

intracoronary stents

see also:

- [cardiology](#)
- [coronary artery bypass graft \(CABG\)](#)

introduction

1st generation bare metal stents

- the first generation Palmaz-Schatz bare metal (BMS) coronary stents were evaluated in two major trials in 1994 (STRESS and Benestent):
 - angiographic restenosis rates at 6months were ~1/3rd less than for PTCA alone.

2nd generation bare metal stents

- pooled analysis of six major clinical trials in 2002 assessed second generation coronary stents with long term aspirin and 4 weeks ticlodipine:
 - Clinically relevant restenosis occurred in only about one-half of patients with angiographic restenosis (defined as ≥ 50 percent diameter stenosis).
 - The predictors of both clinical and angiographic restenosis were the same (smaller posttreatment lumen diameter, stent length, and diabetes).
 - at 1 year, target lesion revascularisation was performed in 12% and target vessel revascularisation in 14.1% which were higher than at 6 months demonstrating a higher than expected delayed presentation.
 - most clinically significant restenosis with second generation stents become clinically evident within the first 6-12 months.
 - after one year, recurrent ischemia is more likely to be due to new or progressive disease at another site rather than restenosis.
 - the annual hazard rate was 1.7 percent for target lesion events compared to 6.3 percent for non-target lesion events

drug-eluting stents

- multiple trials have demonstrated that the sirolimus and paclitaxel drug-eluting stents markedly reduced the incidence of in-stent restenosis and the rate of target lesion revascularization by about 75 percent.
- A 2006 meta-analysis included 19 trials with 7060 patients comparing DES to BMS:
 - No effect on all-cause mortality
 - A significant reduction in angiographic restenosis (10.5 versus 31.7 percent)
 - A significant reduction in target lesion revascularization (6.2 versus 16.6 percent)
 - A significant reduction in major adverse cardiac events (10.1 versus 19.9 percent), which was entirely due to a reduction in target lesion revascularization.
- BUT there are safety concerns, cost issues and the need for patients to received long-term dual antiplatelet therapy is an issue

- premature cessation of dual antiplatelet Rx (aspirin with clopidogrel) risks death or MI.

references and resources

- [UpToDate.com 2008](#)

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