$=24h)$

Myocardial revascularization for coronary artery disease in diabetic patients

A systematic review and meta-analysis of randomized clinical trials

2017 - 7 - 1

This report should be referenced as follows:
TrialResults-center.org; Results of all major randomized clinical trials about Myocardial revascularization for coronary artery disease in diabetic patients .

Contents

0.1 Synthesis of the meta-analysis results

In all 22 randomised controlled trials (RCTs) were included. These included 1 studie of **CABG or PCI** involving 2,368 patients, 18 studies of **drug-eluting stents** (4 unpublished) involving 3,866 patients and 3 studies of **PCI** involving 2,392 patients. Results obtained by the meta-analysis are reported in the following tables, with the endpoints categorized according their results. Three classes are considered: endpoints for wich a benefit effect was detected, endpoints revealing a harmful effect and the other for wich no statistically significant difference was obtained (no evidence).

0.1.1 CABG or PCI

Only one trials including 2368 patients was found.
Among these comparisons, one trial are about CABG or PCI.
No trial was excluded on grounds of potentially flawed methodology or incomplete presentation of results. No ongoing trial was found.
Results obtained with CABG or PCI for all the endpoints with data in at least one trial are summarized table 1.

Table 1: *Results summary - CABG or PCI*

Benefit	Harmful	No evidence
	CABG or PCI versus medical treatment	
		→ 5-year death RR=0.98^{NS} [0.79;1.20] k=1

* $p < 0.05$; † $p < 0.01$; ¶ $p < 0.001$ RR: relative risk

H: heterogeneity with fixed effect model detected (heterogeneity test $p < 0.05$)

0.1.2 Drug-eluting stents

Reports of 16 trials (including 3,866 patients) were identified (including 4 unpublished).
Among these comparisons, one trial are about CoStar stent,one about everolimus eluting stent,5 about paclitaxel eluting stent and 11 about sirolimus eluting stent.
During the selection 2 trials were excluded because of potentially flawed methodology or incomplete presentation of results. A total of 3 ongoing trials were identified.

CoStar stent

Results obtained with coStar stent for all the endpoints with data in at least one trial are summarized table 2.

Table 2: *Results summary - CoStar stent*

Benefit	Harmful	No evidence
	CoStar stent versus paclitaxel eluting stent	
		→ MACE RR=1.32^{NS} [0.80;2.18] k=1 → target lesion revascularisation RR=1.70^{NS} [0.89;3.26] k=1

continued...

Benefit	Harmful	No evidence

* p <0.05; † p <0.01; ¶ p <0.001 RR: relative risk

H: heterogeneity with fixed effect model detected (heterogeneity test p <0.05)

Everolimus eluting stent

Results obtained with everolimus eluting stent for all the endpoints with data in at least one trial are summarized table 3.

Table 3: *Results summary - Everolimus eluting stent*

Benefit	Harmful	No evidence
Everolimus eluting stent versus sirolimus ES		

* p <0.05; † p <0.01; ¶ p <0.001 RR: relative risk

H: heterogeneity with fixed effect model detected (heterogeneity test p <0.05)

Paclitaxel eluting stent

Results obtained with paclitaxel eluting stent for all the endpoints with data in at least one trial are summarized table 4.

Table 4: *Results summary - Paclitaxel eluting stent*

Benefit	Harmful	No evidence
Paclitaxel eluting stent versus bare-metal stent		
↓ target lesion revascularisation RR=0.40¶ [0.27;0.60] k=4 ↓ angiographic restenosis RR=0.17¶ [0.08;0.37] k=3		
Paclitaxel eluting stent versus sirolimus eluting stent		

* p <0.05; † p <0.01; ¶ p <0.001 RR: relative risk

H: heterogeneity with fixed effect model detected (heterogeneity test p <0.05)

Sirolimus eluting stent

Results obtained with sirolimus eluting stent for all the endpoints with data in at least one trial are summarized table 5.

Table 5: *Results summary - Sirolimus eluting stent*

Benefit	Harmful	No evidence
Sirolimus eluting stent versus bare-metal stent		
↓ MACE RR=0.40¶ [0.23;0.69] k=2 ↓ 2 yr MACE RR=0.31¶ [0.16;0.59] k=1 ↓ 2 yr TLR RR=0.22¶ [0.10;0.50] k=1 ↓ target lesion revascularisation RR=0.25¶ [0.11;0.54] k=4 ↓ angiographic restenosis RR=0.16¶ [0.08;0.31] k=3		→ myocardial infarction (fatal and non fatal) RR=0.78^{NS} [0.15;3.97] k=1 → stent thrombosis (any, end of follow up) RR=0.70^{NS} [0.09;5.27] k=2 → sub acute stent thrombosis (1-30 days) RR=0.51^{NS} [0.02;15.07] k=1 → late stent thrombosis (31days - 1year) RR=0.51^{NS} [0.02;15.07] k=1 → all cause death RR=0.30^{NS} [0.03;2.87] k=2
Sirolimus eluting stent versus paclitaxel eluting stent		
↓ in-lesion binary restenosis RR=0.21¶ [0.09;0.51] k=1 ↓ angiographic restenosis RR=0.22¶ [0.10;0.48] k=1		→ myocardial infarction (fatal and non fatal) RR=1.50^{NS} [0.43;5.27] k=2 → cardiac death RR=0.50^{NS} [0.02;14.82] k=1 → MACE RR=0.56^{NS} [0.09;3.50] k=2 → target-vessel revascularization RR=0.44^{NS} [0.18;1.04] k=1 → target lesion revascularisation RR=0.61^{NS} [0.31;1.20] k=5 → CABG RR=1.00^{NS} [0.14;7.03] k=1 → stent thrombosis (any, end of follow up) RR=0.64^{NS} [0.07;6.30] k=2 → 4y stent thrombosis (ARC) RR=0.25^{NS} [0.01;5.49] k=1 → acute stent thrombosis (<=24h) RR=2.00^{NS} [0.07;59.28] k=1 → sub acute stent thrombosis (1-30 days) RR=1.00^{NS} [0.02;50.15] k=1 → late stent thrombosis (31days - 1year) RR=0.45^{NS} [0.13;1.54] k=4 → all cause death RR=0.64^{NS} [0.20;2.07] k=2

* $p < 0.05$; † $p < 0.01$; ¶ $p < 0.001$ RR: relative risk

H: heterogeneity with fixed effect model detected (heterogeneity test $p < 0.05$)

0.1.3 PCI

Reports of 3 trials (including 2,410 patients) were identified .

Among these comparisons, two trials are about PCI with drug-eluting stents and one about stent.

No trial was excluded on grounds of potentially flawed methodology or incomplete presentation of results. One ongoing trial was identified.

PCI with drug-eluting stents

Results obtained with PCI with drug-eluting stents for all the endpoints with data in at least one trial are summarized table 6.

Table 6: *Results summary - PCI with drug-eluting stents*

Benefit	Harmful	No evidence
	PCI with drug-eluting stents versus CABG	
	↑ long term cardiovascular events RR=1.39¶ [1.14;1.68] k=1 ↑ long term death RR=1.36* [1.05;1.77] k=1	→ 2 yr MACE RR=1.11^{NS} [0.87;1.42] k=1

* $p < 0.05$; † $p < 0.01$; ¶ $p < 0.001$ RR: relative risk

H: heterogeneity with fixed effect model detected (heterogeneity test $p < 0.05$)

Stent

Results obtained with stent for all the endpoints with data in at least one trial are summarized table 7.

Table 7: *Results summary - Stent*

Benefit	Harmful	No evidence
	Stent versus CABG	
	↑ 1 year revascularization RR=5.31¶ [1.99;14.16] k=1	→ 1 year event RR=1.25^{NS} [0.75;2.09] k=1

* $p < 0.05$; † $p < 0.01$; ¶ $p < 0.001$ RR: relative risk

H: heterogeneity with fixed effect model detected (heterogeneity test $p < 0.05$)

1 Introduction

1.1 Aim of the report

This report review all the randomized clinical trials of myocardial revascularization for the treatment of coronary artery disease in diabetic patients . The following classes of treatment are considered:

1. CABG or PCI
2. drug-eluting stents
3. PCI

1.2 Search strategy

The search aimed to identify all randomized clinical trials relating to the clinical effectiveness of myocardial revascularization for the treatment of coronary artery disease in diabetic patients .

1.2.1 Sources searched

The following electronic databases were searched for relevant published literature for the period up to 2017 - 7 - 1:

- MEDLINE,
- EMBASE,
- Cochrane Database of Systematic Reviews (CDSR),
- Cochrane Central Register of Controlled Trials (CCTR),
- Health Technology Assessment (HTA) database,
- ISI Web of Science Proceedings (Index to Scientific and Technical Proceedings),
- ISI Web of Science Science Citation Index Expanded,

Each database was searched as far back as possible, with no language restrictions.
Search strategies of relevant clinical keywords were developed through reference to published strategies, and by iterative searching, whereby keywords identified in references retrieved by initial scoping searches were used to extend the search strategy and so increase the sensitivity of retrieval.
In addition, the reference lists of relevant articles were handsearched.
Attempts to identify further studies were made by consulting health technology assessment and guideline producing agencies, and research and trials registers via the Internet.
Titles and, when available, abstracts of all studies identified in the searches were assessed by a single researcher for relevance to the review. In cases of doubt, the full article was obtained.

1.2.2 Search restrictions

No language, study/publication or date restrictions were applied to the main searches.

1.3 Inclusion criteria

Participants only those studies were included in which the participants had been diagnosed as having established coronary artery disease.

Interventions studies in which myocardial revascularization was used.
Studies using other interventions in addition to myocardial revascularization therapy were included only if the treatment received by the intervention and control groups was identical in all respects other than the use of myocardial revascularization.

Methodology randomised controlled trials (RCTs). Trials were accepted as RCTs if the allocation of subjects to treatment groups was described by the authors as either randomised or double-blind.

1.4 Exclusion criteria

Studies considered methodologically unsound. The list of excluded studies with reason of their exclusion are given in a separate section for each treatment categories considered.

1.5 Meta-analysis strategy

Studies that met the reviews entry criteria were eligible for inclusion in the meta-analyses provided that they reported outcomes in terms of the number of subjects suffering clinical outcomes, as only this would allow calculation of the relative risk of subjects in the intervention group developing each outcome, compared with subjects in the control group.
Studies that only presented results in the form of relative risks, relative hazards or odds ratios, without the underlying numbers were also include in the meta-analyses.
Binary outcomes were analysed using the fixed-effect model. For continuous outcomes, weighted mean differences (WMDs) were analysed, using a fixed-effect model.
Heterogeneity was tested by the chi-2 test and the I2 statistic was obtained to describe the proportion of the variability.
Where quantitative heterogeneity was indicated, analysis using a random-effects model was conducted for comparison with results of fixed effect-based analysis. Results of the meta-analysis should be considered as being based on fixed-effect model unless stated otherwise.
Meta-analyses were conducted for data on 5-year death, .

1.6 Structure of the report

Each of the eligible studies is summarised in part **??**. A summary of the studies together with an evaluation of their quality is given in part I to **??**, listed by therapeutic class. The therapeutic classes included CABG or PCI, drug-eluting stents, PCI,
In these sections, studies in which an active intervention was compared with placebo or no treatment are discussed first, by intervention, followed by a discussion of those studies in which two or more active interventions were compared.

Part I

CABG or PCI

2 Overview of CABG or PCI

2.1 Included trials

Only one trial which randomized 2368 patients was identified. In all, 1 randomized comparison concerned CABG or PCI.
The detailed descriptions of trials and meta-analysis results is given in section 3 (page 18) for CABG or PCI.

This trial included 2368 patients and was published in 2009.
This trial was open-label in design.
It was reported in English language.
The table 2.1 (page 16) summmarizes the main characteristics of all the included trials. More detailed description is given in the following section.

2.2 Summary of meta-analysis results

The meta-analysis of the available trials about CABG or PCI provide the results listed in tables 2.2 to 2.2 (page 17) and in the following graphs.

2.2.1 CABG or PCI

No significant difference was found between **CABG or PCI** and **medical treatment** in terms of 5-year death (RR=0.98, 95% CI 0.79 to 1.20, p=0.8153, 1 trial).

Table 2.1: *Main study characteristics - CABG or PCI*

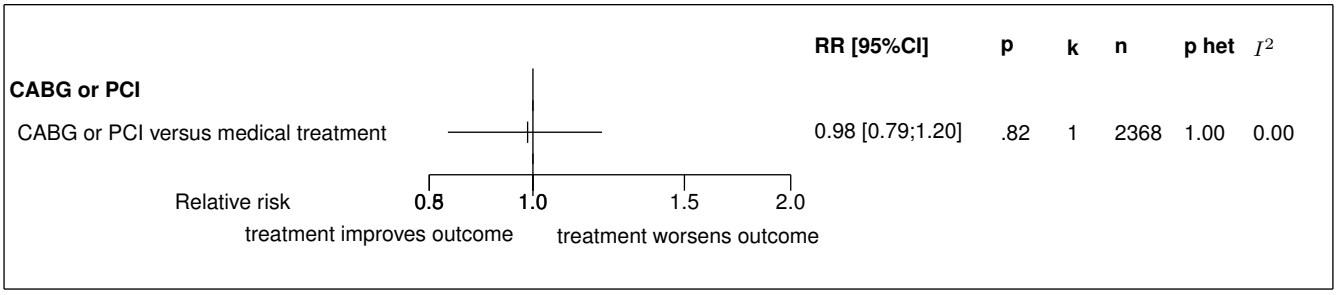
Trial	Patients	Treatments	Trial design and method
CABG or PCI			
CABG or PCI versus medical treatment			
BARI 2D, 2009 [1, 2, 3, 4] n = 1176 vs. 1192	patients with type 2 diabetes and heart disease	prompt revascularization with intensive medical therapy **versus** intensivemedical therapy alone	open parallel groups Primary endpoint: death 49 centres, US, Canada, Brazil, Mexico, Czech Republic, Austria

Table 2.2: *Summary of all results for CABG or PCI*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n
CABG or PCI versus medical treatment						
5-year death	RR=0.98	0.79;1.20	0.8153	1.0000 (0.00)	1	2368

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients

Figure 2.1: *Forest's plot for 5-year death*



Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ʳ: random effect model used

3 Details

3.1 Available trials

Only one trial which randomized 2368 patients was identified: it compared CABG or PCI with medical treatment.
This trial included 2368 patients and was published in 2009.
This trial was open-label in design.
It was reported in English language.
5-year death data was reported in 1 trials;
Following tables 3.1 (page 18), 3.2 (page 18), 3.4 (page 20), and 3.3 (page 18) summarized the main characteristics of the trial including in this systematic review of randomized trials of CABG or PCI.

Table 3.1: *Treatment description - CABG or PCI - CABG or PCI*

Trial	Studied treatment	Control treatment
CABG or PCI versus medical treatment		
BARI 2D (2009) [1, 2, 3, 4] [a]	prompt revascularization with intensive medical therapy	intensivemedical therapy alone
	Concomittant treatment: with either insulin-sensitization or insulin-provisiontherapy (factorial design)	

a) factorial design with 2nd comparison: insulin-sensitization or insulin-provisiontherapy

Table 3.2: *Descriptions of participants - CABG or PCI - CABG or PCI*

Trial	Patients
CABG or PCI versus medical treatment	
BARI 2D (2009) [1, 2, 3, 4]	Patients with type 2 diabetes and heart disease

Table 3.3: *Design and methodological quality of trials - CABG or PCI - CABG or PCI*

Trial	Design	Duration	Centre	Primary end-point
CABG or PCI versus medical treatment				
BARI 2D, 2009 [1, 2, 3, 4] n=2368	Parallel groups open confirmatory trial at risk of bias	5.3 y inclusion period: jan 2001 - mar 2005	US, Canada, Brazil, Mexico, Czech Republic, Austria 49 centres	death

continued...

Trial	Design	Duration	Centre	Primary endpoint

Table 3.4: *Trial characteristics - CABG or PCI - CABG or PCI*

Trial
CABG or PCI versus medical treatment
BARI 2D, 2009 [1, 2, 3, 4]

3.2 Meta-analysis results

The results are detailed in table 3.5 (page 21). This table is followed by the Forest's plot corresponding to each endpoint.

CABG or PCI versus medical treatment

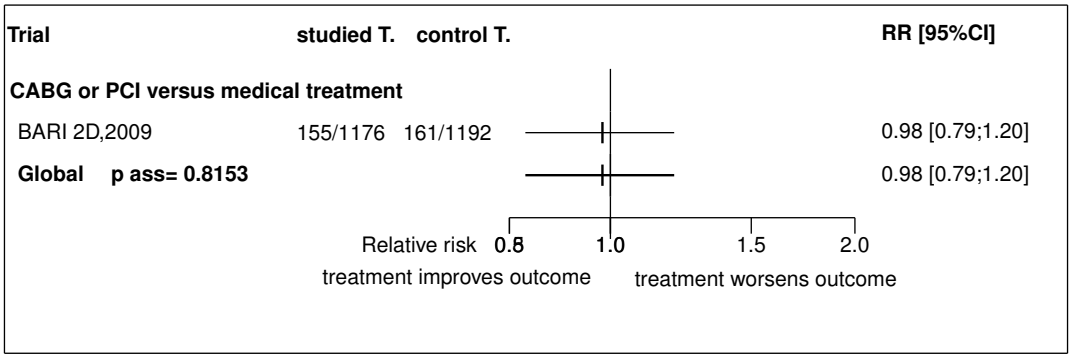
The single study eligible for this comparison provided data on **5-year death**. No statistically significant difference between the groups was found in 5-year death, with a RR of 0.98 (95% CI 0.79 to 1.20, p=0.8153).

