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Title **CT and MRI for Selected Clinical Disorders: A Systematic Review of Economic Evaluations**

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Aim

To summarize the evidence on the cost effectiveness of CT and MRI in investigating specific clinical conditions of the chest, cardiovascular, neurological, and urological systems.

Conclusions and results

The studies included in this review suggest that CT or MRI are effective for some conditions (especially for peripheral vascular disease and stroke), but they are not necessarily more effective or cost effective than traditional alternatives (for peripheral vascular disease). For other conditions, the evidence of cost effectiveness appears positive, but limited (renal artery stenosis and mild head injuries). The evidence for effectiveness or cost effectiveness of CT or MRI for lung cancer screening, pulmonary embolism, carotid artery disease, and cerebral aneurysms is equivocal or conflicting.

Recommendations

Not applicable.

Methods

Published economic evaluations were systematic identified by searching multiple databases using a defined strategy and selection criteria. Of 423 potentially relevant economic evaluations, 21 studies of 8 clinical conditions were identified: peripheral vascular disease, renal artery stenosis, lung cancer screening, pulmonary embolism, carotid artery disease, cerebral aneurysms, head injuries, and stroke. No economic studies addressed coronary artery disease, headaches, seizures, arteriovenous malformations, or urinary tract calculi screening.

Further research/reviews required

The indications for CT and MRI, and their performance compared with earlier generations of the same technologies, are advancing faster than the available literature. Hence, this report could be dated in some areas. Years after CT and MRI techniques have come into use it remains difficult to find high-quality studies that address their use. No studies were found that addressed the cost effectiveness of CT and MRI for coronary artery disease, headaches, seizures, arteriovenous malformations, or urinary tract calculi screening.

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