Secondary prevention of ischaemic cardiac events

Apoor Gami

Other drugs

Beta-blockers

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Summary

Mortality

Compared with placebo Beta-blockers reduce mortality at 6 weeks to 3 years after MI compared with placebo (moderate-quality evidence).

Mortality from heart failure

Compared with placebo Beta-blockers may reduce mortality from heart failure in people with left ventricular dysfunction (low-quality evidence).

For GRADE evaluation of interventions for secondary prevention of ischaemic cardiac events, see table.

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Benefits

Survival:

We found one systematic review (search date 1993, 26 RCTs, > 24 000 people), which compared oral beta-blockers versus placebo within days or weeks of an acute MI and continued for between 6 weeks and 3 years. [18] Most RCTs followed people for 1 year. The review found that beta-blockers reduced mortality compared with placebo (RR 0.77, 95% CI 0.70 to 0.86). [18]

Anginal symptoms:

We found no systematic review and no good RCTs assessing the antianginal effects of beta-blockers in people after MI. Beta-blockers have been found to be effective in people with stable angina. See stable angina.

Different types of beta-blockers:

We found one systematic review [19] and one subsequent RCT. The review (search date not reported, 24 RCTs) found no differences between beta-blockers with and without cardioselectivity or membrane stabilising properties, but it raised concerns about the lack of efficacy of beta-blockers with intrinsic sympathomimetic activity in long term management after MI. [19] The subsequent RCT (607 people after MI) found that acebutolol, a beta-blocker with moderate partial agonist activity, decreased mortality at 1 year compared with placebo (AR of death: 6% with acebutolol *v* 11% with placebo; RR 0.52, 95% CI 0.29 to 0.91). [20]

Effects in different subgroups:

We found one systematic review (search date 1983, 9 RCTs, 13 679 people), which compared beta-blockers versus placebo started more than 24 hours after onset of symptoms of acute MI and continued for 9–24 months. [21] It found that the survival benefits of beta-blockers were similar in men and women. The highest absolute benefit from beta-blockers was found in people over 50 years of age; with a higher heart rate at study entry; with a history of MI, angina pectoris, hypertension, or treatment with digitalis; and with transient signs or symptoms of mechanical or electrical failure in the early phases of MI. [21]

In people with left ventricular dysfunction:

We found one systematic review (search date 2003, 7 RCTs, 12 727 people), which compared the effects of beta-blockers versus placebo in people with left ventricular dysfunction. [22] It found that beta-blockers reduced the risk of death from heart failure compared with placebo, and that the magnitude of benefit was similar for men and women (men: RR 0.66, 95% CI 0.59 to 0.75; women: RR 0.63, 95% CI 0.44 to 0.91). [22] The relative risk of death from heart failure was similar for people with and without diabetes, though absolute benefit is likely to be greater in people with diabetes (without diabetes: RR 0.65, 95% CI 0.57 to 0.74; with diabetes: RR 0.77, 95% CI 0.61 to 0.96; absolute risks not presented). Pooled analysis of studies examining bisoprolol, metoprolol, or carvedilol found that the magnitude of benefit was similar for black and

white people (black people: RR 0.67, 95% CI 0.38 to 1.16; white people: RR 0.63, 95% CI 0.52 to 0.77). However, pooled analysis that included the one identified RCT of bucindolol found that the magnitude of benefit was greater in white people than black people (black people: RR 0.97, 95% CI 0.68 to 1.37; white people: RR 0.69, 95% CI 0.55 to 0.85). [22]

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Harms

Beta-blockers versus placebo:

We found one systematic review (search date 2001, 15 RCTs, > 35 000 people) that examined harms of beta-blockers compared with placebo in people with previous MI, heart failure, or hypertension. [23] It found no significant difference between beta-blockers and placebo in depressive symptoms or sexual dysfunction (depressive symptoms: RR 1.12, 95% CI 0.89 to 1.41; sexual dysfunction 1.10, 95% CI 0.96 to 1.25). However, it found a small but significant increase in fatigue with beta-blockers compared with placebo (RR 1.15, 95% CI 1.05 to 1.25). [23]

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Comment

None.

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