Table 3.5: *Results details - CABG or PCI - CABG or PCI*

Comparison Endpoint	Effect	95% CI	p ass	p het	k	n
CABG or PCI versus medical treatment						
5-year death	RR=0.98	[0.79;1.20]	0.8153	1.0000 (I^2=0.00)	1	2368

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

Figure 3.1: *Forest's plot for 5-year death*



References

[1] . Baseline characteristics of patients with diabetes and coronary artery disease enrolled in the Bypass Angioplasty Revascularization Investigation 2 Diabetes (BARI 2D) trial. Am Heart J 2008;156:528-536, 536.e1-5. [PMID=18760137]

[2] . A Randomized Trial of Therapies for Type 2 Diabetes and Coronary Artery Disease. N Engl J Med 2009;:. [PMID=19502645]

[3] Chaitman BR, Hardison RM, Adler D, Gebhart S, Grogan M, Ocampo S, Sopko G, Ramires JA, Schneider D, Frye RL. The Bypass Angioplasty Revascularization Investigation 2 Diabetes Randomized Trial of Different

Treatment Strategies in Type 2 Diabetes Mellitus With Stable Ischemic Heart Disease. Impact of Treatment Strategy on Cardiac Mortality and Myocardial Infarction. Circulation 2009;:. [PMID=19920001]

[4] Dagenais GR, Lu J, Faxon DP, Kent K, Lago RM, Lezama C, Hueb W, Weiss M, Slater J, Frye RL. Effects of Optimal Medical Treatment With or Without Coronary Revascularization on Angina and Subsequent Revascularizations in Patients With Type 2 Diabetes Mellitus and Stable Ischemic Heart Disease. Circulation 2011;123:1492-1500. [PMID=21444887]

3.3 Individual trial summaries

Table 3.6: *BARI 2D, 2009 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=2368 (1176 vs. 1192) **Follow-up duration:** 5.3 y **Study design:** Randomized controlled trial Parallel groups Open Confirmatory trial at risk of bias US, Canada, Brazil, Mexico, Czech Republic, Austria, 49 centres **Inclusion period:** jan 2001 - mar 2005	Patients with type 2 diabetes and heart disease	**Studied treatment:** prompt revascularization with intensive medical therapy **Control treatment:** intensivemedical therapy alone **Concomittant treat.:**with either insulin-sensitization or insulin-provisiontherapy (factorial design) **note:** factorial design with 2nd comparison: insulin-sensitization or insulin-provisiontherapy	5-year death RR=0.98 [0.79;1.20] (end of trial)

References

. Baseline characteristics of patients with diabetes and coronary artery disease enrolled in the Bypass Angioplasty Revascularization Investigation 2 Diabetes (BARI 2D) trial. Am Heart J 2008;156:528-536, 536.e1-5 [PMID=18760137]

. A Randomized Trial of Therapies for Type 2 Diabetes and Coronary Artery Disease. N Engl J Med 2009;: [PMID=19502645]

Chaitman BR, Hardison RM, Adler D, Gebhart S, Grogan M, Ocampo S, Sopko G, Ramires JA, Schneider D, Frye RL. The Bypass Angioplasty Revascularization Investigation 2 Diabetes Randomized Trial of Different Treatment Strategies in Type 2 Diabetes Mellitus With Stable Ischemic Heart Disease. Impact of Treatment Strategy on Cardiac Mortality and Myocardial Infarction. Circulation 2009;: [PMID=19920001]

Dagenais GR, Lu J, Faxon DP, Kent K, Lago RM, Lezama C, Hueb W, Weiss M, Slater J, Frye RL. Effects of Optimal Medical Treatment With or Without Coronary Revascularization on Angina and Subsequent Revascularizations in Patients With Type 2 Diabetes Mellitus and Stable Ischemic Heart Disease. Circulation 2011;123:1492-1500 [PMID=21444887]

4 Global meta-analysis: all CABG or PCI

4.1 Global meta-analysis: all CABG or PCI versus medical treatment

Table 4.1: *All CABG or PCIversus medical treatment*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n
5-year death	RR=0.98	0.79;1.20	0.8153	1.0000 (0.00)	1	2368

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

5 Ongoing studies of CABG or PCI

No ongoing trial was identified.

6 Excluded studies for CABG or PCI

No trial was excluded.

References

Part II

Drug-eluting stents

7 Overview of drug-eluting stents

7.1 Included trials

A total of 18 randomized comparisons which enrolled 3866 patients were identified. In all, 1 randomized comparison concerned CoStar stent , one everolimus eluting stent , 5 paclitaxel eluting stent and 11 sirolimus eluting stent.
The detailed descriptions of trials and meta-analysis results is given in section 8 (page 44) for CoStar stent, in section 9 (page 53) for everolimus eluting stent, in section 10 (page 61) for paclitaxel eluting stent and in section 11 (page 75) for sirolimus eluting stent.

The average study size was 214 patients (range 44 to 542). The first study was published in 2003, and the last study was published in 3000.
A total of 5 trials were double blind and 9 were open-label in design. All included studies were reported in English language. We found 4 unpublished trials.
The table 7.1 (page 31) summmarizes the main characteristics of all the included trials. More detailed description is given in the following section.

7.2 Summary of meta-analysis results

The meta-analysis of the available trials about drug-eluting stents provide the results listed in tables 7.2 to 7.5 (page 34) and in the following graphs.

7.2.1 CoStar stent

No significant difference was found between **CoStar stent** and **paclitaxel eluting stent** in terms of MACE (RR=1.32, 95% CI 0.80 to 2.18, p=0.2746, 1 trial)and target lesion revascularisation (RR=1.70, 95% CI 0.89 to 3.26, p=0.1083, 1 trial).

7.2.2 Everolimus eluting stent

Data were insufficient to compare **everolimus eluting stent** to **sirolimus ES**. There was an eligible trial but it did not provided sufficient information about the endpoints considered by this meta-analysis.

7.2.3 Paclitaxel eluting stent

Paclitaxel eluting stent was superior to **bare-metal stent** in terms of target lesion revascularisation (RR=0.40, 95% CI 0.27 to 0.60, p=0.0000, 4 trials)and angiographic restenosis (RR=0.17, 95% CI 0.08 to 0.37, p=0.0000, 3 trials).

Data were insufficient to compare **paclitaxel eluting stent** to **sirolimus eluting stent**. There was an eligible trial but it did not provided sufficient information about the endpoints considered by this meta-analysis.

7.2.4 Sirolimus eluting stent

Sirolimus eluting stent was superior to **bare-metal stent** in terms of MACE (RR=0.40, 95% CI 0.23 to 0.69, p=0.0000, 2 trials), 2 yr MACE (RR=0.31, 95% CI 0.16 to 0.59, p=0.0000, 1 trial), 2 yr TLR (RR=0.22, 95% CI 0.10 to 0.50, p=0.0000, 1 trial), target lesion revascularisation (RR=0.25, 95% CI 0.11 to 0.54, p=0.0000, 4 trials)and angiographic restenosis (RR=0.16, 95% CI 0.08 to 0.31, p=0.0000, 3 trials). However, no significant difference was found on myocardial infarction (fatal and non fatal) (RR=0.78, 95% CI 0.15 to 3.97, p=0.7605, 1 trial)and all cause death (RR=0.30, 95% CI 0.03 to 2.87, p=0.2945, 2 trials).

Sirolimus eluting stent was superior to **paclitaxel eluting stent** in terms of in-lesion binary restenosis (RR=0.21, 95% CI 0.09 to 0.51, p=0.0000, 1 trial)and angiographic restenosis (RR=0.22, 95% CI 0.10 to 0.48, p=0.0000, 1 trial). However, no significant difference was found on myocardial infarction (fatal and non fatal) (RR=1.50, 95% CI 0.43 to 5.27, p=0.5269, 2 trials), cardiac death (RR=0.50, 95% CI 0.02 to 14.82, p=0.6885, 1 trial), MACE (RR=0.56, 95% CI 0.09 to 3.50, p=0.5384, 2 trials), target-vessel revascularization (RR=0.44, 95% CI 0.18 to 1.04, p=0.0614, 1 trial), target lesion revascularisation (RR=0.61, 95% CI 0.31 to 1.20, p=0.1518, 5 trials), CABG (RR=1.00, 95% CI 0.14 to 7.03, p=1.0000, 1 trial)and all cause death (RR=0.64, 95% CI 0.20 to 2.07, p=0.4597, 2 trials).

Table 7.1: *Main study characteristics - drug-eluting stents*

Trial	Patients	Treatments	Trial design and method
CoStar stent			
CoStar stent versus paclitaxel eluting stent			
COSTAR II diabetic (sub group), 2008 [1] n = 271 vs. 271	patients with de novo single- or multivessel coronary disease	coStar stent (PES) **versus** taxus stent (PES)	open parallel groups Primary endpoint: MACE
Everolimus eluting stent			
Everolimus eluting stent versus sirolimus ES			
ESSENCE diabetes, [1] n = 149 vs. 151	diabetic patients with angina or documented ischemia	everolimus-eluting stent **versus** sirolimus-eluting stent	open parallel groups Primary endpoint: maximal regional late loss at 8-month 15 centres, South Korea
Paclitaxel eluting stent			
Paclitaxel eluting stent versus bare-metal stent			
TAXUS II (diabetics), 2003 [1] n = 37 vs. 41	diabetic patients with stable or unstable AP, silent ischaemia; single de novo target lesion with estimatedstenosis >50% and <99%,	TAXUS **versus** NIR stent	double-blind parallel groups Primary endpoint: neointimal proliferation 38 centres, Europe
TAXUS IV (diabetics), 2005 [2] n = 155 vs. 163	diabetic patients with stable or unstable AP, provokable ischaemia with a single, previously untreated coronary-artery stenosis (vessel diameter, 2.5 to 3.75 mm; lesion length, 10 to 28 mm)	TAXUS **versus** EXPRESS	double-blind parallel groups Primary endpoint: TVR 73 centres, United States

continued...

Trial	Patients	Treatments	Trial design and method
TAXUS V (diabetics), 2005 [3] n = 178 vs. 171	diabetic patients with stable or unstable AP, silent ischaemia with complex or previously unstudied lesions (requiring 2.25-mm, 4.0-mm, and/or multiple stents)	TAXUS **versus** BMS	double-blind parallel groups Primary endpoint: TVR 66 centres, United States
TAXUS VI (diabetics), 2005 [4] n = 39 vs. 50	diabetic patients with stable or unstable AP, silent ischaemia with long, complex coronary artery lesions	TAXUS **versus** express2 stent	double-blind parallel groups Primary endpoint: TVR 44 centres, Europe
Paclitaxel eluting stent versus sirolimus eluting stent			
ISAR-test (diabetics), 2006 [5] n = 73 vs. 58	diabetics patientswith de novo lesions in native coronary vessels, excluding the left main trunk	taxus **versus** rapamycin stent	open parallel groups germany
Sirolimus eluting stent			
Sirolimus eluting stent versus bare-metal stent			
DECODE, 2005 [1] n = 54 vs. 29	stable or unstable angina in diabetic patients with with up to 2 de novo lesions in up to 2 native coronary vessels	CYPHER (Up to 3 stents per patient were allowed) **versus** bx VELOCITY (Up to 3 stents per patient were allowed)	open parallel groups Primary endpoint: late lumen loss NA, US, Asia/Pacific
DIABETES, 2005 [2, 3, 4] n = 80 vs. 80	de novo lesions in native coronary arteriesin 1, 2, or 3 native vessels with symptoms or objective evidence of ischemia; vessel size smaller than 4.0 mm	cypher **versus** bx Velocity/Sonic	open parallel groups Primary endpoint: late lumen loss 4 centres, Spanish
Ravel (diabetics), 2004 [5] n = 19 vs. 25	sub groups of diabetic patients with de novo native coronary arterylesions 2.5 to 3.5 mm in diameter by visualassessment that could be covered by an 18-mm stent	coated Bx velocity **versus** bx VELOCITY	NA parallel groups Europe

continued...

Trial	Patients	Treatments	Trial design and method
SES-SMARt (diabetics), 2005 [6] n = 29 vs. 45	diabetic patients with de novo target lesion <=2.75 mm in diameter in a native coronary artery that could be completely covered by a single stent (maximum length 33 mm)	cypher **versus** bx Sonic	single-blind parallel groups Primary endpoint: binary restenosis 20 centres, Italy
SIRIUS (diabetics), 2003 [7, 8] n = 131 vs. 148	sub group of diabetics patients of SIRIUS study	SES **versus** BMS	double-blind parallel groups US
Sirolimus eluting stent versus paclitaxel eluting stent			
DES-DIABETES, 2008 [9, 10] n = 200 vs. 200	diabetic patients with angina pectoris and/or a positive stress test and a native coronary lesion	sirolimus-eluting stent **versus** paclitaxel-elutingstent	open factorial plan Primary endpoint: in-segment restenosis at 6 months 5 centres, Korea QCA follow-up duration: 6 months
ISAR-DIABETES, 2005 [11] n = 125 vs. 125	diabetic patients. AP or positive stress, no AMI with clinically significant angiographic stenosis in a native coronary vessel	taxus **versus** cypher	open parallel groups Primary endpoint: late lumen loss 2 centres, Germany
REALITY (diabetics), 2006 [12] n = 187 vs. 192		SES **versus** PES	open parallel groups worldwide
SIRTAX diabetics, 2005 [13, 14] n = 108 vs. 93	sub groups of diabetics patients with either stable angina or an acute coronarysyndrome	cypher **versus** taxus	single-blind parallel groups Primary endpoint: cardiac death, AMI, TLR 2 centres, Switzerland
TAxi (diabetics), 3000 n = 33 vs. 36		SES **versus** PES	open parallel groups Switzerland
Tomai, 2008 [15] n = 60 vs. 60	diabetic patient with multiple de novo coronary artery lesions	sirolimus-eluting stent **versus** paclitaxel-eluting stent	NA cross over Primary endpoint: in-stent late luminal loss Single center, Italy

Table 7.2: *Summary of all results for CoStar stent*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n
CoStar stent versus paclitaxel eluting stent						
MACE	RR=1.32	0.80;2.18	0.2746	1.0000 (0.00)	1	455
target lesion revascularisation	RR=1.70	0.89;3.26	0.1083	1.0000 (0.00)	1	455

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients

Table 7.3: *Summary of all results for everolimus eluting stent*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n
everolimus eluting stent versus sirolimus ES						
No data were presented in the trial identified						

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients

Table 7.4: *Summary of all results for paclitaxel eluting stent*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n
paclitaxel eluting stent versus bare-metal stent						
target lesion revascularisation	RR=0.40	0.27;0.60	0.0000	0.3729 (0.04)	4	834
angiographic restenosis	RR=0.17	0.08;0.37	0.0000	0.9225 (0.00)	3	485
paclitaxel eluting stent versus sirolimus eluting stent						
No data were presented in the trial identified						

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients

Table 7.5: *Summary of all results for sirolimus eluting stent*

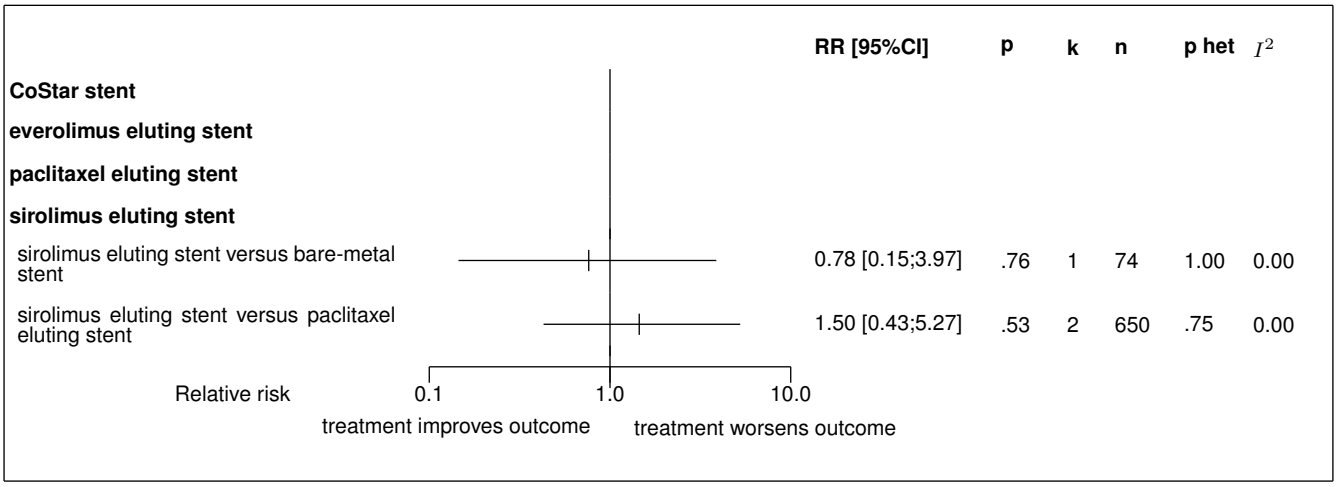
Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n
sirolimus eluting stent versus bare-metal stent						
myocardial infarction (fatal and non fatal)	RR=0.78	0.15;3.97	0.7605	1.0000 (0.00)	1	74
MACE	RR=0.40	0.23;0.69	0.0000	0.2910 (0.10)	2	234
2 yr MACE	RR=0.31	0.16;0.59	0.0000	1.0000 (0.00)	1	158
2 yr TLR	RR=0.22	0.10;0.50	0.0000	1.0000 (1.00)	1	158
target lesion revascularisation	RR=0.25	0.11;0.54	0.0000	0.0790 (0.56)	4	361

continued...

