

Title: Magnetic resonance cholangiopancreatography
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Reference: MSAC reference 26 Assessment report
First printed August 2005
ISBN (Print) 0 642 82739 7 **ISBN (Online)** 0 642 82749 4

Aim

To assess the safety, effectiveness and cost-effectiveness of magnetic resonance cholangiopancreatography (MRCP):

- compared to endoscopic retrograde cholangiopancreatography (ERCP) and computed tomography (CT) intravenous cholangiography to exclude or diagnose stones of the common bile duct (CBD) in patients where conventional assessment (clinical history, examination, laboratory testing, abdominal ultrasound) is insufficient to plan management; and
- compared to ERCP in the diagnosis and/or treatment planning of the jaundiced patient with suspected bile duct obstruction where conventional assessment with or without CT of the abdomen is insufficient to determine level or cause of obstruction or to plan management

Conclusions and results

Safety MRCP is a less invasive test than ERCP and as least as safe as CT intravenous cholangiography when patient contra-indications are duly observed.

Effectiveness The accuracy of MRCP for the detection of CBD stones in patients with a differential diagnosis of biliary obstruction is high and highly concordant with ERCP and CT cholangiography. MRCP is highly sensitive and specific in the detection of bile duct strictures and comparable to ERCP for localising strictures and for the diagnosis and differentiation of pancreatic cancer and chronic pancreatitis. Therapeutic procedures can be performed at ERCP thus the relative effectiveness of MRCP varies according to the pre-test probability of the differential diagnoses and the associated pre-test probability of proceeding to ERCP.

Cost-effectiveness MRCP is both cost saving and more effective than ERCP in the average post-cholecystectomy patient presenting with pain and/or abnormal liver function tests, or presenting with clinical features to suggest a low to moderate probability of stones (less than 60%). ERCP is less costly above this threshold.

Recommendation

MSAC recommended that on the strength of evidence pertaining to the safety, effectiveness and cost-effectiveness of magnetic resonance cholangiopancreatography, public funding should be supported for this procedure when referred by specialists. The Minister for Health and Ageing accepted this recommendation on 4 July 2005.

Method

MSAC conducted a systematic review of medical literature using the Cochrane Library, Medline, PreMedline, Current Contents and EMBASE databases from January 1997- July 2004. MRCP effectiveness was inferred from three systematic reviews and 43 studies of diagnostic test accuracy that compared MRCP with ERCP or CT cholangiography and two studies assessing the impact of MRCP on patient management. Additional data about MRI safety was sought from regulatory agencies. An economic model was developed to compare the cost-utility of MRCP versus ERCP in the investigation of post-cholecystectomy patients presenting with pain and/or abnormal liver function tests with a differential diagnosis that included biliary obstruction.