13. Accuracy of transvaginal ultrasound and magnetic resonance imaging for

diagnosis of deep endometriosis in bladder and ureter: a meta-analysis

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Abstract

This meta-analysis aimed to determine the accuracy of transvaginal ultrasound (TVS) and

pelvic magnetic resonance imaging (MRI) in diagnosing urinary tract endometriosis (UTE).

A comprehensive search of the Pubmed and Embase was conducted between January 1989

and June 2020. Studies that described the accuracy of MRI or TVS for the diagnosis of UTE

using surgical data as the reference standard were included. Of the 913 citations identified, 23

studies were analysed. For detection of endometriosis in bladder endometriosis (BE), the

overall pooled sensitivities of TVS and MRI were 72% and 68% respectively, and their

specificities were 99% and 100% respectively. For detection of endometriosis in the ureteral

endometriosis (UE), the overall pooled sensitivities of TVS and MRI were 97% and 87%

respectively, and their specificities were both 100%. In conclusion, both TVS and MRI

provide good accuracy with specific strong points in diagnosing UTE and seem useful firstline

methods from a clinical perspective. Besides, pelvic MRI and TVS are more accurate for

predicting UTE localised in the ureter than bladder, especially in terms of

sensitivity.IMPACT STATEMENTWhat is already known on this subject? Previous

studies have confirmed high diagnostic value of transvaginal ultrasound (TVS) and magnetic

resonance imaging (MRI) on bladder endometriosis (BE) respectively. However, high

heterogeneity was found for both sensitivity and specificity and no meta-analysis has yet

been performed to test the diagnostic value of TVS and MRI for ureteral endometriosis

(UE).What the results of this study add? In this meta-analysis, we firstly confirmed high

diagnostic value of TVS and MRI on UE respectively. For detection of UE, the overall

pooled sensitivities of TVS and MRI were 97% and 87% respectively, and their specificities

were both 100%.What the implications are of these findings for clinical practice and/or

further research? Early preoperative diagnosis and accurate understanding of the

widespread distribution of endometriosis are prerequisites for radical surgical in UTE. In the

present study, we updated the previous results on the accuracy of TVS and MRI for the

diagnosis of BE and firstly confirmed high diagnostic value of TVS and MRI on UE. Both

TVS and MRI provide good accuracy with specific strong points in diagnosing UTE and

seem useful first-line methods from a clinical perspective.

Keywords: Magnetic resonance imaging; meta-analysis; transvaginal ultrasound; urinary

tract endometriosis.