Endpoint	Effect	95% CI	p ass	p het	k	n
stent thrombosis (any, end of follow up)	RR=0.70	0.09;5.27	0.7318	0.8741 (0.00)	2	157
sub acute stent thrombosis (1-30 days)	RR=0.51	0.02;15.07	0.6986	1.0000 (0.00)	1	158
late stent thrombosis (31days - 1year)	RR=0.51	0.02;15.07	0.6986	1.0000 (0.00)	1	158
angiographic restenosis	RR=0.16	0.08;0.31	0.0000	0.3037 (0.16)	3	278
all cause death	RR=0.30	0.03;2.87	0.2945	0.4499 (0.00)	2	157
sirolimus eluting stent versus paclitaxel eluting stent						
myocardial infarction (fatal and non fatal)	RR=1.50	0.43;5.27	0.5269	0.7470 (0.00)	2	650
cardiac death	RR=0.50	0.02;14.82	0.6885	1.0000 (0.00)	1	400
MACE	RR=0.56	0.09;3.50	0.5384	0.0703 (0.69)	2	469
target-vessel revascularization	RR=0.44	0.18;1.04	0.0614	1.0000 (0.00)	1	400
target lesion revascularisation	RR=0.61	0.31;1.20	0.1518	0.0763 (0.53)	5	1299
CABG	RR=1.00	0.14;7.03	1.0000	1.0000 (0.00)	1	400
in-lesion binary restenosis	RR=0.21	0.09;0.51	0.0000	1.0000 (1.00)	1	400
stent thrombosis (any, end of follow up)	RR=0.64	0.07;6.30	0.7039	0.3741 (0.00)	2	650
4y stent thrombosis (ARC)	RR=0.25	0.01;5.49	0.3791	1.0000 (0.00)	1	250
acute stent thrombosis (<=24h)	RR=2.00	0.07;59.28	0.6885	1.0000 (0.00)	1	400
sub acute stent thrombosis (1-30 days)	RR=1.00	0.02;50.15	1.0000	1.0000 (0.00)	1	400
late stent thrombosis (31days - 1year)	RR=0.45	0.13;1.54	0.2023	0.7437 (0.00)	4	1230
angiographic restenosis	RR=0.22	0.10;0.48	0.0000	1.0000 (0.00)	1	400
all cause death	RR=0.64	0.20;2.07	0.4597	0.8759 (0.00)	2	650

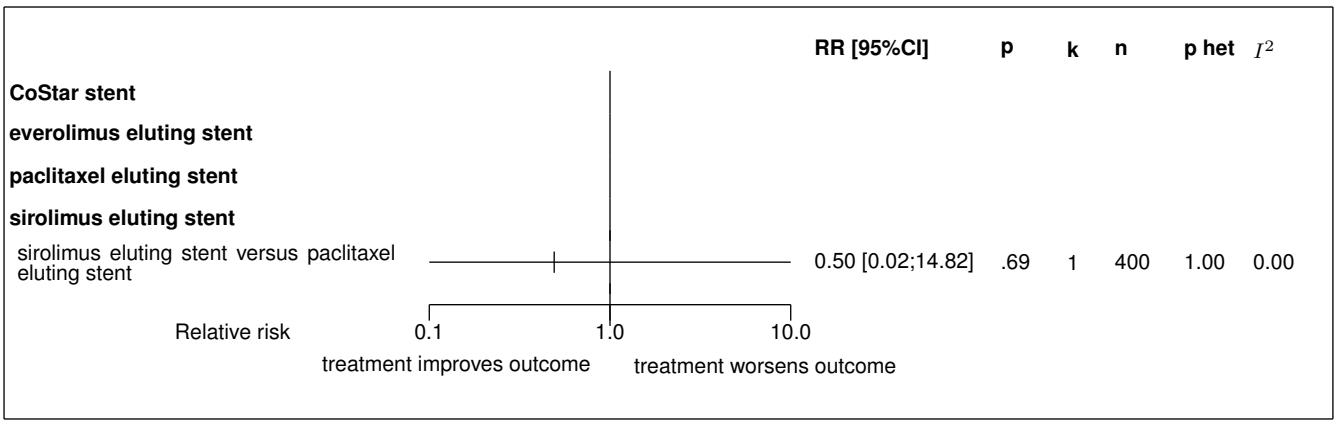
CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients

Figure 7.1: *Forest's plot for myocardial infarction (fatal and non fatal)*



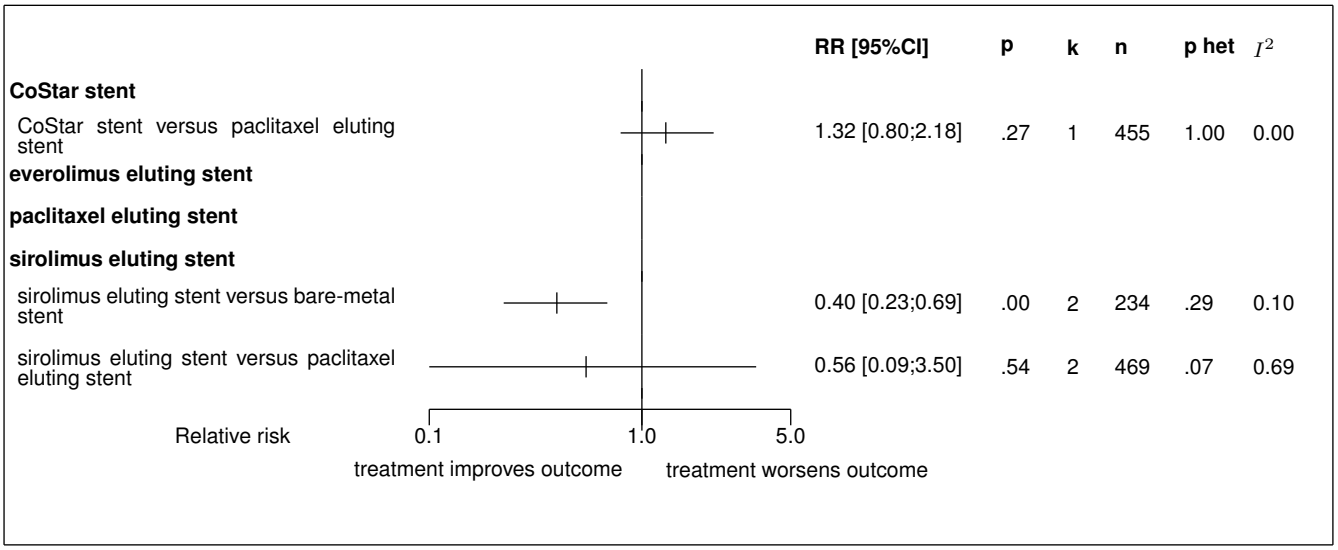
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ʳ: random effect model used

Figure 7.2: *Forest's plot for cardiac death*



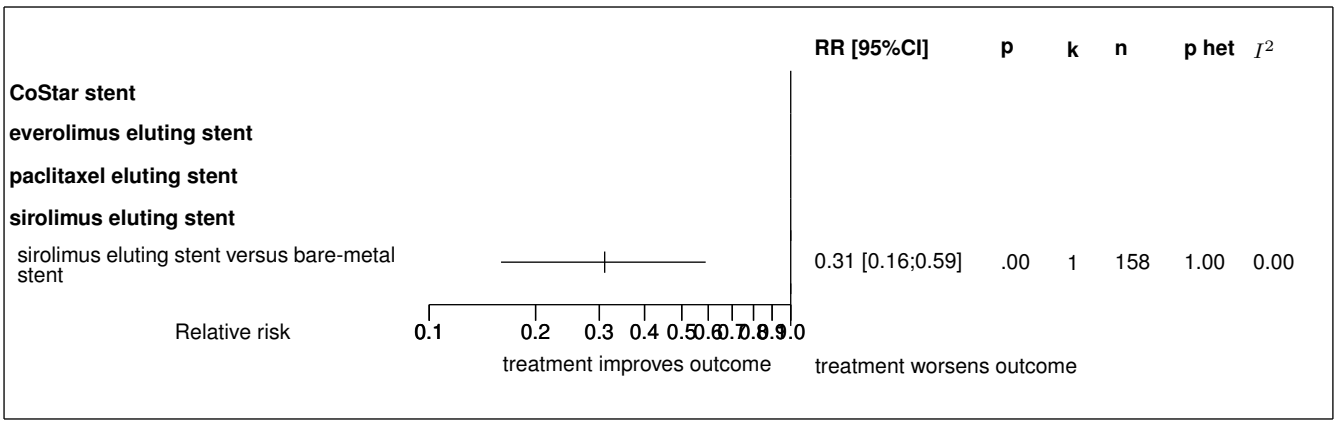
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ʳ: random effect model used

Figure 7.3: *Forest's plot for MACE*



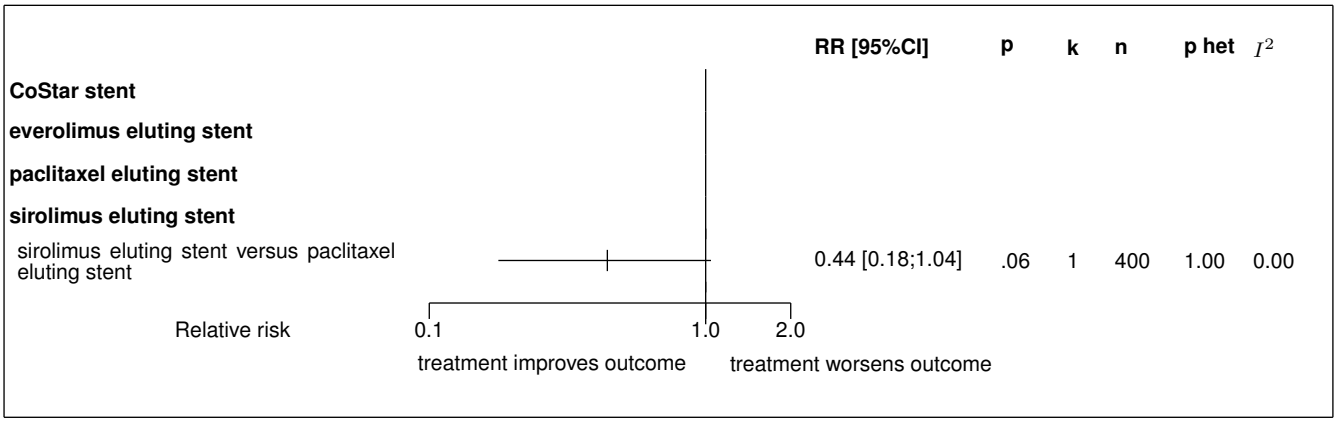
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ᶠ: random effect model used

Figure 7.4: *Forest's plot for 2 yr MACE*



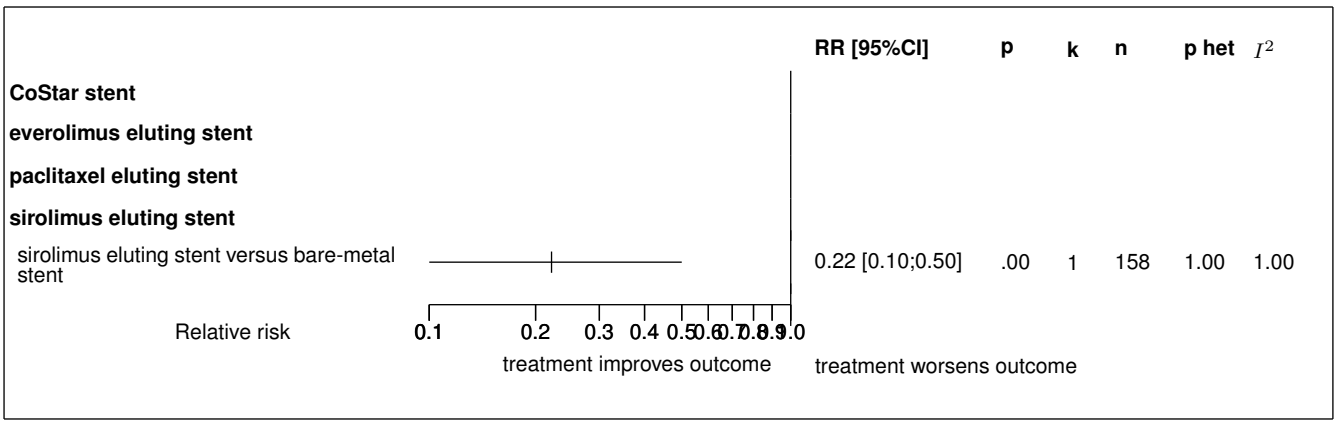
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ᶠ: random effect model used

Figure 7.5: *Forest's plot for target-vessel revascularization*



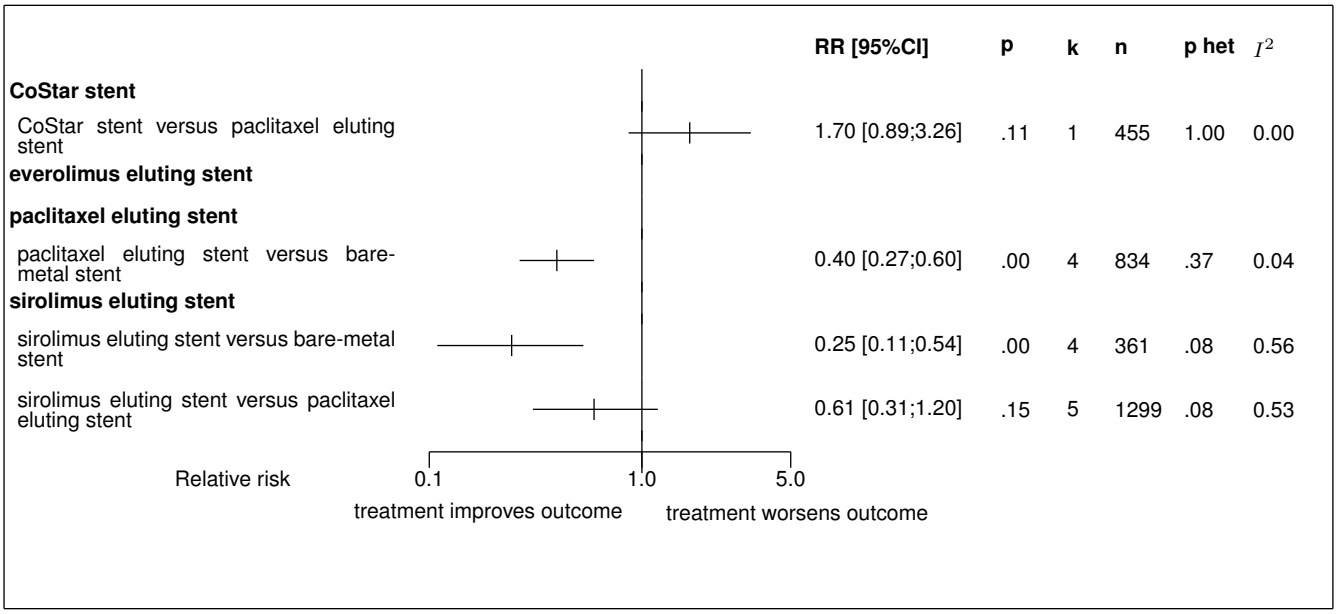
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ʳ: random effect model used

Figure 7.6: *Forest's plot for 2 yr TLR*



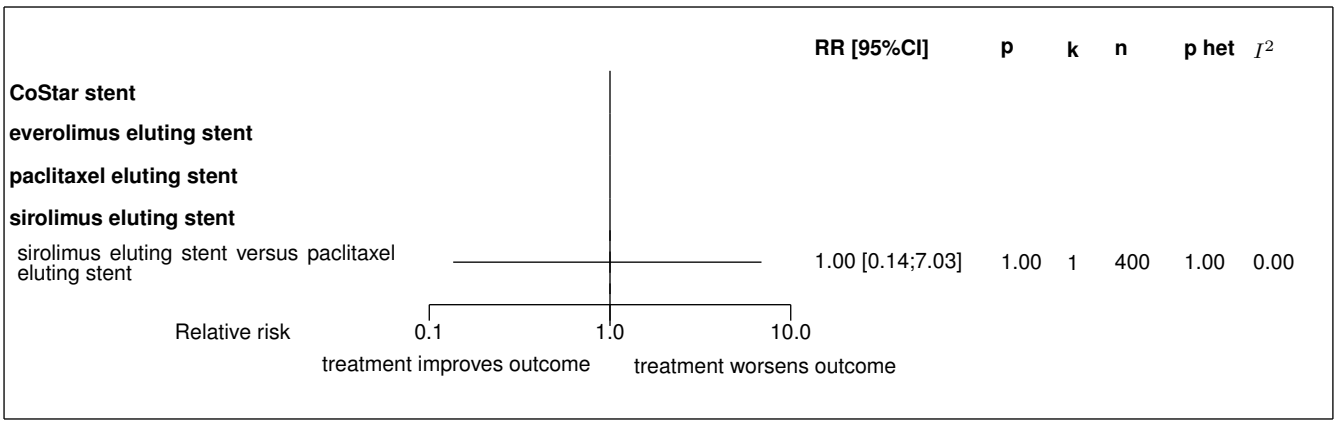
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ʳ: random effect model used

