

# Clinical Research in cardiology

## Prolonged dual antiplatelet therapy after drug-eluting stenting

Meta-analysis of randomized trials

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# Abstract

## Aims:

To investigate the benefits and the risks of a prolonged duration of dual antiplatelet therapy (DAPT) after percutaneous coronary intervention (PCI) with drug-eluting stent (DES) implantation.

## Methods and results:

Electronic scientific databases were searched for randomized trials investigating the clinical impact of prolonged versus control DAPT duration in patients receiving a PCI with DES implantation. Primary outcomes were the incidence of stent thrombosis (ST), major bleeding and death. Secondary outcomes were the incidence of cardiac death, myocardial infarction (MI) and cerebrovascular event (CVE). The main analysis evaluated the primary outcomes by including events that occurred whereas therapies in the treatment groups actually differed. Events occurred at the longest follow-up available for each included trial contributed to risk estimates in a separate analysis. Odds ratio (95 % confidence interval) served as summary statistic. Ten trials totaling 32,194 participants were included in the meta-analysis. Median DAPT duration was 15 (12-24) versus 6 (6-12) months for the prolonged and control DAPT groups, respectively. After a median follow-up of 19.5

months, a prolonged versus control DAPT reduces the risk of ST [0.50 (0.29-0.85), P = 0.01] and MI [0.55 (0.45-0.67), P < 0.001], at the expense of higher risk of major bleeding [1.67 (1.31-2.13), P < 0.001] and death [1.25 (1.02-1.53), P = 0.03]. A prolonged versus control DAPT does not influence the risk of cardiac death [1.08 (0.82-1.44), P = 0.74] or CVE [0.84 (0.57-1.24), P = 0.39].

## Conclusions:

Prolonging the duration of dual antiplatelet therapy in patients undergoing PCI with DES implantation reduces the risk of stent thrombosis and myocardial infarction, but does result in an increased risk of major bleeding and death.

## **Keywords:**

**Bleeding; Death; Drug-eluting stent; Dual antiplatelet therapy**

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