Title:	**Positron emission tomography (PET) for recurrent ovarian cancer**
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Reference:	**MSAC Reference 35a Assessment report** **First printed June 2008** **ISBN 1-74186-646-4**

The procedure

Positron emission tomography (PET) is a minimally invasive nuclear medicine imaging technique that provides information about function and metabolism that is complementary to the structural information provided computed tomography (CT). PET/CT machines combine both systems.

Aim

To assess the safety, effectiveness and cost-effectiveness of the addition of PET/CT in the assessment of patients with suspected locoregional recurrence of epithelial ovarian cancer considered to be potentially resectable on conventional staging.

Results and conclusions

Safety: PET and PET/CT are considered safe procedures.

Effectiveness: No direct evidence was found reporting the health outcomes of patients with recurrent ovarian cancer, assessed with and without FDG-PET. Therefore, evidence for accuracy, change in management and the expected benefit of changes in treatment on health outcomes was considered to evaluate the effectiveness of PET using a linked evidence approach. PET has greater diagnostic accuracy than conventional imaging in detecting recurrent ovarian cancer, with an incremental sensitivity of 83-88% and specificity of 71-100% for detecting recurrence, and is likely to detect additional sites of disease. However, these data are of limited value in quantifying the additional accuracy of PET for diagnosing disease that is likely to preclude cytoreductive surgery. PET leads to changes in patient management, most commonly the avoidance of surgery. PET is considered to leads to avoidance of surgical morbidity and mortality in patients who avoid radical surgery. Expert opinion is that this leads to improved patient outcomes in terms of quality of life, but definitive evidence for whether this outweighs any potential benefit of surgery is lacking.

Cost-effectiveness: An exploratory analysis of the short term costs and consequences of staging (changes in management; health outcomes) found PET is likely to be cost saving in patients planned for surgery (mean cost savings/100 patients: $313,937 [95% confidence limits [CL]: $111,428 to $536,597]). The overall health outcomes associated with this are not known. The exploratory nature of the analysis requires cautious interpretation.

Recommendation

MSAC finds that PET and PET/CT are more accurate than conventional staging for recurrent ovarian cancer; likely to improve patient outcomes through the avoidance of radical surgery which is unlikely to provide long-term benefit; and likely to be cost-saving for women with recurrent ovarian cancer who are considered suitable for secondary cytoreductive surgery after conventional staging. MSAC recommends that public funding is supported for this procedure when referred by a specialist.

Methods

This report updates a previous MSAC review from 2000. A recent high quality health technology assessment (HTA) report from the Agency for Healthcare Research and Quality (AHRQ)-United States (AHRQ, 2004) was used as the basis of this assessment. A systematic review to December 2006 was undertaken to include more recent studies. In the absence of an overall measure of health outcome (eg life-years saved), a modeled cost consequence analysis of short-term economic implications, including probabilistic sensitivity analysis, was conducted of PET in patients planned for secondary cytoreductive surgery. Due to limited information about this patient group, including the incremental accuracy of PET, it is considered an exploratory analysis only.