Figure 7.7: *Forest's plot for target lesion revascularisation*



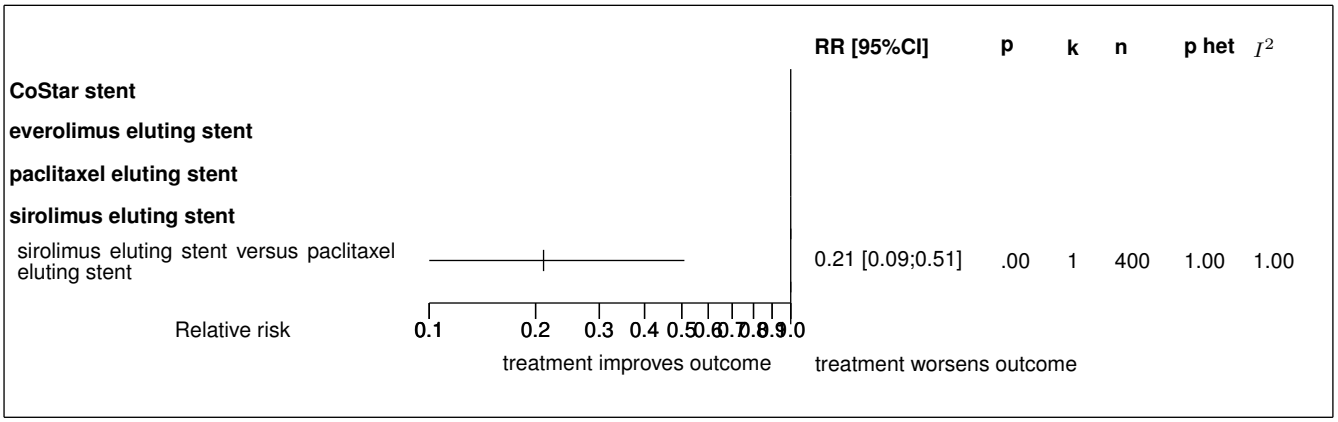
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ^{r}: random effect model used

Figure 7.8: *Forest's plot for CABG*



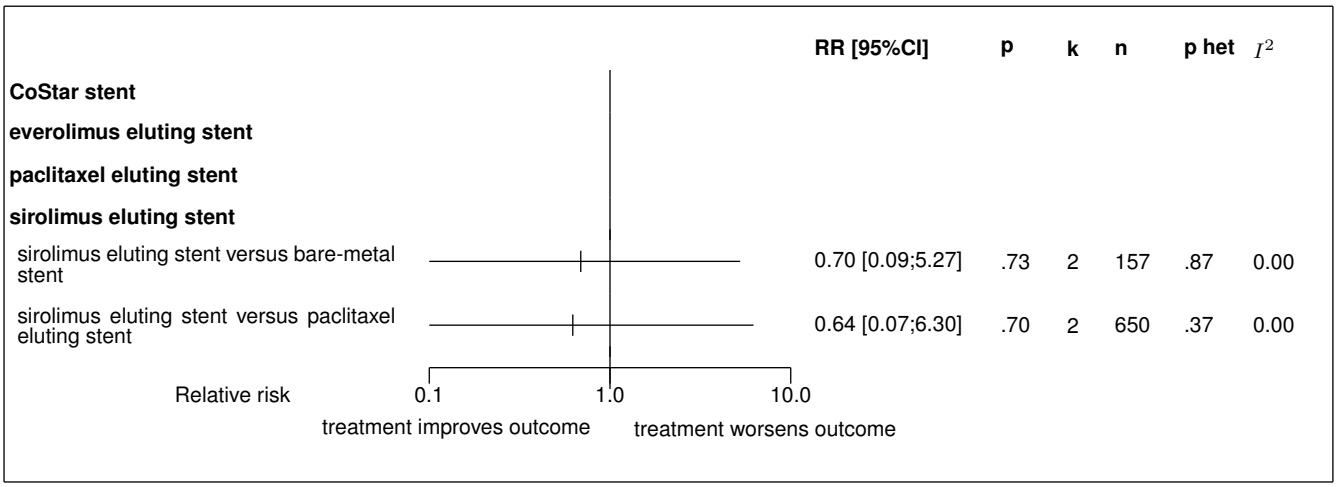
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ^{r}: random effect model used

Figure 7.9: *Forest's plot for in-lesion binary restenosis*



Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ʳ: random effect model used

Figure 7.10: *Forest's plot for stent thrombosis (any, end of follow up)*

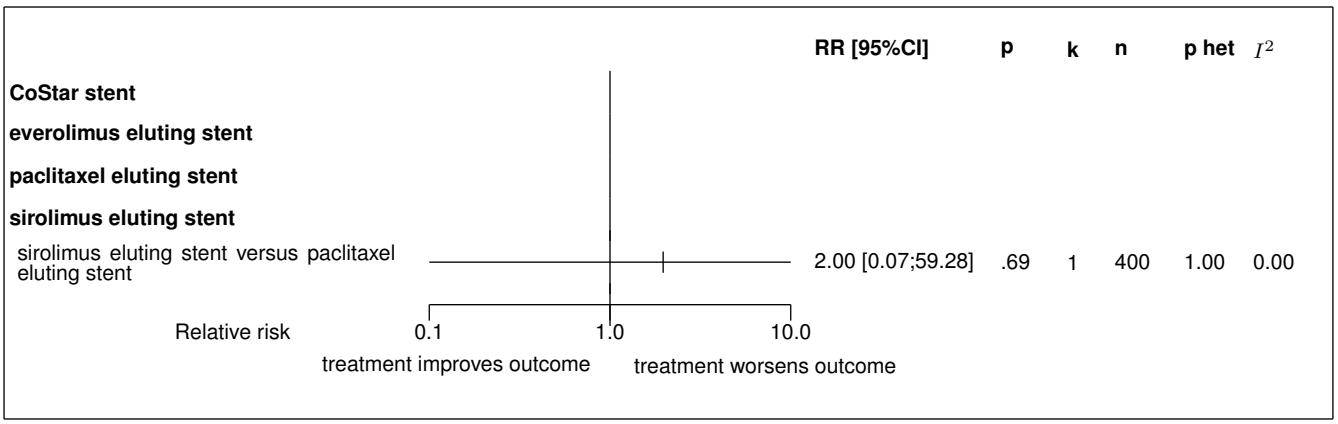


Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ʳ: random effect model used

Figure 7.11: *Forest's plot for 4y stent thrombosis (ARC)*

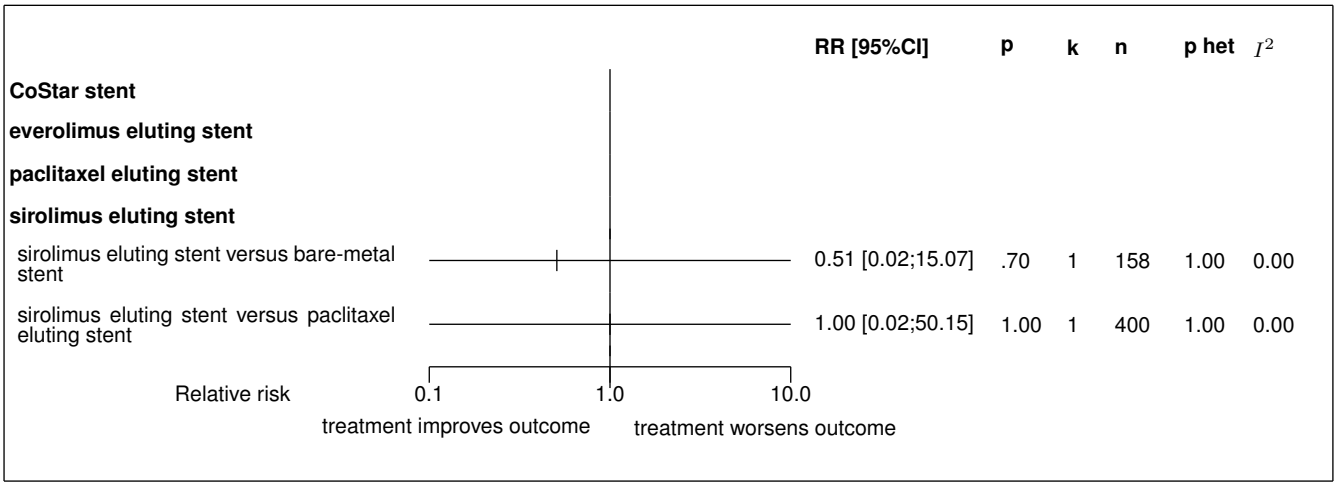
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ʳ: random effect model used

Figure 7.12: *Forest's plot for acute stent thrombosis (<=24h)*



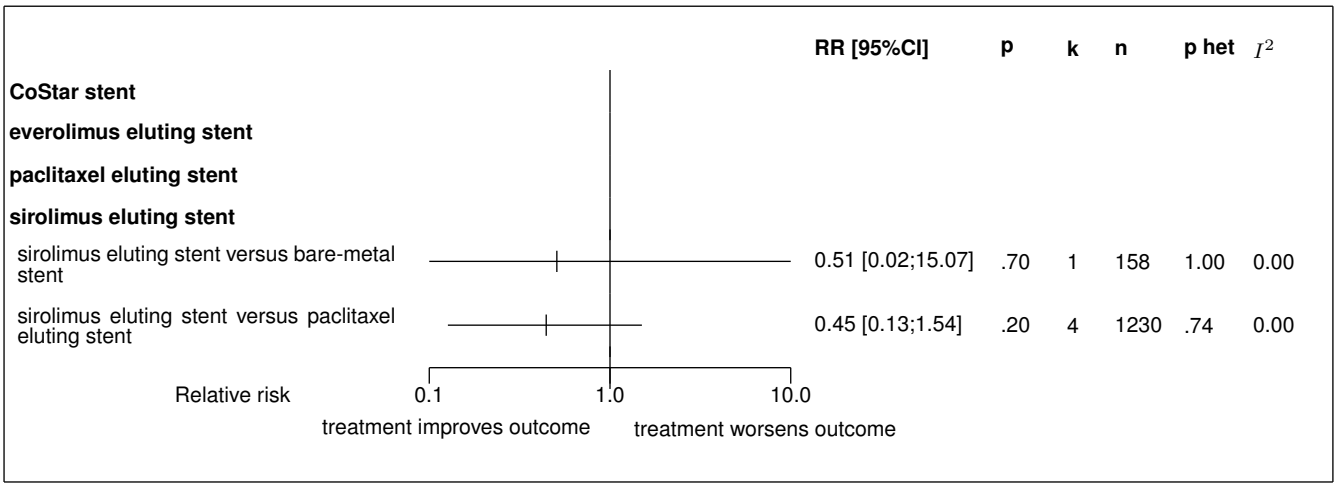
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ʳ: random effect model used

Figure 7.13: *Forest's plot for sub acute stent thrombosis (1-30 days)*



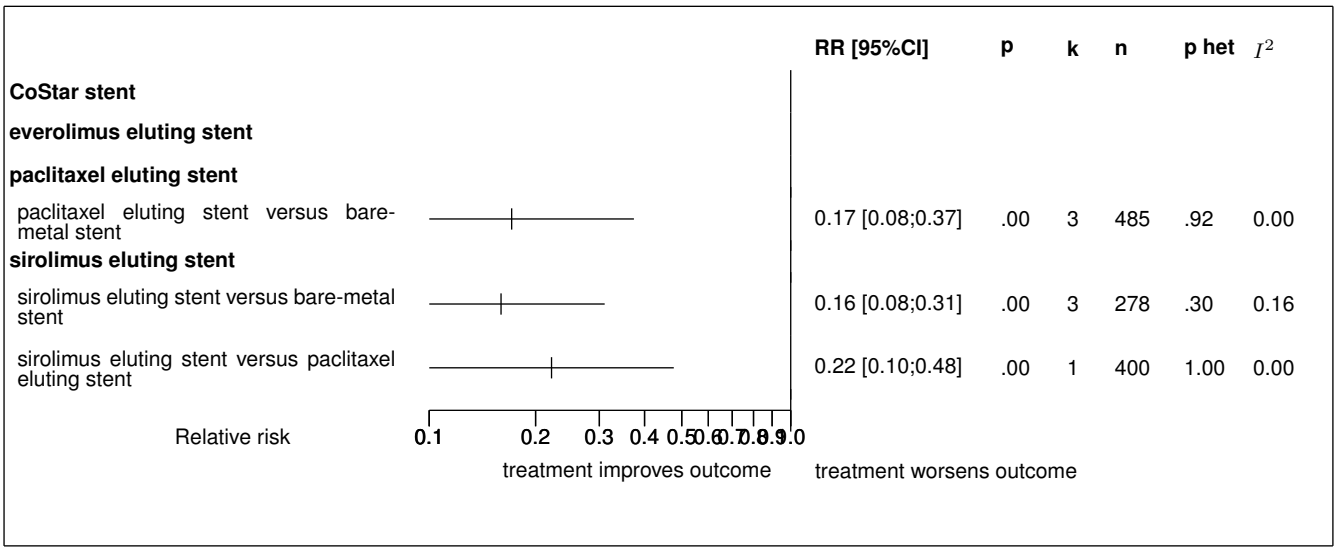
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ʳ: random effect model used

Figure 7.14: *Forest's plot for late stent thrombosis (31days - 1year)*



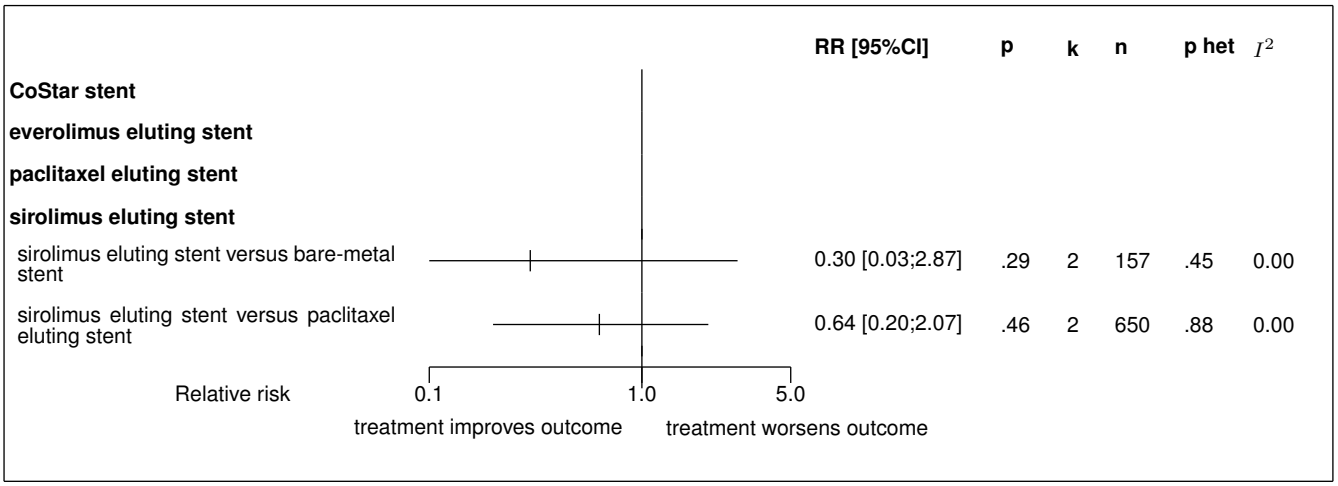
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ʳ: random effect model used

Figure 7.15: *Forest's plot for angiographic restenosis*



Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ᶠ: random effect model used

Figure 7.16: *Forest's plot for all cause death*



Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ᶠ: random effect model used

8 Detailed results for CoStar stent

8.1 Available trials

Only one trial which randomized 542 patients was identified: it compared CoStar stent with paclitaxel eluting stent.
This trial included 542 patients and was published in 2008.
This trial was open-label in design.
It was reported in English language.
Target lesion revascularisation data was reported in 1 trials; and 1 trials reported data on MACE.
Following tables 8.1 (page 44), 8.2 (page 44), 8.6 (page 48), and 8.3 (page 44) summarized the main characteristics of the trial including in this systematic review of randomized trials of CoStar stent.

Table 8.1: *Treatment description - drug-eluting stents - CoStar stent*

Trial	Studied treatment	Control treatment
CoStar stent versus paclitaxel eluting stent		
COSTAR II diabetic (sub group) (2008) [1]	CoStar stent (PES)	Taxus stent (PES)

Table 8.2: *Descriptions of participants - drug-eluting stents - CoStar stent*

Trial	Patients
CoStar stent versus paclitaxel eluting stent	
COSTAR II diabetic (sub group) (2008) [1]	Patients with de novo single- or multivessel coronary disease

Table 8.3: *Design and methodological quality of trials - drug-eluting stents - CoStar stent*

Trial	Design	Duration	Centre	Primary end-point
CoStar stent versus paclitaxel eluting stent				
COSTAR II diabetic (sub group), 2008 [1] n=542	Parallel groups open exploratory trial	8 months inclusion period: may 2005 - apr 2006		MACE

continued...

Trial	Design	Duration	Centre	Primary endpoint

Table 8.4: *Trial characteristics - drug-eluting stents - CoStar stent(continued...)*

Trial	molcule	age	Female (%)	male (%)	unstable angina (%)	history of MI (%)	diabetes (%)	Smoker (%)
CoStar stent versus paclitaxel eluting stent								
COSTAR II diabetic (sub group), 2008 [1]								

continued...

