

Stent thrombosis after drug-eluting stent implantation – relation to Clopidogrel discontinuation

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Stent thrombosis is probably the most important issue after stent implantation, especially if the stent is a drug eluting stent. The current article refers to a two centers prospective, observational study which included more than 6800 angioplasties with DES implantation. The patients were followed – up for four years. The dual antiplatelet therapy associated with stent implantation has reduced the incidence of thrombosis for both BMS and DES. While it is well established the need of loading dose of Clopidogrel prior to stent implantation and maintenance dose after the acute event, there is no definite time for stopping the Clopidogrel.

Definite stent thrombosis was noted in 73 patients out of 6816 angioplasties, incidence of 1.2%. Incidence of stent thrombosis was evaluated at 30 days (0.5%) and at 1 year (0.8%). At 4 years follow-up 2.8% of patients had probable (0.3%) or possible (2.5%) stent thrombosis. The results were similar to those already reported in literature, a constant rate of late stent thrombosis of 0.6% per year for up to 4 years being reported. The median therapy duration with Clopidogrel was 360 days. There was a significant change in risk for stent thrombosis

after 6 months of treatment. The highest risk was noted in the first 29 days though with a rapid decrement. In the first six months the risk had a rapid risk decrement (hazard risk reduction 0.95, 95% CI 0.91-0.99). A nearly constant risk was noted after 6 months of treatment with Clopidogrel (hazard risk reduction 1.0, 95% CI 0.99-1.01). A significant difference in the risk of stent thrombosis before and after 6 months ($p < 0.001$) was noted using a multivariate regression model.

The median time interval from discontinuation of Clopidogrel to stent thrombosis was 9 days (5.5 – 22.5 days) within the first 6 months and 104.3 days (7.4 – 294.8 days) after 6 months.

The present study suggests there is no substantial benefit of a prolonged Clopidogrel therapy beyond 6 months after DES implantation. Registry data shows continuous risk of stent thrombosis despite dual antiplatelet therapy with similar risk for stent thrombosis for those patients with either 6 or 12 months of Clopidogrel treatment. Still optimal duration of dual antiplatelet therapy is not a standard matter, but rather an individual medical decision. Further randomized studies are needed to address this issue.

Comment on a paper:

Schulz S., Schuster T., Kastrati A., et al. – Stent thrombosis after drug-eluting stent implantation: incidence, timing, and relation to discontinuation of Clopidogrel therapy over 4-year period. *Eur Heart J* 2009; 30:2714-2721