

Longitudinal Outcomes Following Drug Eluting Stent Implantation

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FDA Advisory Committee Meeting

December 8, 2006

Overview

- Pattern of DES use
- Rate and Timing of Adverse Events (MI and death) in all DES Patients
 - Chart review of AMI events in Colorado
- Predictors of Adverse Outcomes
- Relationship between post-DES clopidogrel use and adverse outcomes

Longitudinal Kaiser Cohort

- PCI: > 95% received stents
 - >95% were DES
- 4195 patients with ≥ 1 DES
 - 2004: 1698 patients
 - 2005: 1697 patients
 - 2006: 800 patients
- Outcomes through Oct. 31, 2006
 - Myocardial infarction
 - All-cause mortality

Data Sources

- ACC-NCDR Cath-PCI Registry
- Pharmacy Dispensing Records
- Hospital Claims – primary discharge diagnosis of AMI (ICD-9 410.XX)
- Kaiser & State Death Registry Files

Patient Characteristics

Age (mean) 64.9 years

Women 30.1%

Race/Ethnicity

White 75.0%

Black 5.2%

Asian 10.8%

Hispanic 6.3%

Medical History

	Percent
Diabetes	30.2
Smoking	53.1
Hypertension	78.1
Hyperlipidemia	86.6

Medical History

	Percent
Prior MI	28.9
Prior PCI	29.2
Prior CABG	17.7
Prior CHF	10.8

Clinical Setting

	Percent
Non-ACS	28.2
ACS	71.8
USA (29.8%)	
NSTEMI (29.2%)	
STEMI (12.8%)	

Lesion Characteristics

Percent

Lesion Risk

High Risk(C) 36.6

Low(A)/Medium(B) 63.4

Previous Treated Lesion 9.9

Graft PCI 7.0

Bifurcation 9.9

Lesion Length > 30mm 17.6

Stent Characteristics

Stents Implanted	Percent
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1	57.8
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2	33.5
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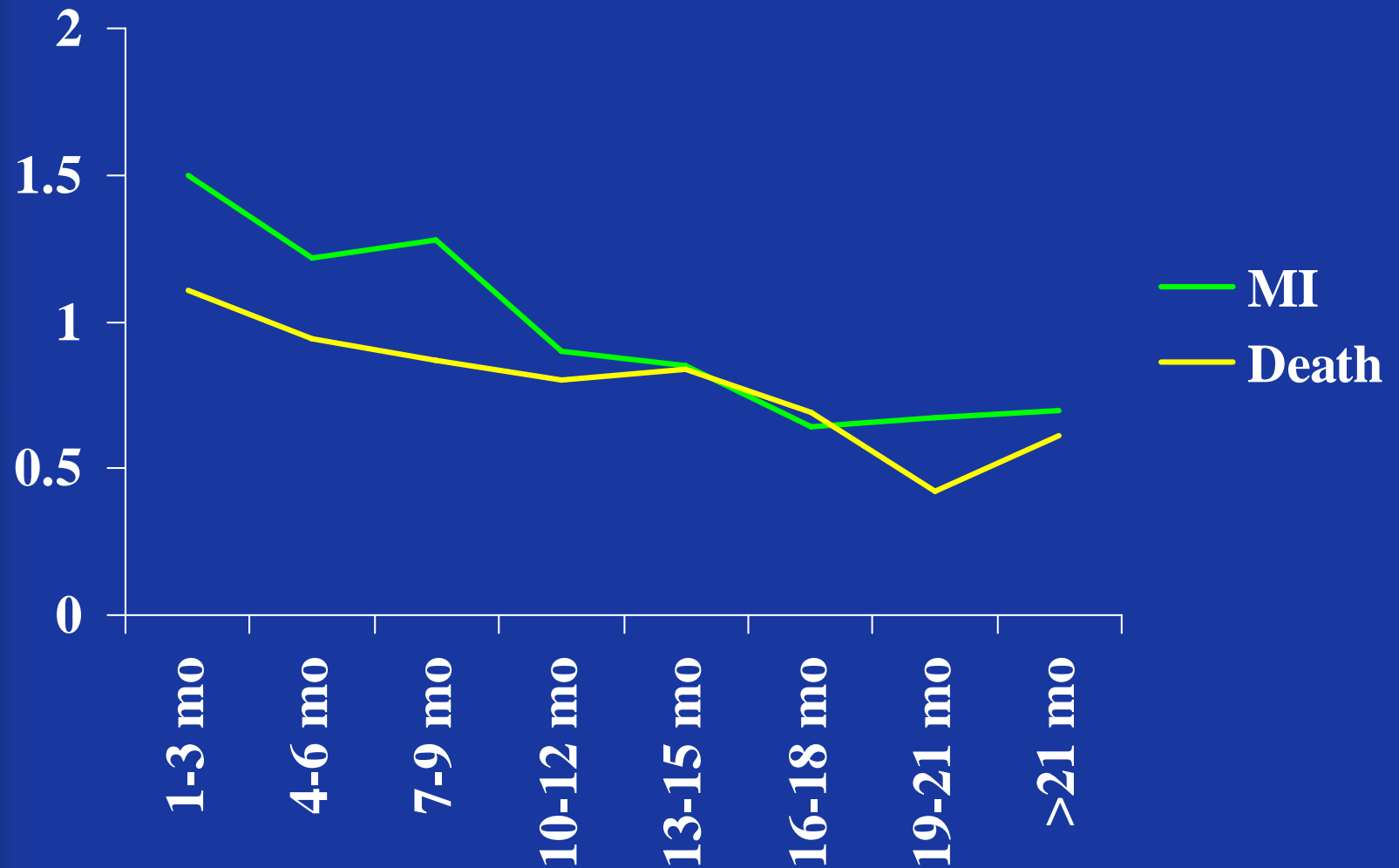
≥ 3	8.7
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Stent Type	
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Cypher	65.8
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Taxus	34.2
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Timing of Events After DES Implantation