Table 8.5: *Trial characteristics - drug-eluting stents - CoStar stent(continued...)*

Trial	restenotic lesion	lesions in a bypass graft	bifurcated lesions	left main coronary artery disease	totally occluded lesions	ostial lesion	LAD (%)	RCA (%)
CoStar stent versus paclitaxel eluting stent								
COSTAR II diabetic (sub group), 2008 [1]								

continued...

Table 8.6: *Trial characteristics - drug-eluting stents - CoStar stent*

Trial	LCx (%)	lesion length (mm)	reference-vessel diameter	QCA follow-up duration	%QCA follow-up
CoStar stent versus paclitaxel eluting stent					
COSTAR II diabetic (sub group), 2008 [1]					

8.2 Meta-analysis results

The results are detailed in table 8.7 (page 49). This table is followed by the Forest's plot corresponding to each endpoint.

CoStar stent versus paclitaxel eluting stent

The single study eligible for this comparison provided data on **MACE**. No statistically significant difference between the groups was found in MACE, with a RR of 1.32 (95% CI 0.80 to 2.18, p=0.2746).
The single study eligible for this comparison provided data on **target lesion revascularisation**. No statistically significant difference between the groups was found in target lesion revascularisation, with a RR of 1.70 (95% CI 0.89 to 3.26, p=0.1083).

Table 8.7: *Results details - drug-eluting stents - CoStar stent*

Comparison Endpoint	Effect	95% CI	p ass	p het	k	n
CoStar stent versus paclitaxel eluting stent						
MACE	RR=1.32	[0.80;2.18]	0.2746	1.0000 (I^2=0.00)	1	455
target lesion revascularisation	RR=1.70	[0.89;3.26]	0.1083	1.0000 (I^2=0.00)	1	455

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

Figure 8.1: *Forest's plot for MACE*

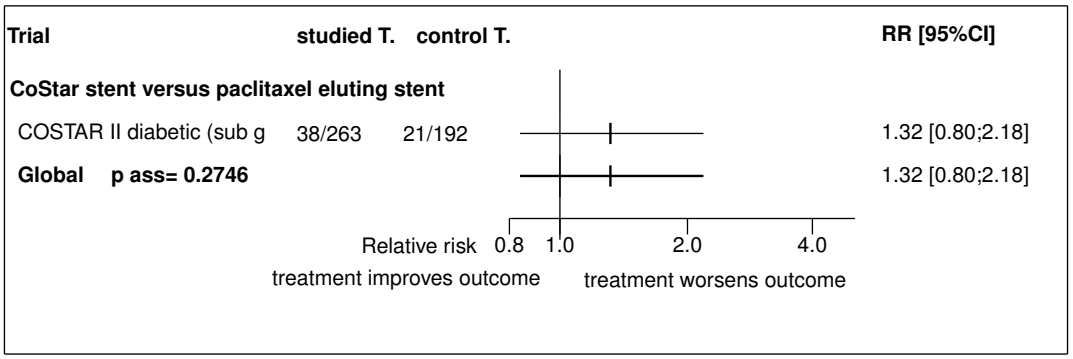
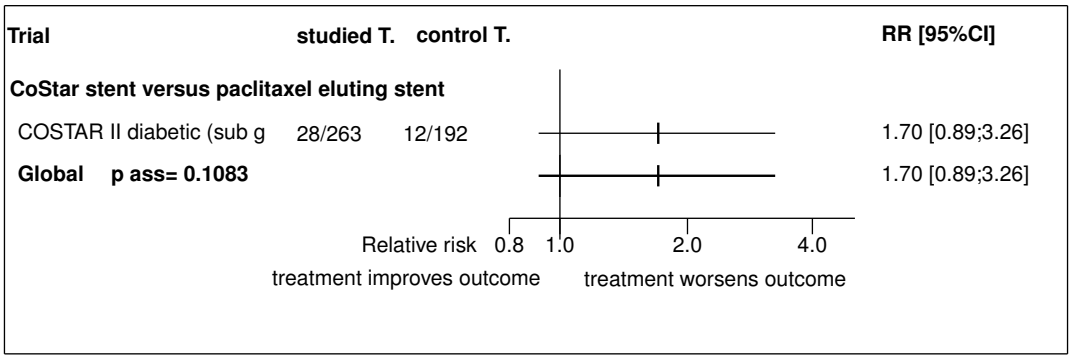


Figure 8.2: *Forest's plot for target lesion revascularisation*



References

[1] Kereiakes DJ, Petersen JL, Batchelor WB, Fitzgerald PJ, Mehran R, Lansky A, Tsujino I, Schofer J, Dubois C, Verheye S, Cristea E, Garg J, Wijns W, Krucoff MW. Clinical and angiographic outcomes in diabetic patients following single or multivessel stenting in the COSTAR II randomized trial. J Invasive Cardiol 2008;20:335-41. [PMID=18599890]

8.3 Individual trial summaries

Table 8.8: *COSTAR II diabetic (sub group), 2008 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=542 (271 vs. 271) **Follow-up duration:** 8 months **Study design:** Randomized controlled trial Parallel groups Open Exploratory trial **Inclusion period:** may 2005 - apr 2006	Patients with de novo single- or multivessel coronary disease	**Studied treatment:** CoStar stent (PES) **Control treatment:** Taxus stent (PES)	

Reference

Kereiakes DJ, Petersen JL, Batchelor WB, Fitzgerald PJ, Mehran R, Lansky A, Tsujino I, Schofer J, Dubois C, Verheye S, Cristea E, Garg J, Wijns W, Krucoff MW. Clinical and angiographic outcomes in diabetic patients following single or multivessel stenting in the COSTAR II randomized trial. J Invasive Cardiol 2008;20:335-41 [PMID=18599890]

9 Detailed results for everolimus eluting stent

9.1 Available trials

Only one trial which randomized 300 patients was identified: it compared everolimus eluting stent with sirolimus ES.
This trial included 300 patients and was published in .
This trial was open-label in design.
It was reported in English language.
data was reported in trials;
Following tables 9.1 (page 53), 9.2 (page 53), 9.6 (page 57), and 9.3 (page 53) summarized the main characteristics of the trial including in this systematic review of randomized trials of everolimus eluting stent.

Table 9.1: *Treatment description - drug-eluting stents - everolimus eluting stent*

Trial	Studied treatment	Control treatment
Everolimus eluting stent versus sirolimus ES		
ESSENCE diabetes () [1]	everolimus-eluting stent Xience V	sirolimus-eluting stent Cypher

Table 9.2: *Descriptions of participants - drug-eluting stents - everolimus eluting stent*

Trial	Patients
Everolimus eluting stent versus sirolimus ES	
ESSENCE diabetes () [1]	Diabetic patients with angina or documented ischemia

Table 9.3: *Design and methodological quality of trials - drug-eluting stents - everolimus eluting stent*

Trial	Design	Duration	Centre	Primary end-point
Everolimus eluting stent versus sirolimus ES				

continued...

Trial	Design	Duration	Centre	Primary end-point
ESSENCE diabetes, [1] n=300	Parallel groups open	1y for clinical events	South Korea 15 centres	maximal regional late loss at 8-month

Table 9.4: *Trial characteristics - drug-eluting stents - everolimus eluting stent(continued...)*

Trial	molcule	age	Female (%)	male (%)	unstable angina (%)	history of MI (%)	diabetes (%)	Smoker (%)
Everolimus eluting stent versus sirolimus ES								
ESSENCE diabetes, [1]								

continued...

Table 9.5: *Trial characteristics - drug-eluting stents - everolimus eluting stent(continued...)*

Trial	restenotic lesion	lesions in a bypass graft	bifurcated lesions	left main coronary artery disease	totally occluded lesions	ostial lesion	LAD (%)	RCA (%)
Everolimus eluting stent versus sirolimus ES								
ESSENCE diabetes, [1]								

continued...

Table 9.6: *Trial characteristics - drug-eluting stents - everolimus eluting stent*

Trial	LCx (%)	lesion length (mm)	reference-vessel diameter	QCA follow-up duration	%QCA follow-up
Everolimus eluting stent versus sirolimus ES					
ESSENCE diabetes, [1]					

9.2 Meta-analysis results

The results are detailed in table 9.7 (page 58). This table is followed by the Forest's plot corresponding to each endpoint.

Everolimus eluting stent versus sirolimus ES

No data were presented in the 1 trial identified

Table 9.7: *Results details - drug-eluting stents - everolimus eluting stent*

Comparison Endpoint	Effect	95% CI	p ass	p het	k	n
everolimus eluting stent versus sirolimus ES						
No data were presented in the trial identified						

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

References

[1] Kim WJ, Lee SW, Park SW, Kim YH, Yun SC, Lee JY, Park DW, Kang SJ, Lee CW, Lee JH, Choi SW, Seong IW, Lee BK, Lee NH, Cho YH, Shin WY, Lee SJ, Lee SW, Hyon MS, Bang DW, Park WJ, Kim HS, Chae JK, Lee K, Park HK, Park CB, Lee SG, Kim MK, Park KH, Choi YJ, C. Randomized Comparison of Everolimus-Eluting Stent Versus Sirolimus-Eluting Stent Implantation for De Novo Coronary Artery Disease in Patients With Diabetes Mellitus (ESSENCE-DIABETES): Results From the ESSENCE-DIABETES Trial. Circulation 2011 Aug 23;124:886-892. [PMID=21810659]

9.3 Individual trial summaries

Table 9.8: *ESSENCE diabetes, - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=300 (149 vs. 151) **Follow-up duration:** 1y for clinical events **Study design:** Randomized controlled trial Parallel groups Open South Korea, 15 centres	Diabetic patients with angina or documented ischemia	**Studied treatment:** everolimus-eluting stent Xience V **Control treatment:** sirolimus-eluting stent Cypher	

Reference

Kim WJ, Lee SW, Park SW, Kim YH, Yun SC, Lee JY, Park DW, Kang SJ, Lee CW, Lee JH, Choi SW, Seong IW, Lee BK, Lee NH, Cho YH, Shin WY, Lee SJ, Lee SW, Hyon MS, Bang DW, Park WJ, Kim HS, Chae JK, Lee K, Park HK, Park CB, Lee SG, Kim MK, Park KH, Choi YJ, C. Randomized Comparison of Everolimus-Eluting Stent Versus Sirolimus-Eluting Stent Implantation for De Novo Coronary Artery Disease in Patients With Diabetes Mellitus (ESSENCE-DIABETES): Results From the ESSENCE-DIABETES Trial. Circulation 2011 Aug 23;124:886-892 [PMID=21810659]

10 Detailed results for paclitaxel eluting stent

10.1 Available trials

A total of 5 RCTs which randomized 965 patients were identified: 4 trials compared paclitaxel eluting stent with bare-metal stent and it compared paclitaxel eluting stent with sirolimus eluting stent.
The average study size was 193 patients (range 78 to 349). The first study was published in 2003, and the last study was published in 2006.
A total of 4 trials were double blind and 1 were open-label in design. All included studies were reported in English language. We found one unpublished trial.
data was reported in trials;
Following tables 10.1 (page 61), 10.2 (page 62), 10.6 (page 66), and 10.3 (page 62) summarized the main characteristics of the trials including in this systematic review of randomized trials of paclitaxel eluting stent.

Table 10.1: *Treatment description - drug-eluting stents - paclitaxel eluting stent*

Trial	Studied treatment	Control treatment
Paclitaxel eluting stent versus bare-metal stent		
TAXUS II (diabetics) (2003) [1]	TAXUS Two paclitaxel-eluting release formulations wereevaluated, TAXUS-SR (slow release) and TAXUS-MR (moderaterelease), which has an 8-fold higher 10-day drug release. **Concomittant treatment:** Clopidogrel (or ticlopidine) 6 months	NIR stent
TAXUS IV (diabetics) (2005) [2]	TAXUS **Concomittant treatment:** Clopidogrel for 6 months	EXPRESS
TAXUS V (diabetics) (2005) [3]	TAXUS **Concomittant treatment:** NA	BMS
TAXUS VI (diabetics) (2005) [4]	TAXUS **Concomittant treatment:** NA	Express2 stent
Paclitaxel eluting stent versus sirolimus eluting stent		
ISAR-test (diabetics) (2006) [5]	Taxus polymer-based,paclitaxel-eluting stent	rapamycin stent

Table 10.2: *Descriptions of participants - drug-eluting stents - paclitaxel eluting stent*

Trial	Patients
Paclitaxel eluting stent versus bare-metal stent	
TAXUS II (diabetics) (2003) [1]	Diabetic patients with stable or unstable AP, silent ischaemia; single de novo target lesion with estimatedstenosis >50% and <99%,
TAXUS IV (diabetics) (2005) [2]	Diabetic patients with stable or unstable AP, provokable ischaemia with a single, previously untreated coronary-artery stenosis (vessel diameter, 2.5 to 3.75 mm; lesion length, 10 to 28 mm)
TAXUS V (diabetics) (2005) [3]	Diabetic patients with stable or unstable AP, silent ischaemia with complex or previously unstudied lesions (requiring 2.25-mm, 4.0-mm, and/or multiple stents)
TAXUS VI (diabetics) (2005) [4]	Diabetic patients with stable or unstable AP, silent ischaemia with long, complex coronary artery lesions **Inclusion criteria:** de novo target lesion located within asingle native coronary vessel with a reference vessel diameterbetween 2.5 and 3.75 mm, a cumulative target-lesion length of 18 to40 mm, and a diameter stenosis >=50%;Target lesions randomized totreatment with the study device had to be completely coverable by upto 2 study stents (maximum allowable stent length, 48 mm). **Exclusion criteria:**
Paclitaxel eluting stent versus sirolimus eluting stent	
ISAR-test (diabetics) (2006) [5]	Diabetics patientswith de novo lesions in native coronary vessels, excluding the left main trunk

Table 10.3: *Design and methodological quality of trials - drug-eluting stents - paclitaxel eluting stent*

Trial	Design	Duration	Centre	Primary endpoint
Paclitaxel eluting stent versus bare-metal stent				
TAXUS II (diabetics), 2003 [1] n=78	Parallel groups double-blind	12 months	Europe 38 centres	Neointimal proliferation
TAXUS IV (diabetics), 2005 [2] n=318	Parallel groups double-blind	9 months	United States 73 centres	TVR

continued...

Trial	Design	Duration	Centre	Primary endpoint
TAXUS V (diabetics), 2005 [3] n=349	Parallel groups double-blind	9 months	United States 66 centres	TVR
TAXUS VI (diabetics), 2005 [4] n=89	Parallel groups double-blind	9 months	Europe 44 centres	TVR
Paclitaxel eluting stent versus sirolimus eluting stent				
ISAR-test (diabetics), 2006 [5] n=131	Parallel groups open confirmatory trial at risk of bias	9 months	germany	

Table 10.4: *Trial characteristics - drug-eluting stents - paclitaxel eluting stent(continued...)*

Trial	molcule	age	Female (%)	male (%)	unstable angina (%)	history of MI (%)	diabetes (%)	Smoker (%)
Paclitaxel eluting stent versus bare-metal stent								
TAXUS II (diabetics), 2003 [1]								
TAXUS IV (diabetics), 2005 [2]							100%	
TAXUS V (diabetics), 2005 [3]								
TAXUS VI (diabetics), 2005 [4]								
Paclitaxel eluting stent versus sirolimus eluting stent								
ISAR-test (diabetics), 2006 [5]								

continued...

Table 10.5: *Trial characteristics - drug-eluting stents - paclitaxel eluting stent(continued...)*

Trial	restenotic lesion	lesions in a bypass graft	bifurcated lesions	left main coronary artery disease	totally occluded lesions	ostial lesion	LAD (%)	RCA (%)
Paclitaxel eluting stent versus bare-metal stent								
TAXUS II (diabetics), 2003 [1]								
TAXUS IV (diabetics), 2005 [2]								
TAXUS V (diabetics), 2005 [3]								
TAXUS VI (diabetics), 2005 [4]								
Paclitaxel eluting stent versus sirolimus eluting stent								
ISAR-test (diabetics), 2006 [5]								

continued...

Table 10.6: *Trial characteristics - drug-eluting stents - paclitaxel eluting stent*

Trial	LCx (%)	lesion length (mm)	reference-vessel diameter	QCA follow-up duration	%QCA follow-up
Paclitaxel eluting stent versus bare-metal stent					
TAXUS II (diabetics), 2003 [1]					
TAXUS IV (diabetics), 2005 [2]					
TAXUS V (diabetics), 2005 [3]					
TAXUS VI (diabetics), 2005 [4]					
Paclitaxel eluting stent versus sirolimus eluting stent					
ISAR-test (diabetics), 2006 [5]					

10.2 Meta-analysis results

The results are detailed in table 10.7 (page 67). This table is followed by the Forest's plot corresponding to each endpoint.

Paclitaxel eluting stent versus bare-metal stent

All the 4 studies had extractable data about the number of participants with **target lesion revascularisation**. The analysis detected a statistically significant difference in favor of paclitaxel eluting stent in target lesion revascularisation, with a RR of 0.40 (95% CI 0.27 to 0.60, p=0.0000). No heterogeneity was detected (p = 0.3729, I^2 = 0.04%).
A total of 3 of the 4 studies eligible for this comparison provided data on **angiographic restenosis**. The analysis detected a statistically significant difference in favor of paclitaxel eluting stent in angiographic restenosis, with a RR of 0.17 (95% CI 0.08 to 0.37, p=0.0000). No heterogeneity was detected (p = 0.9225, I^2 = 0.00%).

