

HIGHLIGHTS

Anticoagulation and risk of stroke and death in atrial fibrillation

Although anticoagulation therapy is an effective treatment for stroke prevention in atrial fibrillation, it remains underused in the community. Using administrative data, this population-based cohort study included all patients diagnosed with new-onset atrial fibrillation between 2009 and 2010 in Alberta, and followed them to the end of 2013. Of the 10 745 patients identified, 7358 (68.5%) received anticoagulation therapy, mostly with warfarin ($n = 6997$). Anticoagulation therapy was associated with a significantly decreased risk of ischemic stroke (hazard ratio [HR] 0.69, 95% confidence interval [CI] 0.58–0.82), all stroke (HR 0.77, 95% CI 0.65–0.91), all stroke and death, and all-cause mortality (HR 0.67, 95% CI 0.62–0.72) (Figure 1). This association was consistent for those receiving anticoagulants for primary or secondary prevention. There was an association with increased risk of hemorrhagic stroke (HR 1.92, 95% CI 1.17–3.16) but no increased risk of subdural or gastrointestinal hemorrhage. The authors conclude that on a population basis, anticoagulation is associated with decreased mortality among patients with atrial fibrillation in real-world practice. However, the

optimal strategy to screen for atrial fibrillation as a primary or secondary stroke prevention strategy needs to be determined. *CMAJ Open* 2016;4:E1-6.

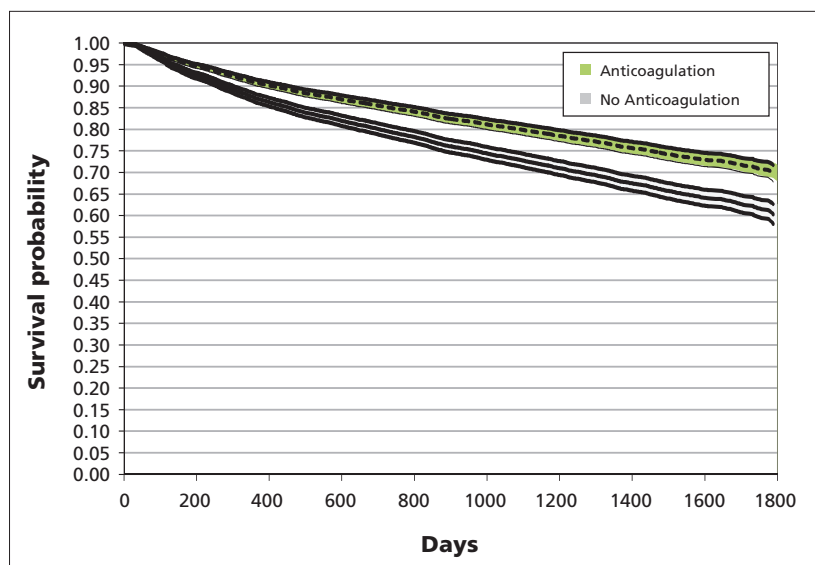


Figure 1: Cox survival curve for all stroke and death, with anticoagulation as a static covariate.

Cost-effectiveness of dual antiplatelet therapy after acute coronary syndrome

Guidelines recommend dual antiplatelet therapy with acetylsalicylic acid (ASA) and a P2Y12 receptor antagonist (e.g., clopidogrel, prasugrel, ticagrelor) for one year after acute coronary syndrome. However, the costs, benefits and risks of this approach vary depending on which agent is used. In this decision-analytic modelling study, the authors conducted an economic analysis comparing the cost-effectiveness of 12 months of treatment with clopidogrel, prasugrel or ticagrelor after an acute coronary syndrome, including ST-segment elevation myocardial infarction (STEMI) and non-STEMI. The model incorporated risks of death, recurrent acute coronary syndrome, heart failure, major bleeding and other adverse effects of treatment. Treatment with clopidogrel was associated with the lowest effectiveness (7.41 quality-adjusted life-years [QALYs], 95% CI 1.05–14.79) and lowest cost (\$39 601, 95% CI \$8434–111 186) among the three agents, whereas ticagrelor treatment had an effectiveness of 7.50 QALYs (95% CI 1.13–14.84) at a cost of \$40 649 (95% CI \$9327–

111 881). The incremental cost-effectiveness ratio for ticagrelor relative to clopidogrel was \$12 205 per QALY gained, whereas the ratio for prasugrel relative to clopidogrel was \$57 630 (Table 1). This analysis showed that ticagrelor was the most cost-effective P2Y12 receptor antagonist when used as part of dual antiplatelet therapy after acute coronary syndrome. *CMAJ Open* 2015;3:E438-46.

Table 1: Summary of cost-effectiveness analysis for the base case

| Strategy | Cost, \$ (95%CI)* | Effectiveness, QALY (95%CI) | ICER, \$/QALY† |
|-------------|------------------------|-----------------------------|----------------|
| Clopidogrel | 39 601 (8 343–111 186) | 7.41 (1.05–14.79) | – |
| Prasugrel | 40 422 (9 002–112 574) | 7.43 (1.06–14.79) | 57 630‡ |
| Ticagrelor | 40 649 (9 327–111 881) | 7.50 (1.12–14.84) | 12 205 |

Note: CI = confidence interval, ICER = incremental cost-effectiveness ratio, QALY = quality-adjusted life-year.

*All costs are in 2012 Canadian dollars.

†Compared with common reference of clopidogrel.

‡Extensively dominated (ICER is higher than that of a more effective strategy).