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Title **Triple Therapy for Moderate-to-Severe Chronic Obstructive Pulmonary Disease**

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Aim

To evaluate the comparative clinical effectiveness, cost effectiveness, and health service impact of triple therapy in treating moderate-to-severe chronic obstructive pulmonary disease (COPD).

Conclusions and results

The evidence was insufficient to determine whether triple therapy was clinically superior to dual bronchodilator therapy or combination (LABA+ICS) therapy in treating moderate-to-severe COPD. Compared to the use of tiotropium alone, triple therapy was associated with a decrease in the number of COPD hospitalizations, improved lung function, and better quality-of-life measures in patients with moderate-to-severe COPD. The incremental cost-utility ratio of triple therapy (tiotropium+LABA+ICS) compared with monotherapy (tiotropium) was estimated to be $111 458 per quality-adjusted life-year (QALY). The cost per QALY of triple therapy varied depending on the source of efficacy data and the assumed cost of the LABA plus ICS. Using the base-case analysis, triple therapy would be cost effective if willingness to pay exceeded $111 458 per QALY. Otherwise monotherapy would be the cost-effective treatment.

Recommendations

Not applicable.

Methods

We conducted systematic reviews of clinical and economic literature to compare triple therapy (LAAC+LABA+ICS) with dual bronchodilator therapy (LAAC+LABA, regular use SAAC+LABA), combination therapy (LABA+ICS), or monotherapy (LAAC). Due to heterogeneity in the selected studies, we did not perform a meta-analysis. For the economic assessment, we performed a cost-utility analysis using a Markov model and taking a publicly funded healthcare perspective. In the base-case analysis, 65-year-old patients with severe-to-moderate COPD comprised the starting cohort. Comparators were monotherapy (tiotropium), dual bronchodilator therapy (tiotropium+LABA), and triple therapy (tiotropium+LABA+ICS). The time horizon was 5 years.

Further research/reviews required

More studies comparing therapies for COPD are needed.

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