

Cost-Effectiveness of PCI with DES vs. CABG for Patients with Left Main Disease: Insights from the SYNTAX Trial

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Disclosures



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Background



- Recently, the SYNTAX trial has demonstrated that CABG is both clinically superior and economically attractive compared with PCI for most patients with complex 3-vessel CAD.
- However for patients with left main disease, short and long-term results of PCI were generally comparable to those for CABG
- Little is known about the cost-effectiveness of PCI vs. CABG for left main disease- particularly regarding interactions between treatment selection and clinical and angiographic factors

Study Objectives



- To compare, from a US perspective, the cumulative 5year cost of PCI with drug-eluting TAXUS stents (DES-PCI) versus that of CABG surgery for treatment of patients with left main CAD
- To evaluate the lifetime cost-effectiveness of DES-PCI compared with CABG, measured as cost per qualityadjusted year of life (QALY) gained
- To explore the cost-effectiveness of DES-PCI vs. CABG in clinically relevant patient subsets, as defined by the clinical outcomes in the SYNTAX trial

Economic Study Analysis Plan



 Incremental cost-effectiveness ratio expressed as cost per quality-adjusted life year (QALY) gained

syntaX

<u>General Approach – 2 Stages</u>

- <u>In-trial analysis</u> based on observed survival, health state utility (EQ-5D), and costs derived from reported health care resource use during the trial period
- <u>Lifetime analysis</u> based on projections of survival, quality-adjusted survival and costs beyond the trial period

Index Procedure Resource Use



* Per protocol population (includes planned staged procedures)

SYNTA







Difference in Quality Adjusted Survival over Time



Time Since Randomization (Years)	∆ Life Years (CABG-PCI)	Δ QALYs (CABG-PCI)
1	+0.003	-0.040
2	-0.001	-0.057
3	-0.005	-0.067
4	-0.012	-0.080
5	-0.018	-0.101

* Negative values reflect better outcomes with PCI

Markov Model



For the Projection of Post-Trial Life Years, QALYs and Costs

- Monthly risk of death based on age and racematched data from US life tables calibrated to the observed 5 year mortality for the PCI population
 - Survival benefit of CABG based on the observed in-trial mortality hazard ratio for CABG vs. PCI
- <u>Base case</u>: Gradual attenuation of CABG effect by 10 years
- Long-term costs and utility weights obtained from regression models developed from trial data

In-Trial and Projected Survival



Survival

Lifetime Cost–Effectiveness Results



C/E Acceptability





Cost-Effectiveness of CABG vs PCI in LM Dz SYNTAX Score Tertiles

Low (<23)

Mid (23–32)

High (>32)



Conclusions



- For the majority of patients with <u>left main CAD</u>, DES– PCI provides better long-term clinical outcomes than CABG at a lower cost
- On the other hand, for patients with <u>complex left</u> <u>main CAD</u>, CABG provides better long-term health outcomes at cost that represents an attractive use of societal health care resources
- These findings should be viewed as hypothesis generating- will need to be confirmed in the EXCEL trial, which will evaluate the clinical, quality of life, and economic outcomes of 2nd generation DES vs.
 CABG in a larger and more homogeneous population of patients with LM disease