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## Diagnostic accuracy of a rapid immunoassay for point-of-care detection of urinary tract infection in dogs

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**OBJECTIVE:** To determine the diagnostic accuracy of a rapid immunoassay (RIA) for point-of-care detection of urinary tract infection (UTI) of dogs, compared with criterion-referenced diagnosis with bacterial culture.

**SAMPLE:** 200 urine samples obtained from dogs and submitted to a veterinary microbiology diagnostic laboratory for routine bacterial culture and antimicrobial susceptibility determination.

**PROCEDURES:** Samples were evaluated by use of quantitative bacterial culture and the RIA. Sensitivity, specificity, and positive and negative predictive values of the RIA were calculated; results of bacterial culture were the criterion-referenced outcome. A  $\kappa$  statistic was calculated to determine agreement between bacterial culture and RIA results.

**RESULTS:** 56 of 200 (28%) urine samples had positive results for bacterial growth by use of culture methods; there were 38 (19%) positive results likely to be associated with bacterial UTI on the basis of sample collection method and bacterial concentration. Sensitivity and specificity of the RIA for detecting samples likely to be associated with UTI ( $\geq 1,000$  CFUs/mL) were 97.4% and 98.8%, respectively. The positive and negative predictive values of the RIA for bacterial cultures with likely UTI were 0.949 and 0.994, respectively. Agreement between bacterial culture and RIA outcome for UTI was substantial (weighted  $\kappa$ , 0.718).

**CONCLUSIONS AND CLINICAL RELEVANCE:** The RIA test evaluated in this study accurately detected UTI of dogs, compared with detection with the criterion-referenced bacterial culture method. Use of this point-of-care RIA could allow clinicians to diagnose UTI at the time of a patient visit and provide information useful for immediately initiating empirical antimicrobial treatment. (Am J Vet Res 2016;77:162-166)

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