STENT THROMBOSIS WITH DRUG-ELUTING AND BARE-METAL STENTS: EVIDENCE FROM A COMPREHENSIVE NETWORK META-ANALYSIS.

Palmerini T, Biondi-Zoccai G, Della Riva D, Stettler C, Sangiorgi D, D'Ascenzo F, Kimura T, Briguori C, Sabatè M, Kim HS, De Waha A, Kedhi E, Smits PC, Kaiser C, Sardella G, Marullo A, Kirtane AJ, Leon MB, Stone GW[1] .

ABSTRACT

The relative safety of drug-eluting stents and bare-metal stents, especially with respect to stent thrombosis, continues to be debated. In view of the overall low frequency of stent thrombosis, large sample sizes are needed to accurately estimate treatment differences between stents. We compared the risk of thrombosis between bare-metal and drug-eluting stents. **Methods:** For this network meta-analysis, randomised controlled trials comparing different drug-eluting stents or drug-eluting with bare-metal stents currently approved in the USA were identified through Medline, Embase, Cochrane databases, and proceedings of international meetings. Information about study design, inclusion and exclusion criteria, sample characteristics, and clinical outcomes was extracted. **Findings:** 49 trials including 50,844 patients randomly assigned to treatment groups were analysed. 1-year definite stent thrombosis was significantly lower with cobalt-chromium everolimus eluting stents (CoCr-EES) than with bare-metal stents (odds ratio [OR] 0·23, 95% CI 0·13-0·41). The significant difference in stent thrombosis between CoCr-EES and bare-metal stents was evident as early as 30 days (OR 0·21, 95% CI 0·11-0·42) and was also significant between 31 days and 1 year (OR 0·27, 95% CI 0·08-0·74). CoCr-EES were also associated with significantly lower rates of 1-year definite stent thrombosis compared with paclitaxel-eluting stents (OR 0·28, 95% CI 0·16-0·48), permanent polymer-based sirolimus-eluting stents (OR 0·41, 95% CI 0·24-0·70), phosphorylcholine-based zotarolimus-eluting stents (OR 0·21, 95% CI 0·10-0·44), and Resolute zotarolimus-eluting stents (OR 0·14, 95% CI 0·03-0·47). At 2-year follow-up, CoCr-EES were still associated with significantly lower rates of definite stent thrombosis than were bare-metal (OR 0·35, 95% CI 0·17-0·69) and paclitaxel-eluting stents (OR 0·34, 95% CI 0·19-0·62). No other drug-eluting stent had lower definite thrombosis rates compared with bare-metal stents at 2-year follow-up. **Interpretation:** In randomised studies completed to date, CoCr-EES has the lowest rate of stent thrombosis within 2 years of implantation. The finding that CoCr-EES also reduced stent thrombosis compared with bare-metal stents, if confirmed in future randomised trials, represents a paradigm shift. **[Lancet. 2012 14;379(9824):1393-402].** PMID:22445239

[1] Istituto di Cardiologia, Policlinico S Orsola, Bologna, Italy.