Cost-Effectiveness of Low-Dose Colchicine after Myocardial Infarction in the Colchicine Cardiovascular Outcomes Trial (COLCOT)

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Abstract
Aims:
In the randomized, placebo-controlled Colchicine Cardiovascular Outcomes Trial (COLCOT) of 4745 patients enrolled within 30 days after myocardial infarction, low-dose colchicine (0.5 mg once daily) reduced the incidence of the primary composite endpoint of cardiovascular death, resuscitated cardiac arrest, myocardial infarction (MI), stroke, or urgent hospitalization for angina leading to coronary revascularization. To assess the in-trial period and lifetime cost-effectiveness of low-dose colchicine therapy compared to placebo in post-MI patients on standard-of-care therapy.

Methods and Results
A multistate Markov model was developed incorporating the primary efficacy and safety results from COLCOT, as well as healthcare costs and utilities from the Canadian healthcare system perspective. All components of the primary outcome, non-cardiovascular deaths, and pneumonia were included as health states in the model as both primary and recurrent events. In the main analysis, a deterministic approach was used to estimate the incremental cost-effectiveness ratio (ICER) for the trial period (24 months) and lifetime (20 years). Over the in-trial period, the addition of colchicine to post-MI standard-of-care treatment decreased the mean overall per patient costs by 47%, from $502 to $265 CAD, and increased the quality adjusted life years (QALYs) from 1.30 to 1.34. The lifetime per patient costs were further reduced (69%) and QALYs increased with colchicine therapy (from 8.82 to 11.68). As a result, both in-trial and lifetime ICERs indicated colchicine therapy was a dominant strategy.

Conclusion
Cost-effectiveness analyses indicate that the addition of colchicine to standard-of-care therapy after myocardial infarction is economically dominant and therefore generates cost savings.

Keywords

Myocardial infarction, cost effectiveness, colchicine