Paclitaxel eluting stent versus sirolimus eluting stent

No data were presented in the 1 trial identified

Table 10.7: *Results details - drug-eluting stents - paclitaxel eluting stent*

Comparison Endpoint	Effect	95% CI	p ass	p het	k	n
paclitaxel eluting stent versus bare-metal stent						
target lesion revascularisation	RR=0.40	[0.27;0.60]	0.0000	0.3729 (I^2=0.04)	4	834
angiographic restenosis	RR=0.17	[0.08;0.37]	0.0000	0.9225 (I^2=0.00)	3	485
paclitaxel eluting stent versus sirolimus eluting stent						
No data were presented in the trial identified						

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

Figure 10.1: *Forest's plot for target lesion revascularisation*

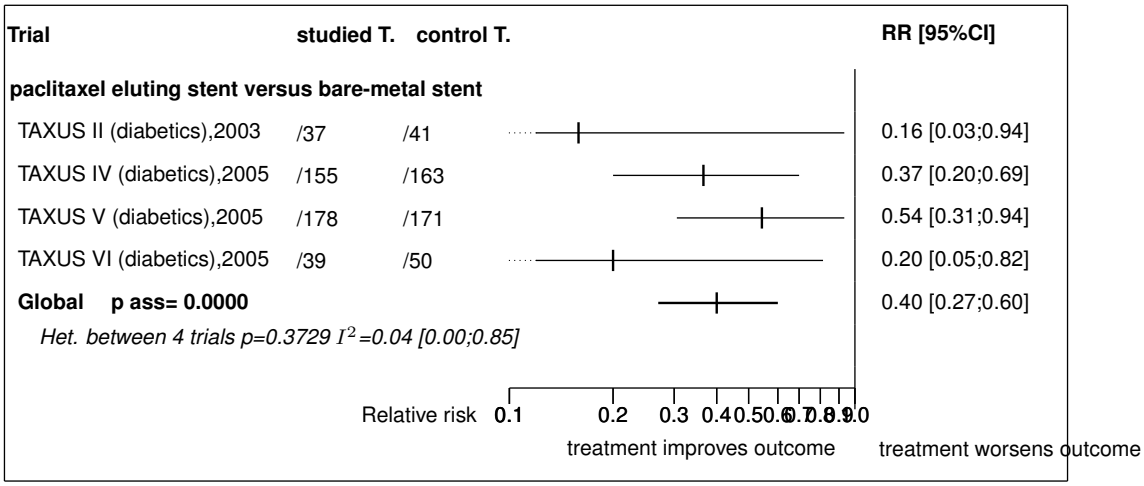
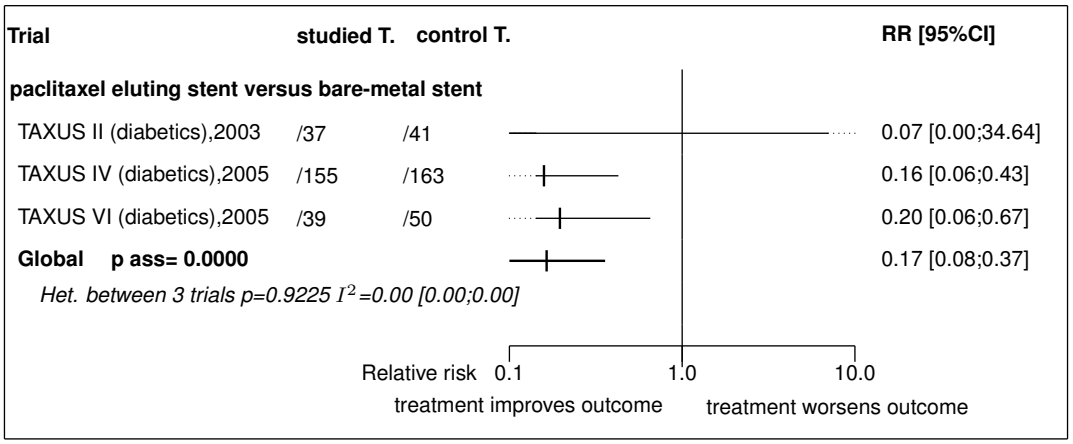


Figure 10.2: *Forest's plot for angiographic restenosis*



References

[1] Hermiller J. Diabetic results: Taxus II, IV and VI. TCT. [PMID=0]

[2] Hermiller JB, Raizner A, Cannon L, Gurbel PA, Kutcher MA, Wong SC, Russell ME, Ellis SG, Mehran R, Stone GW. Outcomes with the polymer-based paclitaxel-eluting TAXUS stent in patients with diabetes mellitus: the TAXUS-IV trial. J Am Coll Cardiol 2005;45:1172-9. [PMID=15837245]

[3] Ellis SG. TAXUS V trial global results: expanding the randomizeddata. 2005 American College of CardiologyAnnual Scientific Session.

[4] Dawkins KD, Grube E, Guagliumi G, Banning AP, Zmudka K, Colombo A, Thuesen L, Hauptman K, Marco J, Wijns W, Popma JJ, Koglin J, Russell ME. Clinical efficacy of polymer-based paclitaxel-eluting stents in the treatment of complex, long coronary artery lesions from a multicenter, randomized trial: support for the use of drug-eluting stents in contemporary clinical practice. Circulation 2005;112:3306-13. [PMID=16286586]

[5] Mehilli J, Kastrati A, Wessely R, Dibra A, Hausleiter J, Jaschke B, Dirschinger J, Schmig A. Randomized trial of a nonpolymer-based rapamycin-eluting stent versus a polymer-based paclitaxel-eluting stent for the reduction of late lumen loss. Circulation 2006;113:273-9. [PMID=16391155]

10.3 Individual trial summaries

Table 10.8: *TAXUS II (diabetics), 2003 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=78 (37 vs. 41) **Follow-up duration:** 12 months **Study design:** Randomized controlled trial Parallel groups Double-blind Europe, 38 centres	Diabetic patients with stable or unstable AP, silent ischaemia; single de novo target lesion with estimatedstenosis >50% and <99%,	**Studied treatment:** TAXUS Two paclitaxel-eluting release formulations wereevaluated, TAXUS-SR (slow release) and TAXUS-MR (moderaterelease), which has an 8-fold higher 10-day drug release. **Control treatment:** NIR stent **Concomittant treat.:**Clopidogrel (or ticlopidine) 6 months	

Reference
Hermiller J. Diabetic results: Taxus II, IV and VI. TCT [PMID=0]

Table 10.9: *TAXUS IV (diabetics), 2005 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=318 (155 vs. 163) **Follow-up duration:** 9 months **Study design:** Randomized controlled trial Parallel groups Double-blind United States, 73 centres	Diabetic patients with stable or unstable AP, provokable ischaemia with a single, previously untreated coronary-artery stenosis (vessel diameter, 2.5 to 3.75 mm; lesion length, 10 to 28 mm)	**Studied treatment:** TAXUS **Control treatment:** EXPRESS **Concomittant treat.:**Clopidogrel for 6 months	

Reference

Hermiller JB, Raizner A, Cannon L, Gurbel PA, Kutcher MA, Wong SC, Russell ME, Ellis SG, Mehran R, Stone GW. Outcomes with the polymer-based paclitaxel-eluting TAXUS stent in patients with diabetes mellitus: the TAXUS-IV trial. J Am Coll Cardiol 2005;45:1172-9 [PMID=15837245]

Table 10.10: *TAXUS V (diabetics), 2005 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=349 (178 vs. 171) **Follow-up duration:** 9 months **Study design:** Randomized controlled trial Parallel groups Double-blind United States, 66 centres	Diabetic patients with stable or unstable AP, silent ischaemia with complex or previously unstudied lesions (requiring 2.25-mm, 4.0-mm, and/or multiple stents)	**Studied treatment:** TAXUS **Control treatment:** BMS **Concomittant treat.:**NA	

Reference

Ellis SG. TAXUS V trial global results: expanding the randomizeddata. 2005 American College of CardiologyAnnual Scientific Session

Table 10.11: *TAXUS VI (diabetics), 2005 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=89 (39 vs. 50) **Follow-up duration:** 9 months **Study design:** Randomized controlled trial Parallel groups Double-blind Europe, 44 centres	Diabetic patients with stable or unstable AP, silent ischaemia with long, complex coronary artery lesions **Inclusion criteria:** de novo target lesion located within asingle native coronary vessel with a reference vessel diameterbetween 2.5 and 3.75 mm, a cumulative target-lesion length of 18 to40 mm, and a diameter stenosis >=50%;Target lesions randomized totreatment with the study device had to be completely coverable by upto 2 study stents (maximum allowable stent length, 48 mm).	**Studied treatment:** TAXUS **Control treatment:** Express2 stent **Concomittant treat.:**NA	

Reference

Dawkins KD, Grube E, Guagliumi G, Banning AP, Zmudka K, Colombo A, Thuesen L, Hauptman K, Marco J, Wijns W, Popma JJ, Koglin J, Russell ME. Clinical efficacy of polymer-based paclitaxel-eluting stents in the treatment of complex, long coronary artery lesions from a multicenter, randomized trial: support for the use of drug-eluting stents in contemporary clinical practice. Circulation 2005;112:3306-13 [PMID=16286586]

Table 10.12: *ISAR-test (diabetics), 2006 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=131 (73 vs. 58) **Follow-up duration:** 9 months **Study design:** Randomized controlled trial Parallel groups Open Confirmatory trial at risk of bias germany	Diabetics patientswith de novo lesions in native coronary vessels, excluding the left main trunk	**Studied treatment:** Taxus polymer-based,paclitaxel-eluting stent **Control treatment:** rapamycin stent	

Reference

Mehilli J, Kastrati A, Wessely R, Dibra A, Hausleiter J, Jaschke B, Dirschinger J, Schmig A. Randomized trial of a nonpolymer-based rapamycin-eluting stent versus a polymer-based paclitaxel-eluting stent for the reduction of late lumen loss. Circulation 2006;113:273-9 [PMID=16391155]

11 Detailed results for sirolimus eluting stent

11.1 Available trials

A total of 11 RCTs which randomized 2059 patients were identified: 5 trials compared sirolimus eluting stent with bare-metal stent and 6 trials compared sirolimus eluting stent with paclitaxel eluting stent.
The average study size was 187 patients (range 44 to 400). The first study was published in 2003, and the last study was published in 3000.
A total of 1 trials were double blind and 6 were open-label in design. All included studies were reported in English language. We found 3 unpublished trials.
Target lesion revascularisation data was reported in 7 trials; 4 trials reported data on all cause death; 4 trials reported data on MACE; 3 trials reported data on myocardial infarction (fatal and non fatal); 2 trials reported data on angiographic restenosis; 1 trials reported data on cardiac death; 1 trials reported data on 2 yr MACE; 1 trials reported data on in-lesion binary restenosis; 1 trials reported data on target-vessel revascularization; 1 trials reported data on CABG; 1 trials reported data on 2 yr TLR; 5 trials reported data on late stent thrombosis (31days - 1year); 4 trials reported data on stent thrombosis (any, end of follow up); 2 trials reported data on sub acute stent thrombosis (1-30 days); 1 trials reported data on acute stent thrombosis ($<$=24h); and 1 trials reported data on 4y stent thrombosis (ARC).
Following tables 11.1 (page 75), 11.2 (page 76), 11.6 (page 85), and 11.3 (page 78) summarized the main characteristics of the trials including in this systematic review of randomized trials of sirolimus eluting stent.

Table 11.1: *Treatment description - drug-eluting stents - sirolimus eluting stent*

Trial	Studied treatment	Control treatment
Sirolimus eluting stent versus bare-metal stent		
DECODE (2005) [1]	CYPHER (Up to 3 stents per patient were allowed)	Bx VELOCITY (Up to 3 stents per patient were allowed)
	Concomittant treatment: Life-long Aspirin and 12 weeks post-procedure Plavix	
DIABETES (2005) [2, 3, 4]	Cypher	Bx Velocity/Sonic
	Concomittant treatment: NA	
Ravel (diabetics) (2004) [5]	coated Bx velocity	Bx VELOCITY
SES-SMARt (diabetics) (2005) [6]	Cypher	Bx Sonic
	Concomittant treatment: Clopidogrel 2 months	
SIRIUS (diabetics) (2003) [7, 8]	SES	BMS

continued...

Trial	Studied treatment	Control treatment
	Concomittant treatment: oral aspirin (325 mg daily) and oral clopidogrel(a loading dose of 300 to 375 mg 24 hours beforethe procedure and then 75 mg daily for threemonths). During the procedure, intravenous heparinboluses were administered. The use of intravenousglycoprotein IIb/IIIa inhibitors was at the discretionof the physician.	
Sirolimus eluting stent versus paclitaxel eluting stent		
DES-DIABETES (2008) [9, 10] [a]	sirolimus-eluting stent	paclitaxel-elutingstent
ISAR-DIABETES (2005) [11]	Taxus	Cypher
REALITY (diabetics) (2006) [12]	SES	PES
SIRTAX diabetics (2005) [13, 14]	Cypher available in diameters of 2.25 to3.50 mm and in lengths of 8 to 33 mm	Taxus available in diameters of 2.25 to3.50 mm and in lengths of 8 to 32 mm.
	Concomittant treatment: for procedure: 100 mg of aspirin, a 300-mg loadingdose of clopidogrel, and unfractionated heparin(70 to 100 U per kilogram of body weight).Glycoprotein IIb/IIIa antagonists were used at theoperators discretion.at discharge: 100 mgof aspirin once daily for an indefinite period, as wellas 75 mg of clopidogrel daily for 12 months.E?	
TAxi (diabetics) (3000)	SES	PES
Tomai (2008) [15]	sirolimus-eluting stent	paclitaxel-eluting stent

a) factorial design with other comparison: triple versus dual antiplatelet therapy

Table 11.2: *Descriptions of participants - drug-eluting stents - sirolimus eluting stent*

Trial	Patients
Sirolimus eluting stent versus bare-metal stent	
DECODE (2005) [1]	Stable or unstable angina in diabetic patients with with up to 2 de novo lesions in up to 2 native coronary vessels

continued...

Trial	Patients	
DIABETES (2005) [2, 3, 4]	De novo lesions in native coronary arteriesin 1, 2, or 3 native vessels with symptoms or objective evidence of ischemia; vessel size smaller than 4.0 mm	
	Inclusion criteria:	**Exclusion criteria:** impaired glucose tolerance without pharmacological treatment, gestational diabetes, or transient hyperglycemia; stenoses located in saphenous bypass, arterial bypass grafting, unprotected left main, or that involved important side branches (2 mm) that should be treated during the procedure; left ventricle ejection fraction 25%; prior treatment with intracoronary brachytherapy or other drug-eluting stent at target site; restenotic lesions; known allergies to aspirin, ticlopidine, and clopidogrel; acute coronary syndromes with persistent ST elevation 72 hours and/or creatine kinase (CK) twice the upper normal limit; nonSTelevation acute coronary syndromes with CK twice the upper normal limit; severe hepatic or renal disease (creatinine clearance 30 mL/min or hepatic enzymes twice the upper normal limit); and life expectancy 1 year.
Ravel (diabetics) (2004) [5]	Sub groups of diabetic patients with de novo native coronary arterylesions 2.5 to 3.5 mm in diameter by visualassessment that could be covered by an 18-mm stent	
SES-SMARt (diabetics) (2005) [6]	Diabetic patients with de novo target lesion <=2.75 mm in diameter in a native coronary artery that could be completely covered by a single stent (maximum length 33 mm)	
SIRIUS (diabetics) (2003) [7, 8]	Sub group of diabetics patients of SIRIUS study	
Sirolimus eluting stent versus paclitaxel eluting stent		
DES-DIABETES (2008) [9, 10]	Diabetic patients with angina pectoris and/or a positive stress test and a native coronary lesion	
	Inclusion criteria: diabetes mellitus, presentedwith angina pectoris, orhad a positive stress test and hadclinically significant angiographicstenosis in a native coronary vesselwith a diameter stenosis50% and visual reference diameter2.5 mm.	**Exclusion criteria:** contraindication to aspirin, clopidogrel, or cilostazol; left main disease (diameter stenosis >=50% by visual estimate); graft vessel disease; left ventricular ejection fraction <30%; recenthistory of hematologic disease or leukocyte count <3,000/mm3 and/or platelet count <100,000/mm3; hepatic dysfunction with asparatate aminotransferase or alanine aminotransferase >3 times the upper normal referencelimit; history of renal dysfunction or serum creatinine level >2.0 mg/dl; serious noncardiac comorbid disease with a life expectancy <1 year; planned bifurcation stenting in the side branch; primary angioplasty for acute myocardialinfarction (AMI) within 24 h

continued...

