

Does Previous Percutaneous Coronary Stenting Have An Effect On The Cost-Effectiveness Of Subsequent Coronary Artery Bypass Grafting?

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Abstract

Background In this study we aim to investigate firstly the long term impact of previous percutaneous transluminal coronary stenting on outcomes following subsequent coronary artery bypass surgery and secondly to assess its effect on the cost effectiveness of these interventions in different patient cohorts.

Methods Decision analytical Markov simulation was used to model long term costs, quality of life, and cost effectiveness after revascularisation using data from referenced sources. Probabilistic sensitivity analysis was used to investigate the effect of uncertainty associated with the results.

Results Percutaneous coronary stenting was found to significantly impact on the effectiveness of coronary artery by pass grafting, reducing its effectiveness over a ten year period by 0.111 QALY, following single percutaneous intervention, and 0.369 QALY, following multiple percutaneous interventions. Long term survival was also affected.

When a cost effectiveness threshold of 30,000 £/QALY was applied bypass surgery was more cost effective than stenting in men under the age of 67, women under the age of 72; in diabetic men under the age of 69 and diabetic women under the age of 74; and in all patients with a life expectancy greater than 8 years.

Conclusions The optimum revascularisation strategies suggested by our analysis appear to differ considerably from current practice in the United Kingdom. The reasons for this should be urgently investigated as the potential implications on patient outcomes, referral pathways, service provision and future clinical research are highly significant.

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