



Title	Surveillance of Barrett's Esophagus: Exploring the Uncertainty Through Systematic Review, Expert Workshop, and Economic Modeling
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Aim

To assess what is known about the effectiveness, safety, affordability, cost effectiveness, and organizational impact of endoscopic surveillance in preventing morbidity and mortality from adenocarcinoma in patients with Barrett's esophagus.

Conclusions and results

No randomized controlled trials (RCTs) or well-designed nonrandomized controlled studies were identified, although two comparative studies and numerous case series were found. Reaching clear conclusions from these studies was impossible owing to lack of evidence supported by RCTs. Three cost-utility analyses of surveillance of Barrett's esophagus were identified, one of which built on a previous study by the same group. Both sets of authors used Markov modeling and confined their analysis to 50- or 55-year-old white men with gastro-esophageal reflux disease (GORD) symptoms. As the models are American, there are almost certainly differences in practice from the UK. In a workshop, experts identified several key areas of uncertainty that need to be addressed. Our Markov model suggests that the base case scenario of endoscopic surveillance of Barrett's esophagus at 3-year intervals, with low-grade dysplasia surveyed yearly and high-grade dysplasia at 3-month intervals, does more harm than good when compared with no surveillance. Surveillance produces fewer quality-adjusted life-years (QALYs) for higher cost than no surveillance. Probabilistic analyses suggest it is unlikely that surveillance will be cost effective, even at relatively high levels of willingness to pay. A simulation showed that nonsurveillance continued to cost less and result in better quality of life than surveillance.

Recommendations

Current evidence is insufficient to assess the clinical effectiveness of surveillance programs of Barrett's esophagus. A lack of RCT data is the major deficiency. Available models and analyses of cost effectiveness suggest that

surveillance programs either do more harm than good compared to no surveillance, or are unlikely to be cost effective at usual levels of willingness to pay.

Methods

Three strands of enquiry were used to address the aims of this report:

1. Systematic review of the effectiveness of endoscopic surveillance of Barrett's esophagus.
2. Workshop on surveillance of Barrett's esophagus.
3. Markov model to assess the cost effectiveness of a surveillance program compared with no surveillance and to quantify important areas of uncertainty.

Further research/reviews required

Future research should target the overall effectiveness of surveillance and the individual elements that contribute to a surveillance program, particularly the performance of the test and the effectiveness of treatment for Barrett's esophagus and adenocarcinoma of the esophagus. Of particular importance is to clarify the natural history of Barrett's esophagus.