Meta-analysis of diffusion-weighted imaging in the differential diagnosis of renal lesions

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CLEAN VERSION

Meta-analysis of diffusion-weighted imaging in the differential diagnosis of renal lesions

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Abstract

Purpose: To assess the diagnostic value of diffusion-weighted imaging (DWI) in distinguishing between renal malignant and benign lesions.

Materials and methods: Electronic databases were systematically searched to identify original studies evaluating DWI findings on renal lesions from January 2000 through January 2018. Pooled weighted estimates of sensitivity, specificity, positive likelihood ratio (PLR), negative likelihood ratio (NLR), and diagnostic odds ratio (DOR) were calculated. A summary receiver operator characteristic (sROC) curve was constructed to calculate the area under the sROC curve (AUC). Publication bias was assessed by using Deeks' asymmetry test.

Results: A total of 15 studies including 1386 renal lesions were eligible in the meta-analysis. The pooled sensitivity and specificity with a corresponding 95% confidence interval (CI) were 0.83 (95% CI: 0.80–0.86) and 0.74 (95% CI: 0.71–0.78), respectively. The PLR, NLR, and DOR were 3.21 (95% CI: 2.39–4.32), 0.24 (95% CI: 0.18–0.30), and 15.95 (95% CI: 11.19–22.71), respectively. The AUC