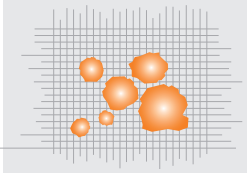
β-blockers in COPD—yes, it's OK (with care)



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Traditionally β-blockers have been avoided in people with asthma and chronic obstructive pulmonary disease (COPD) because of concerns about bronchospasm and reduced effectiveness of β_2-agonists for airways disease. This meant that people with COPD missed out on the benefits of β-blockers post–myocardial infarction, and if they had heart failure.

A meta-analysis in 2005[1] found that cardioselective β-blockers did not produce adverse respiratory effects in people with COPD. The authors concluded that β-blockers should therefore not be routinely withheld from people with COPD and concurrent heart failure and/or coronary artery disease.

Subsequent retrospective and observational cohort studies[2,3] suggest that β-blockers in people with COPD may not just lack adverse respiratory effects, but could have a positive effect on all cause mortality (cardiovascular and respiratory) and reduce COPD exacerbations and hospitalisations. These cohort studies are relatively small with a total of about 8500 patients, but indicated a relative reduction in all-cause mortality of 20–30%.

There is still a need for randomised controlled trials to establish the absolute benefit (or not) of β-blockers in COPD; and whether there are identifiable subgroups who are less or more likely to benefit. However, when introduced with care, β-blockers should be used in people with COPD and heart failure or previous myocardial infarction.

Practicalities

The majority of people with COPD appear to benefit from β-blocker use for cardiovascular disease or heart failure, with no detrimental effect on respiratory function. As with most prescribing in complex patients though, some caution is required.

- Use a cardioselective β-blocker such as metoprolol or atenolol
  - There is debate about the necessity of using a β-blocker with cardioselectivity but the conservative approach until more information is available is to use a cardioselective β-blocker
  - Cardioselectivity of β-blockers is generally dose related, and so increase the dose slowly
- Start with a low dose and titrate up slowly, monitoring respiratory function
  - Remember that for heart failure, dose titration of β-blockers is slow and dose increases should not be more frequent than two-weekly
  - If dyspnoea occurs, consider the aetiology—is this due to a heart failure or COPD exacerbation?

KEY POINT

- History repeats itself ...just as we have learned in the past 15 years that β-blockers are no longer contraindicated in people with heart failure, but are beneficial; β-blockers in people with COPD are no longer contraindicated—and could well be beneficial in reducing all-cause mortality and COPD exacerbations.

References

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2. Short P, Lipworth S, Elder D, Schembri S, Lipworth B. Effect of β-blockers in treatment of chronic obstructive pulmonary disease: a retrospective cohort study. BMJ. 2011; 342:d2549. doi:10.1136/bmj.d2549
3. Rutten F, Zuithoff N, Hak E, Grobbee D, Hoes A. β-blockers may reduce mortality and risk of exacerbations in patients with chronic obstructive pulmonary disease. Arch Intern Med. 2010;170:880–87.

NUGGETS *of* KNOWLEDGE provides succinct summaries of pharmaceutical evidence about treatment of common conditions presenting in primary care and possible adverse drug reactions.

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