Predictors of MI Post-DES Placement (2004-2006)

Hazard Ratio

Diabetes	3.2
Graft PCI	2.6
Les. Length > 30mm	1.9
CHF	1.8
Lesion Risk	1.4

Predictors of Death Post-stent Placement

	Hazard Ratio
CHF	3.8
Bifurcation	1.8
Age (decades)	1.7
Diabetes	1.6
ACS	1.4
Current smoker	1.3

Relationship Between Extended Clopidogrel Use and Subsequent AMI

	RR	CI
1-3 mo	0.49	0.37-0.65
4-6 mo	0.73	0.51-1.05
7-9 mo	0.87	0.55-1.38
10-12 mo	0.99	0.57-1.71

Extended : > 3months post Cypher
and > 6 months post Taxus

Relationship Between Extended Clopidogrel Use and Subsequent Death

	RR	CI
1-3 mo	0.35	0.24-0.51
4-6 mo	0.56	0.35-0.90
7-9 mo	0.69	0.39-1.24
10-12 mo	0.85	0.43-1.70

Extended : > 3months post Cypher
and > 6 months post Taxus

Colorado AMI Review (n = 24)

- 15/24 (62%) Probable/Definite Stent Thrombosis*
- 12 of the 15 (80%) cases of Stent Thrombosis occurred in the first year after stent implantation
- 7 of the 12 cases in the first year occurred in months 6-12 after DES

* Study Endpoints - ARC Clinical Trials Consortium

Limitations

- Limited long-term follow-up
- Difficult to draw definitive conclusions of the efficacy of DES in subgroups
- Potential protective effects of clopidogrel may be due to confounding factors

Summary

- A high proportion of DES are implanted in the setting of ACS.
- DES implanted in lesions outside current FDA indications are associated with an increased risk of adverse events.
- Clopidogrel may be associated with a reduction in adverse outcomes in the 1-6 months past current recommended therapy with no significant protective effect thereafter.

Thank You