

Economic Evaluation of Ticagrelor (Brilique) for the prevention of atherothrombotic events in adult patients with Acute Coronary Syndrome (ACS) including patients managed medically, and those who are managed with PCI (Percutaneous Coronary Intervention) or CABG (Coronary Artery Bypass Graft).



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Summary

1. In February 2011 the HSE/Corporate Pharmaceutical Unit (HSE/CPU) requested a pharmacoeconomic assessment on Ticagrelor (Brilique®). The NCPE met with the company AstraZeneca on the 10/03/2011 and the 11/04/2011. An economic dossier on the cost-effectiveness of Ticagrelor (Brilique®) was submitted by AstraZeneca to the NCPE on the 27/07/2011.
2. Ticagrelor, a cyclo-pentyl-triazolo-pyrimidine, is a chemical class of anti-platelet agent that binds reversibly to the P2Y₁₂ receptor. It is the first reversibly binding oral ADP receptor antagonist. The key evidence for Ticagrelor is from the PLATO Study which was a multicentre, double-blind, randomised trial comparing Ticagrelor (180mg loading dose, 90mg twice daily thereafter) with Clopidogrel (300 – 600mg loading dose, 75mg daily thereafter) for the prevention of cardiovascular events in 18,624 patients admitted to hospital with an acute coronary syndrome, with or without ST-Segment elevation.
3. The primary endpoint for the PLATO Study was a composite of death from vascular causes, myocardial infarction or stroke which occurred in 9.8% of patients who received Ticagrelor as compared with 11.7% of those who received Clopidogrel. Myocardial infarction occurred in 5.8% of the Ticagrelor treatment group as compared to 6.9% of those receiving Clopidogrel. There was no significant effect observed on the rate of stroke at one year however death from vascular causes occurred in 4% of the Ticagrelor treatment group compared to 5.1% in the Clopidogrel treatment arm. No significant difference in the rates of major bleeding was found between Ticagrelor and Clopidogrel (11.6% versus 11.2% respectively). But Ticagrelor was associated with a higher rate of major bleeding not related to CABG (4.5% versus 3.8% respectively).
4. A lifetime model with a 40 year time horizon was used to estimate the cost-effectiveness of Ticagrelor as compared to generic Clopidogrel in patients with Acute Coronary Syndromes. The cost utility model was a 2 part construct with a one year decision tree based on patient level data from

PLATO and a Markov model for long term extrapolation over the 40 year time horizon. The base case analysis used costs as per the General Medical Services (GMS) Scheme and the perspective as that of the Health Service Executive (HSE). The review group was satisfied with the cost and utility inputs which were discounted at an annual rate of 4%.

5. The base case analysis indicated that Ticagrelor was a dominant strategy. Analysis using the Drug Payment Scheme (DP) demonstrated Ticagrelor as highly cost-effective with an incremental cost-effectiveness ratio of €805 per quality adjusted life year (QALY). Subgroup analysis also confirmed Ticagrelor a cost-effective strategy. For the NSTEMI subgroup the cost-effectiveness of Ticagrelor was €2,073/QALY. For the Unstable angina subgroup the cost-effectiveness of Ticagrelor as compared with Clopidogrel was €93/QALY. The model also estimated the cost-effectiveness of Ticagrelor versus Prasugrel in the invasive patient subgroup. The analysis revealed that Ticagrelor was highly cost-effective versus Prasugrel with an ICER of €4,652/QALY. A probabilistic sensitivity analysis indicated Ticagrelor was highly cost-effective as compared to Clopidogrel with an ICER €13/QALY gained. At a willingness to pay threshold of €20,000/QALY gained, the probability that Ticagrelor is cost-effective versus Clopidogrel was 99.8%. At a similar threshold the probability that Ticagrelor is cost-effective versus Prasugrel was 91.1%.
6. In relation to budget impact the potential direct costs to the HSE were calculated for the first 5 years. Direct costs of Ticagrelor were estimated to increase from €05,978 in 2012 to €3,459,187 by 2016. The net incremental impact of the reimbursement of Ticagrelor to the HSE under the Community Drugs Schemes is estimated at €45,766 in year 1 increasing to €401,966 in year 5.
7. We believe that Ticagrelor (Brilique®) may be considered a cost-effective therapy for the prevention of atherothrombotic events in adult patients with Acute Coronary Syndromes in the Irish Healthcare Setting. We are happy to recommend reimbursement of Ticagrelor under the Community Drugs Schemes.