Trial	Patients	
ISAR-DIABETES (2005) [11]	Diabetic patients. AP or positive stress, no AMI with clinically significant angiographic stenosis in a native coronary vessel	
	Inclusion criteria:	**Exclusion criteria:** acute ST-segment-elevationmyocardial infarction; a target lesion in the left maintrunk; in-stent restenosis; any contraindication tothe use of aspirin, heparin, or clopidogrel
REALITY (diabetics) (2006) [12]		
SIRTAX diabetics (2005) [13, 14]	Sub groups of diabetics patients with either stable angina or an acute coronarysyndrome	
	Inclusion criteria: sub groups of diabetics patients with either stable angina or an acute coronarysyndrome; with at least one lesion with stenosis of at least 50 percent in a vessel with a reference diameter between 2.25 and 4.00 mm that was suitable for stentimplantation	**Exclusion criteria:** allergy to antiplatelet drugs, heparin, stainless steel, contrast agents, sirolimus, or paclitaxel; participation in another coronary-device study; and terminal illness
TAxi (diabetics) (3000)		
Tomai (2008) [15]	Diabetic patient with multiple de novo coronary artery lesions	

Table 11.3: *Design and methodological quality of trials - drug-eluting stents - sirolimus eluting stent*

Trial	Design	Duration	Centre	Primary end-point
Sirolimus eluting stent versus bare-metal stent				
DECODE, 2005 [1] n=83	Parallel groups open	1 year	US, Asia/Pacific NA	Late lumen loss
DIABETES, 2005 [2, 3, 4] n=160	Parallel groups open	9 months	Spanish 4 centres	Late lumen loss
Ravel (diabetics), 2004 [5] n=44	Parallel groups NA	6 months	Europe	
SES-SMARt (diabetics), 2005 [6] n=74	Parallel groups single-blind	8 months inclusion period: Aug 2002 - Dec 2003	Italy 20 centres	Binary restenosis

continued...

Trial	Design	Duration	Centre	Primary endpoint
SIRIUS (diabetics), 2003 [7, 8] n=279	Parallel groups double-blind	12 months	US	
Sirolimus eluting stent versus paclitaxel eluting stent				
DES-DIABETES, 2008 [9, 10] n=400	Factorial plan open confirmatory trial at risk of bias	9 months (1 year) inclusion period: May 2005 - March 2006	Korea 5 centres	in-segment restenosis at 6 months
ISAR-DIABETES, 2005 [11] n=250	Parallel groups open	9 months	Germany 2 centres	Late lumen loss
REALITY (diabetics), 2006 [12] n=379	Parallel groups open	12 months	worldwide	
SIRTAX diabetics, 2005 [13, 14] n=201	Parallel groups single-blind	12 months inclusion period: Apr 2003-May 2004	Switzerland 2 centres	cardiac death, AMI, TLR
TAxi (diabetics), 3000 n=69	Parallel groups open	12 months	Switzerland	
Tomai, 2008 [15] n=120	Cross over NA	8 months	Italy Single center	in-stent late luminal loss

Table 11.4: *Trial characteristics - drug-eluting stents - sirolimus eluting stent(continued...)*

Trial	molcule	age	Female (%)	male (%)	unstable angina (%)	history of MI (%)	diabetes (%)	Smoker (%)
Sirolimus eluting stent versus bare-metal stent								
DECODE, 2005 [1]		60	33%				100%	
DIABETES, 2005 [2, 3, 4]		67	38%				100%	
Ravel (diabetics), 2004 [5]								
SES-SMARt (diabetics), 2005 [6]								
SIRIUS (diabetics), 2003 [7, 8]								
Sirolimus eluting stent versus paclitaxel eluting stent								
DES-DIABETES, 2008 [9, 10]		61y		58%	36.75%		100%	
ISAR-DIABETES, 2005 [11]		68	27%				100%	
REALITY (diabetics), 2006 [12]								
SIRTAX diabetics, 2005 [13, 14]								
TAxi (diabetics), 3000								

Table 11.5: *Trial characteristics - drug-eluting stents - sirolimus eluting stent(continued...)*

Trial	restenotic lesion	lesions in a bypass graft	bifurcated lesions	left main coronary artery disease	totally occluded lesions	ostial lesion	LAD (%)	RCA (%)
Sirolimus eluting stent versus bare-metal stent								
DECODE, 2005 [1]								
DIABETES, 2005 [2, 3, 4]	0%	0%	0%	0%	0%	0%		
Ravel (diabetics), 2004 [5]	0%	0%						
SES-SMARt (diabetics), 2005 [6]	0%	0%						
SIRIUS (diabetics), 2003 [7, 8]								
Sirolimus eluting stent versus paclitaxel eluting stent								
DES-DIABETES, 2008 [9, 10]							60%	26.75%
ISAR-DIABETES, 2005 [11]	0%	0%		0%				
REALITY (diabetics), 2006 [12]								
SIRTAX diabetics, 2005 [13, 14]								
TAxi (diabetics),								

Table 11.6: *Trial characteristics - drug-eluting stents - sirolimus eluting stent*

Trial	LCx (%)	lesion length (mm)	reference-vessel diameter	QCA follow-up duration	%QCA follow-up
Sirolimus eluting stent versus bare-metal stent					
DECODE, 2005 [1]					
DIABETES, 2005 [2, 3, 4]		14.9	2.34		
Ravel (diabetics), 2004 [5]					
SES-SMARt (diabetics), 2005 [6]					
SIRIUS (diabetics), 2003 [7, 8]					
Sirolimus eluting stent versus paclitaxel eluting stent					
DES-DIABETES, 2008 [9, 10]	13.25%	26.5mm	2.8 mm	6 months	
ISAR-DIABETES, 2005 [11]					
REALITY (diabetics), 2006 [12]					
SIRTAX diabetics, 2005 [13, 14]					
TAxi (diabetics), 3000					

11.2 Meta-analysis results

The results are detailed in table 11.7 (page 87). This table is followed by the Forest's plot corresponding to each endpoint.

Sirolimus eluting stent versus bare-metal stent

Only one of the 5 studies eligible for this comparison provided data on **myocardial infarction (fatal and non fatal)**. No statistically significant difference between the groups was found in myocardial infarction (fatal and non fatal), with a RR of 0.78 (95% CI 0.15 to 3.97, p=0.7605).
A total of 2 of the 5 studies eligible for this comparison provided data on **MACE**. The analysis detected a statistically significant difference in favor of sirolimus eluting stent in MACE, with a RR of 0.40 (95% CI 0.23 to 0.69, p=0.0000). No heterogeneity was detected (p = 0.2910, I^2 = 0.10%).
Only one of the 5 studies eligible for this comparison provided data on **2 yr MACE**. The analysis detected a statistically significant difference in favor of sirolimus eluting stent in 2 yr MACE, with a RR of 0.31 (95% CI 0.16 to 0.59, p=0.0000).
Only one of the 5 studies eligible for this comparison provided data on **2 yr TLR**. The analysis detected a statistically significant difference in favor of sirolimus eluting stent in 2 yr TLR, with a RR of 0.22 (95% CI 0.10 to 0.50, p=0.0000).
A total of 4 of the 5 studies eligible for this comparison provided data on **target lesion revascularisation**. The analysis detected a statistically significant difference in favor of sirolimus eluting stent in target lesion revascularisation, with a RR of 0.25 (95% CI 0.11 to 0.54, p=0.0000). No heterogeneity was detected (p = 0.0790, I^2 = 0.56%).
A total of 3 of the 5 studies eligible for this comparison provided data on **angiographic restenosis**. The analysis detected a statistically significant difference in favor of sirolimus eluting stent in angiographic restenosis, with a RR of 0.16 (95% CI 0.08 to 0.31, p=0.0000). No heterogeneity was detected (p = 0.3037, I^2 = 0.16%).
A total of 2 of the 5 studies eligible for this comparison provided data on **all cause death**. When pooled together, there was no statistically significant difference between the groups in all cause death, with a RR of 0.30 (95% CI 0.03 to 2.87, p=0.2945). No heterogeneity was detected (p = 0.4499, I^2 = 0.00%).

Sirolimus eluting stent versus paclitaxel eluting stent

A total of 2 of the 6 studies eligible for this comparison provided data on **myocardial infarction (fatal and non fatal)**. When pooled together, there was no statistically significant difference between the groups in myocardial infarction (fatal and non fatal), with a RR of 1.50 (95% CI 0.43 to 5.27, p=0.5269). No heterogeneity was detected (p = 0.7470, I^2 = 0.00%).
Only one of the 6 studies eligible for this comparison provided data on **cardiac death**. No statistically significant difference between the groups was found in cardiac death, with a RR of 0.50 (95% CI 0.02 to 14.82, p=0.6885).
A total of 2 of the 6 studies eligible for this comparison provided data on **MACE**. When pooled together, there was no statistically significant difference between the groups in MACE, with a RR of 0.56 (95% CI 0.09 to 3.50, p=0.5384). No heterogeneity was detected (p = 0.0703, I^2 = 0.69%).
Only one of the 6 studies eligible for this comparison provided data on **target-vessel revascularization**. No statistically significant difference between the groups was found in target-vessel revascularization, with a RR of 0.44 (95% CI 0.18 to 1.04, p=0.0614).
A total of 5 of the 6 studies eligible for this comparison provided data on **target lesion revascularisation**. When pooled together, there was no statistically significant difference between the groups in target lesion revascularisation, with a RR of 0.61 (95% CI 0.31 to 1.20, p=0.1518). No heterogeneity was detected (p = 0.0763, I^2 = 0.53%).

Only one of the 6 studies eligible for this comparison provided data on **CABG**. No statistically significant difference between the groups was found in CABG, with a RR of 1.00 (95% CI 0.14 to 7.03, p=1.0000).
Only one of the 6 studies eligible for this comparison provided data on **in-lesion binary restenosis**. The analysis detected a statistically significant difference in favor of sirolimus eluting stent in in-lesion binary restenosis, with a RR of 0.21 (95% CI 0.09 to 0.51, p=0.0000).
Only one of the 6 studies eligible for this comparison provided data on **angiographic restenosis**. The analysis detected a statistically significant difference in favor of sirolimus eluting stent in angiographic restenosis, with a RR of 0.22 (95% CI 0.10 to 0.48, p=0.0000).
A total of 2 of the 6 studies eligible for this comparison provided data on **all cause death**. When pooled together, there was no statistically significant difference between the groups in all cause death, with a RR of 0.64 (95% CI 0.20 to 2.07, p=0.4597). No heterogeneity was detected (p = 0.8759, I^2 = 0.00%).

Table 11.7: *Results details - drug-eluting stents - sirolimus eluting stent*

Comparison Endpoint	Effect	95% CI	p ass	p het	k	n
sirolimus eluting stent versus bare-metal stent						
myocardial infarction (fatal and non fatal)	RR=0.78	[0.15;3.97]	0.7605	1.0000 (I^2=0.00)	1	74
MACE	RR=0.40	[0.23;0.69]	0.0000	0.2910 (I^2=0.10)	2	234
2 yr MACE	RR=0.31	[0.16;0.59]	0.0000	1.0000 (I^2=0.00)	1	158
2 yr TLR	RR=0.22	[0.10;0.50]	0.0000	1.0000 (I^2=1.00)	1	158
target lesion revascularisation	RR=0.25	[0.11;0.54]	0.0000	0.0790 (I^2=0.56)	4	361
stent thrombosis (any, end of follow up)	RR=0.70	[0.09;5.27]	0.7318	0.8741 (I^2=0.00)	2	157
sub acute stent thrombosis (1-30 days)	RR=0.51	[0.02;15.07]	0.6986	1.0000 (I^2=0.00)	1	158
late stent thrombosis (31days - 1year)	RR=0.51	[0.02;15.07]	0.6986	1.0000 (I^2=0.00)	1	158
angiographic restenosis	RR=0.16	[0.08;0.31]	0.0000	0.3037 (I^2=0.16)	3	278
all cause death	RR=0.30	[0.03;2.87]	0.2945	0.4499 (I^2=0.00)	2	157
sirolimus eluting stent versus paclitaxel eluting stent						
myocardial infarction (fatal and non fatal)	RR=1.50	[0.43;5.27]	0.5269	0.7470 (I^2=0.00)	2	650
cardiac death	RR=0.50	[0.02;14.82]	0.6885	1.0000 (I^2=0.00)	1	400
MACE	RR=0.56	[0.09;3.50]	0.5384	0.0703 (I^2=0.69)	2	469
target-vessel revascularization	RR=0.44	[0.18;1.04]	0.0614	1.0000 (I^2=0.00)	1	400
target lesion revascularisation	RR=0.61	[0.31;1.20]	0.1518	0.0763 (I^2=0.53)	5	1299
CABG	RR=1.00	[0.14;7.03]	1.0000	1.0000 (I^2=0.00)	1	400

continued...

Comparison Endpoint	Effect	95% CI	p ass	p het	k	n
in-lesion binary restenosis	RR=0.21	[0.09;0.51]	0.0000	1.0000 (I^2=1.00)	1	400
stent thrombosis (any, end of follow up)	RR=0.64	[0.07;6.30]	0.7039	0.3741 (I^2=0.00)	2	650
4y stent thrombosis (ARC)	RR=0.25	[0.01;5.49]	0.3791	1.0000 (I^2=0.00)	1	250
acute stent thrombosis ($<$=24h)	RR=2.00	[0.07;59.28]	0.6885	1.0000 (I^2=0.00)	1	400
sub acute stent thrombosis (1-30 days)	RR=1.00	[0.02;50.15]	1.0000	1.0000 (I^2=0.00)	1	400
late stent thrombosis (31days - 1year)	RR=0.45	[0.13;1.54]	0.2023	0.7437 (I^2=0.00)	4	1230
angiographic restenosis	RR=0.22	[0.10;0.48]	0.0000	1.0000 (I^2=0.00)	1	400
all cause death	RR=0.64	[0.20;2.07]	0.4597	0.8759 (I^2=0.00)	2	650

