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Column: META ANALYSIS

Diagnostic value of magnetic resonance cholangiopancreatography in choledocholithiasis

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Abstract

AIM To evaluate the diagnostic accuracy of magnetic resonance cholangiopancreatography (MRCP) in patients with choledocholithiasis.

METHODS: We systematically searched Medline, EMBASE, Web of Science, and Cochrane databases for studies reporting on the sensitivity, specificity and other accuracy measures of diagnostic effectiveness of MRCP for detection of common bile duct (CBD) stones. Pooled analysis was performed using random-effects models, and receiver operating characteristic curves were generated to summarize overall test performance. Two reviewers independently assessed the methodological quality of studies according to standards for reporting diagnostic accuracy and quality assessment for studies of diagnostic accuracy tests.

RESULTS: A total of 25 studies involving 2010 patients with suspected choledocholithiasis and 776 patients with CBD stones met the inclusion criteria. Average inter-rater agreement on the methodological quality checklist was 0.96. Pooled analysis of the ability of MRCP for detection of CBD stones showed the following effect estimates: sensitivity, 0.90, 95%CI: 0.88-0.92, $I^2=83.80$, $P<0.001$; specificity, 0.95, 95%CI: 0.93-1.0, $I^2=110.51$, $P<0.005$; positive likelihood ratio, 13.28, 95%CI: 8.85-19.94, $I^2=78.95$, $P<0.008$; negative likelihood ratio, 0.13, 95%CI: 0.09-0.18, $I^2=6.27$, $P<0.001$; and diagnostic odds ratio, 143.02, 95%CI: 82.42-250.95, $I^2=44.19$, $P<0.001$. The area under the ROC curve was 0.95. Significant publication bias was not detected ($P=0.266$).

CONCLUSION: MRCP has high diagnostic accuracy for detection of choledocholithiasis. MRCP should be the method of choice for cases with suspicion of CBD stones.

Match Overview

Rank	Source	Words	Matched	Percentage
1	Internet	144 words	trawled on 05-Feb-2008 www.chestjournal.org	2%
2	CrossCheck	143 words	Jong Ho Moon, "The Detection of Bile Duct Stones in Suspected Biliary Pterectibia: Comparison of MRCP, ERCP and Endoscopic Ultrasonography"	2%
3	Internet	93 words	trawled on 24-Feb-2008 radiology.rajajms.org	1%
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5	CrossCheck	47 words	Varghese, J.C. "The diagnostic accuracy of magnetic resonance cholangiopancreatography and ultrasonography in the detection of choledocholithiasis: A meta-analysis"	1%
6	CrossCheck	40 words	Chan, Ho-Hung, E-Ming Wang, Meng-Shun Sun, Ping-I Hsu, Wei-Lun Tsai, Tsung-Jian Tsai, Kai-Ming Wang, Wei-Cheng Chen, "Diagnostic accuracy of magnetic resonance cholangiopancreatography for choledocholithiasis: A meta-analysis"	1%
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