
4.6. An economic analysis of endoscopic ablative therapy for management of nondysplastic Barrett's esophagus

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Background and aims: Advances have occurred in the development of safe and effective ablative therapies for Barrett's esophagus. The aim of the current study was to perform an economic analysis evaluating the cost-effectiveness of endoscopic ablation of nondysplastic Barrett's esophagus.

Methods: A Markov model evaluated three competing strategies in a hypothetical 50-year-old cohort with nondysplastic Barrett's esophagus from a societal perspective. Strategy I – natural history of Barrett's disease (without surveillance); Strategy II – surveillance performed according to the American College of Gastroenterology practice guidelines; Strategy III – endoscopic ablative therapy. The model was biased against ablative therapy with a conservative estimate of complete response and continued standard surveillance even after complete ablation. All potential complications were accounted for, and an incomplete histological response after ablation was presumed to have the same risk of progression as untreated Barrett's. Transitional probabilities, discounted cost, and utility values to estimate quality-adjusted life-years (QALY) were obtained from published information. Direct costs were used in our analysis.

Results: In baseline analysis, the ablative strategy yielded the highest QALY and was more cost-effective than endoscopic surveillance. In a Monte Carlo analysis, the relative risk of developing cancer in the strategy based on endoscopic ablation was decreased compared with the other strategies. In threshold analysis, the critical determinants of cost-effectiveness of the ablative strategy were rate of complete response to ablation, total cost of ablation, and risk of progression to dysplasia.

Conclusions: Within the limits of the model, ablation for nondysplastic Barrett's esophagus is more cost-effective than endoscopic surveillance. Clinical trials of ablative therapy in nondysplastic Barrett's esophagus are needed to establish its effectiveness in reducing cancer risk.