Pal U. Efficient Detection of Pathogenic *Leptospira* Using 16S Ribosomal RNA. *PLoS One.* 2015 Jun 19;10(6):e0128913. doi: 10.1371/journal.pone.0128913. PMID: 26091292; PMCID: PMC4474562.