Cardiovascular News

Meta-analysis shows similar mortality with DES and BMS

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MedWire News: A large network meta-analysis indicates that there is no difference in mortality among patients treated with bare-metal stents (BMS), paclitaxel-eluting stents (PES), or sirolimus-eluting stents (SES).

However, the study, published in *The Lancet*, suggests some clinical advantages of SES over both PES and BMS.

Researchers led by Peter Jüni (University of Bristol, UK) conducted a network meta-analysis, with mixed-treatment comparison. This allowed them to obtain long-term, prospective follow-up of a large number of patients by including all randomized controlled trials (RCTs) that compared the two available drug-eluting stents (DES) head-to-head as well as those that compared either of these with BMS.

Recent studies reporting increased rates of death, myocardial infarction (MI), or late stent thrombosis with DES versus BMS "were hampered by few patients, limited durations of follow-up, or an observational study design," they say.

The team included a total of 38 trials, involving 18,023 patients, and with a follow-up of up to 4 years, in their study.

The results showed that mortality was similar with each type of stent, at hazard ratios (HRs) for the cumulative incidence of overall mortality of 1.00 for SES versus BMS, 1.03 for PES versus BMS, and 0.96 for SES versus PES.

Corresponding HRs for the composite of death or MI were 0.92, 1.00, and 0.92. But SES were associated with a lower cumulative rate of MI than both other types of stent, at a HR of 0.81 versus BMS, and 0.83 versus PES.

There was no difference in definite stent thrombosis over the whole of follow-up between stent types. But the risk of late definite stent thrombosis (more than 30 days after revascularization) appeared to be roughly doubled with PES versus BMS and SES. The HR for late-stent thrombosis (as defined in individual trials) was 2.36 with PES versus BMS, and 0.45 for SES versus PES.

Finally, both types of DES reduced the rate of target lesion revascularization (TLR), but again this benefit was more pronounced with SES. HRs for TKL were 0.30 for SES versus BMS, 0.42 for PES versus BMS, and 0.70 for SES versus PES.

"This collaborative network meta-analysis of RCTs indicates that overall and cardiac mortality associated with DES and BMS are similar," Jüni and co-workers write. "Relevant harms associated with SES compared with BMS are unlikely, while rates of TLR and MI are lower with SES than PES and BMS.

"We conclude, therefore that SES seems to be clinically better than BMS and PES."

But in an accompanying Comment article, Mark Webster and John Ormiston (Auckland City Hospital, New Zealand) questioned how these data relate to the real-

world use of stents.

They pointed out that higher-risk patients, such as those with diabetes or renal failure, and those with more complex lesions, are under-represented or excluded from trials.

In addition, they noted concern that the cumulative stent thrombosis risk did not plateau over time, suggesting that the risk "is ongoing." Technical issues at stenting contribute to late thrombosis with DES, they wrote, such that operators need to use meticulous insertion techniques. Meanwhile premature discontinuation of dual antiplatelet therapy is also a predictor of stent thrombosis, yet the optimal duration of this treatment remains unclear.

Webster and Ormiston speculated that BMS in conjunction with oral therapy may yet provide an alternative, since problems with toxicity and other risks associated with potential oral drugs would be limited by the short duration of treatment required.

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