Revascularisation versus medical treatment in patients with stable coronary artery disease: network meta-analysis.

To investigate whether revascularisation improves prognosis compared with medical treatment among patients with stable coronary artery disease. Bayesian network meta-analyses to combine direct within trial comparisons between treatments with indirect evidence from other trials while maintaining randomisation. A strategy of initial medical treatment compared with revascularisation by coronary artery bypass grafting or Food and Drug Administration approved techniques for percutaneous revascularization: balloon angioplasty, bare metal stent, early generation paclitaxel eluting stent, sirolimus eluting stent, and zotarolimus eluting (Endeavor) stent, and new generation everolimus eluting stent, and zotarolimus eluting (Resolute) stent among patients with stable coronary artery disease.
disease. Medline and Embase from 1980 to 2013 for randomised trials comparing medical treatment with revascularisation. All cause mortality. 100 trials in 93,553 patients with 262,090 patient years of follow-up were included. Coronary artery bypass grafting was associated with a survival benefit (rate ratio 0.80, 95% credibility interval 0.70 to 0.91) compared with medical treatment. New generation drug eluting stents (everolimus: 0.75, 0.59 to 0.96; zotarolimus (Resolute): 0.65, 0.42 to 1.00) but not balloon angioplasty (0.85, 0.68 to 1.04), bare metal stents (0.92, 0.79 to 1.05), or early generation drug eluting stents (paclitaxel: 0.92, 0.75 to 1.12; sirolimus: 0.91, 0.75 to 1.10; zotarolimus (Endeavor): 0.88, 0.69 to 1.10) were associated with improved survival compared with medical treatment. Coronary artery bypass grafting reduced the risk of myocardial infarction compared with medical treatment (0.79, 0.63 to 0.99), and everolimus eluting stents showed a trend towards a reduced risk of myocardial infarction (0.75, 0.55 to 1.01). The risk of subsequent revascularisation was noticeably reduced by coronary artery bypass grafting (0.16, 0.13 to 0.20) followed by new generation drug eluting stents (zotarolimus (Resolute): 0.26, 0.17 to 0.40; everolimus: 0.27, 0.21 to 0.35), early generation drug eluting stents (zotarolimus (Endeavor): 0.37, 0.28 to 0.50; sirolimus: 0.29, 0.24 to 0.36; paclitaxel: 0.44, 0.35 to 0.54); and bare metal stents (0.69, 0.59 to 0.81) compared with medical treatment. Among patients with stable coronary artery disease, coronary artery bypass grafting reduces the risk of death, myocardial infarction, and subsequent revascularisation compared with medical treatment. All stent based coronary revascularisation technologies reduce the need for revascularisation to a variable degree. Our results provide evidence for improved survival with new generation drug eluting stents but no other percutaneous revascularisation technology compared with medical treatment.

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