Diagnostic and therapeutic modalities for coronary artery disease

Medical Services Advisory Committee

Record Status
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Authors' objectives
This report aims to provide advice on the state of play of the introduction and use of diagnostic and therapeutic procedures for coronary artery disease in Australia. This report is intended for the use of health planners and policy makers. It provides an assessment of the current state of development of diagnostic and therapeutic procedures for coronary artery disease, their present use and potential future application of the technologies, and the likely impact on the Australian health care system.

Authors' conclusions
Magnetic resonance angiography (MRA):
- 2-D MRA has poorer spatial resolution than, and is generally considered inferior to, conventional coronary angiography (CA), and improvements to the technology are required before MRA should be used routinely in clinical practice. - Motion artefacts must be reduced and spatial resolution and contrast improved before 3-D MRA can replace conventional CA. - MRA is considered to be a safe, non-invasive imaging modality. - Coronary MRA does not appear to be widely practiced at present in Australia. - Further research is required before conclusions on the potential cost impact of coronary MTA can be made.

Multi-detector computerised tomography (MDCT): - Neither 4-slice nor 16-slice MDCT have been shown to be comparable with conventional CA in terms of diagnostic accuracy in detecting stenosis, but in the absence of a full systematic review it is difficult to draw definitive conclusions from the literature. - MDCT of the coronary arteries is considered to be a safe, non-invasive procedure, but a reduction in the dose of redundant radiation is considered to be warranted. - It is likely that coronary MDCT is not being widely performed in clinical practice in Australia. - It has been speculated that higher throughput may offset the high set-up costs of MDCT, but more research is required before conclusions may be drawn regarding the cost-effectiveness of coronary MDCT.

Electron beam computerised tomography (EBCT) - EBCT is most applicable to clinical decision-making for symptomatic patients presenting with high-risk CAD, and is not recommended for screening for coronary calcification in asymptomatic patients or tracking individual disease status. - EBCT is considered to be a safe, non-invasive procedure that presents fewer procedural risks than conventional CA, but EBCT may increase potential for inappropriate invasive follow up procedures due to the high rate of false positive diagnosis. - Coronary EBCT does not appear to be widely undertaken in Australia. - The cost of acquiring EBCT technology is high; however, the charge for EBCT is approximately one-tenth of that for conventional CA.

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