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

Figure 11.1: *Forest's plot for myocardial infarction (fatal and non fatal)*

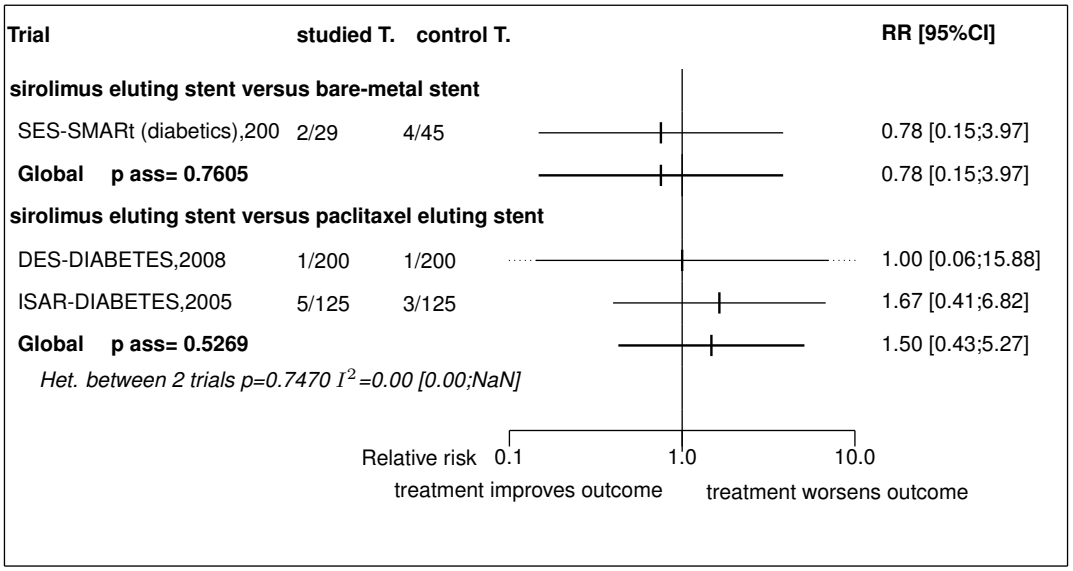


Figure 11.2: *Forest's plot for cardiac death*

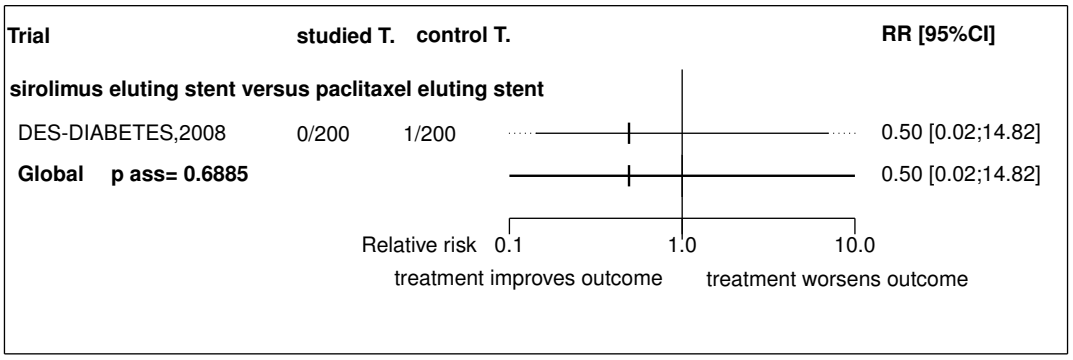


Figure 11.3: *Forest's plot for MACE*

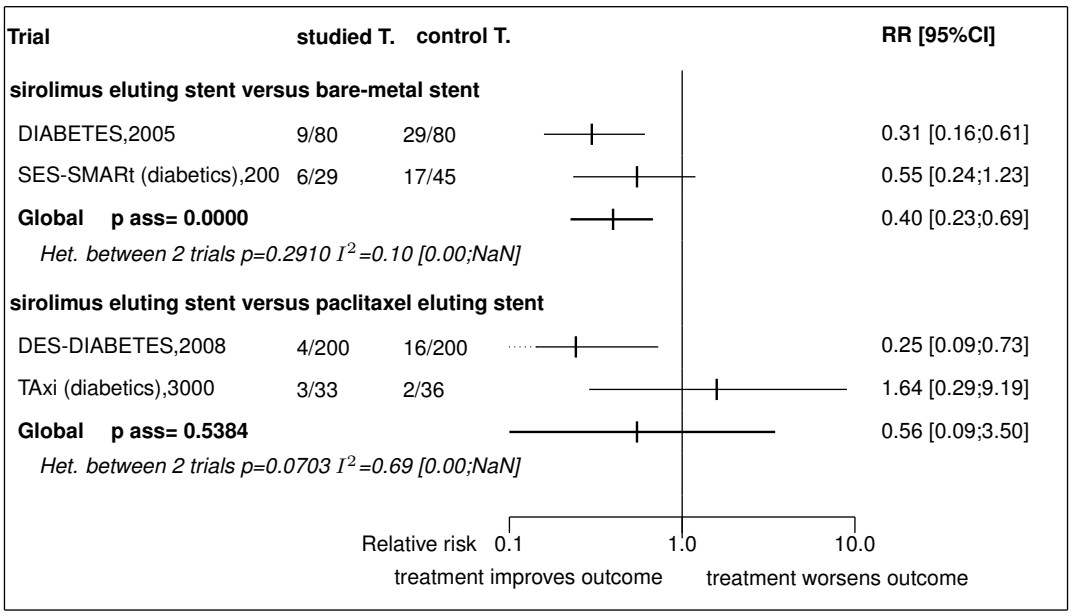


Figure 11.4: *Forest's plot for 2 yr MACE*

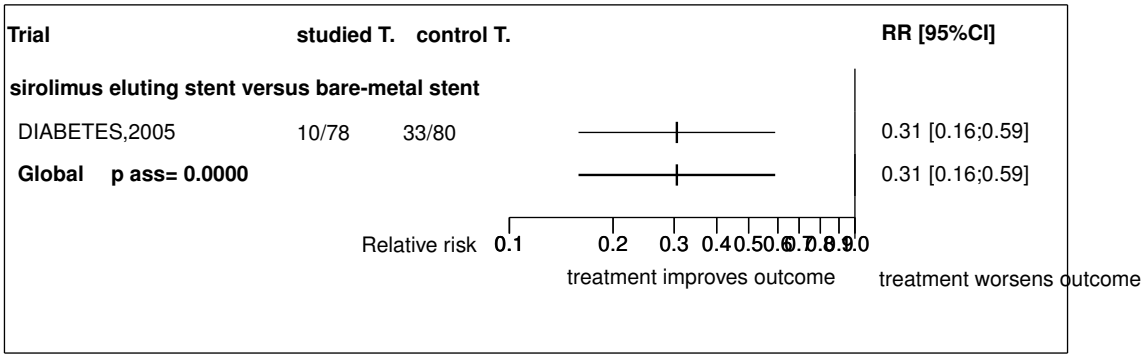


Figure 11.5: *Forest's plot for target-vessel revascularization*

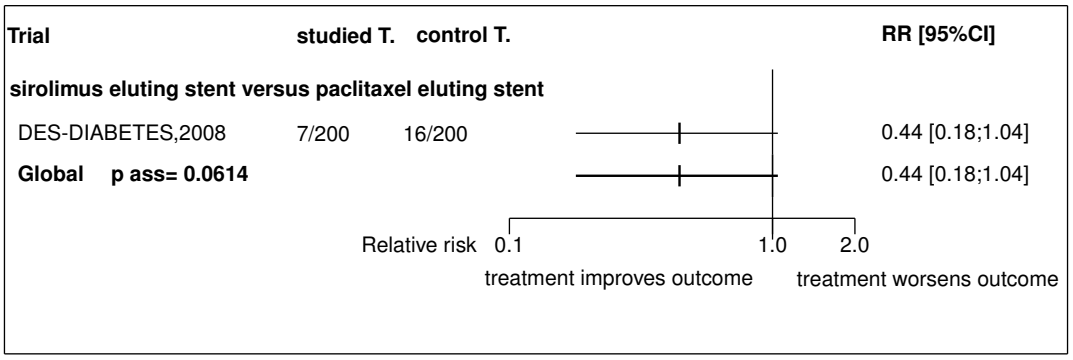


Figure 11.6: *Forest's plot for 2 yr TLR*

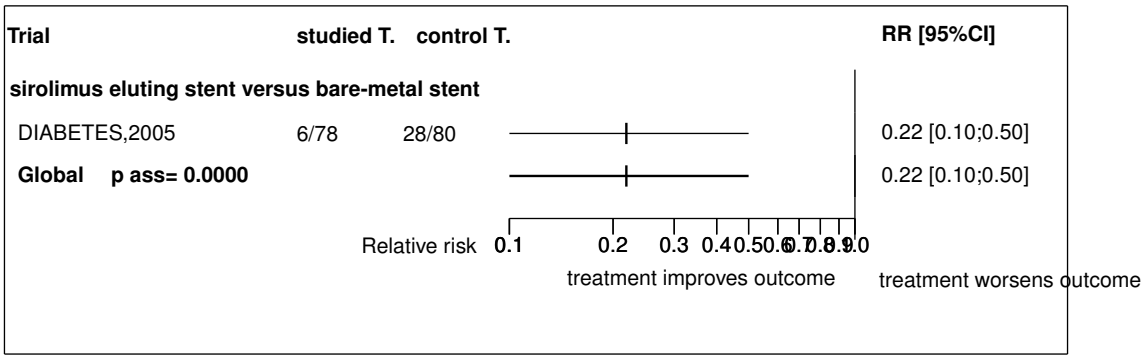


Figure 11.7: *Forest's plot for target lesion revascularisation*

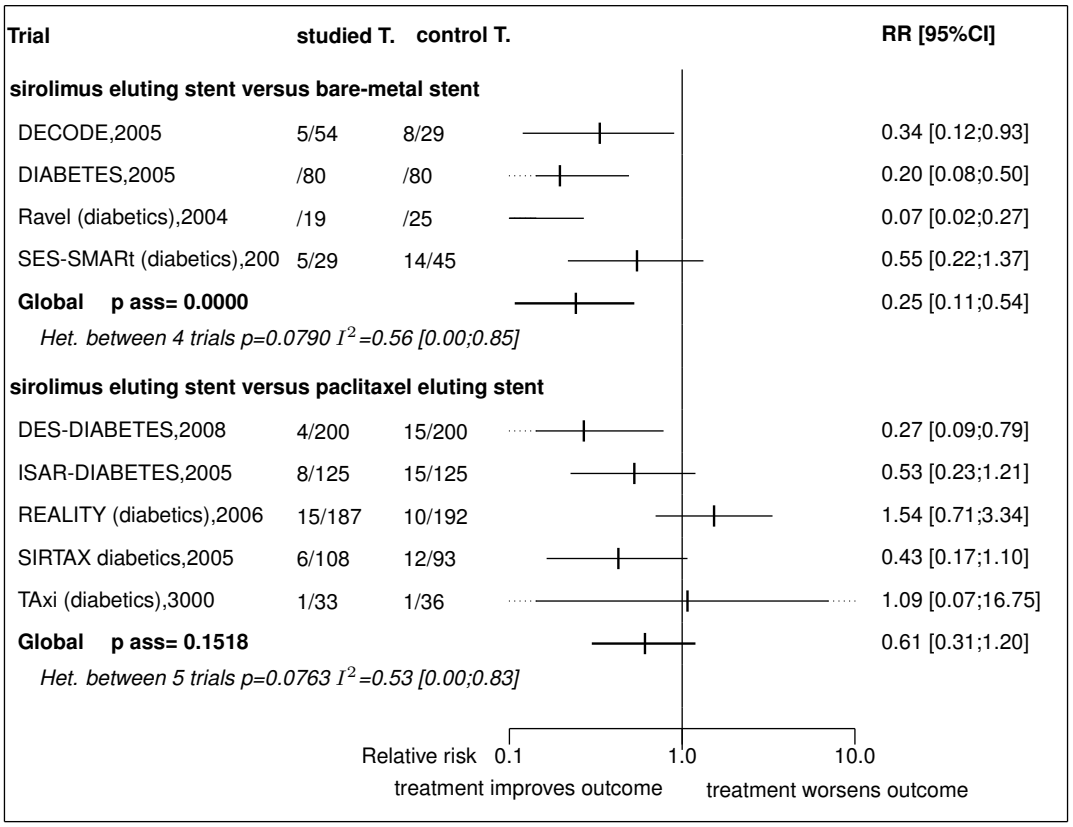


Figure 11.8: *Forest's plot for CABG*

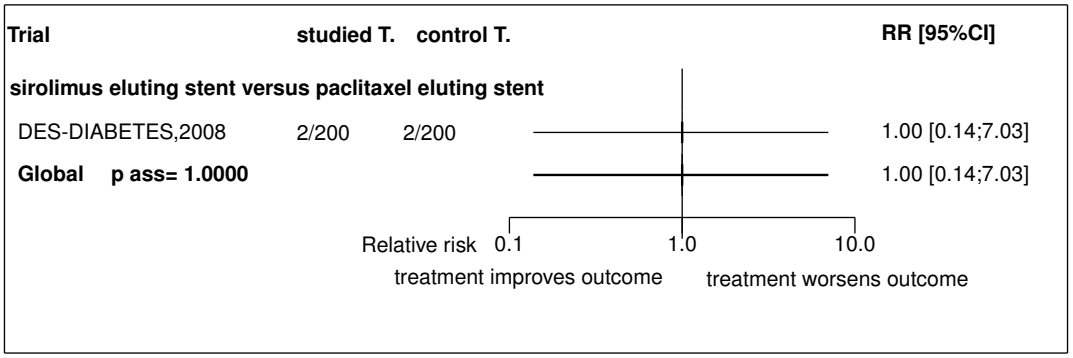


Figure 11.9: *Forest's plot for in-lesion binary restenosis*

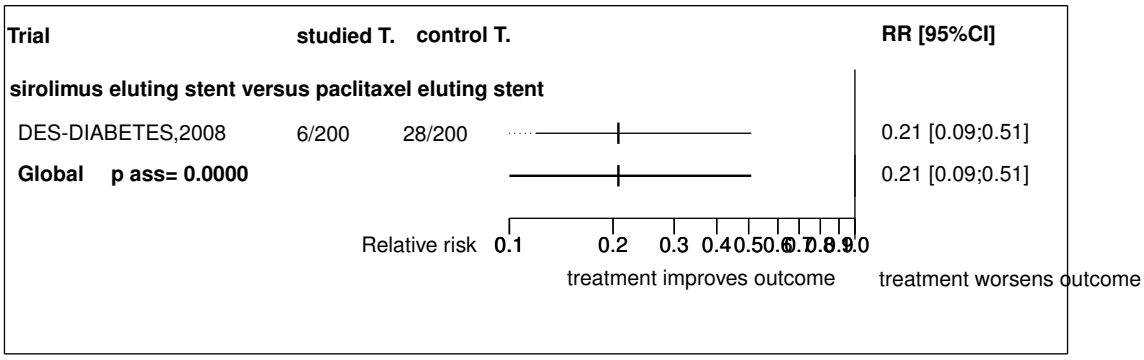


Figure 11.10: *Forest's plot for stent thrombosis (any, end of follow up)*

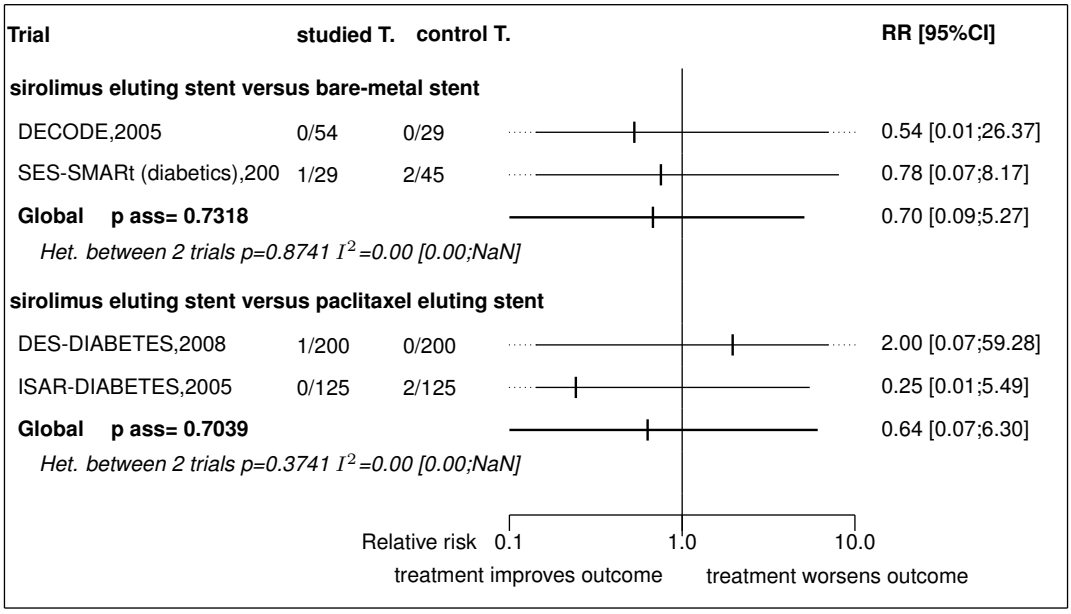


Figure 11.11: *Forest's plot for 4y stent thrombosis (ARC)*

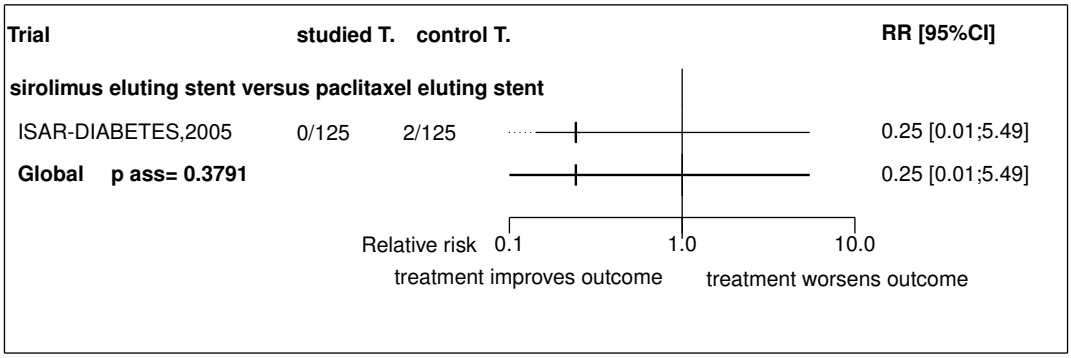


Figure 11.12: *Forest's plot for acute stent thrombosis (<=24h)*

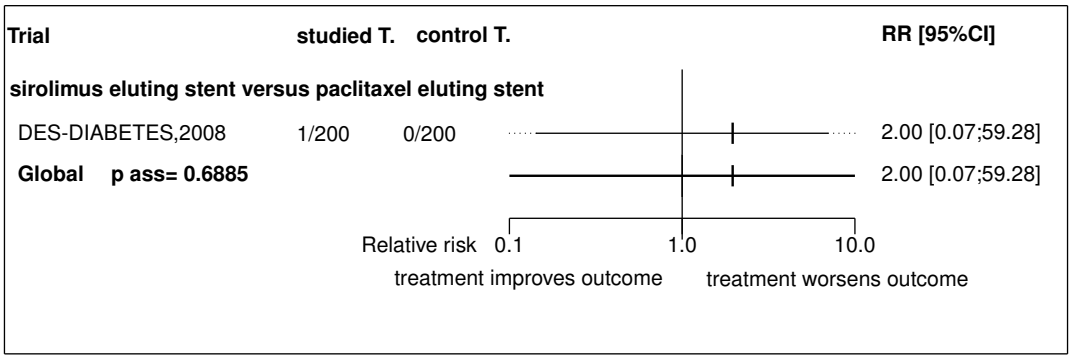


Figure 11.13: *Forest's plot for sub acute stent thrombosis (1-30 days)*

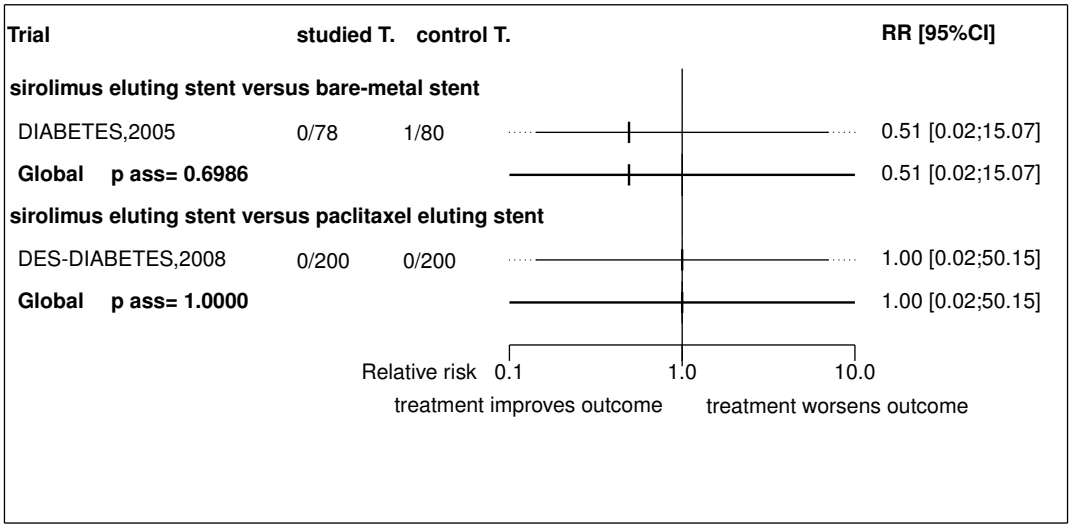


Figure 11.14: *Forest's plot for late stent thrombosis (31days - 1year)*

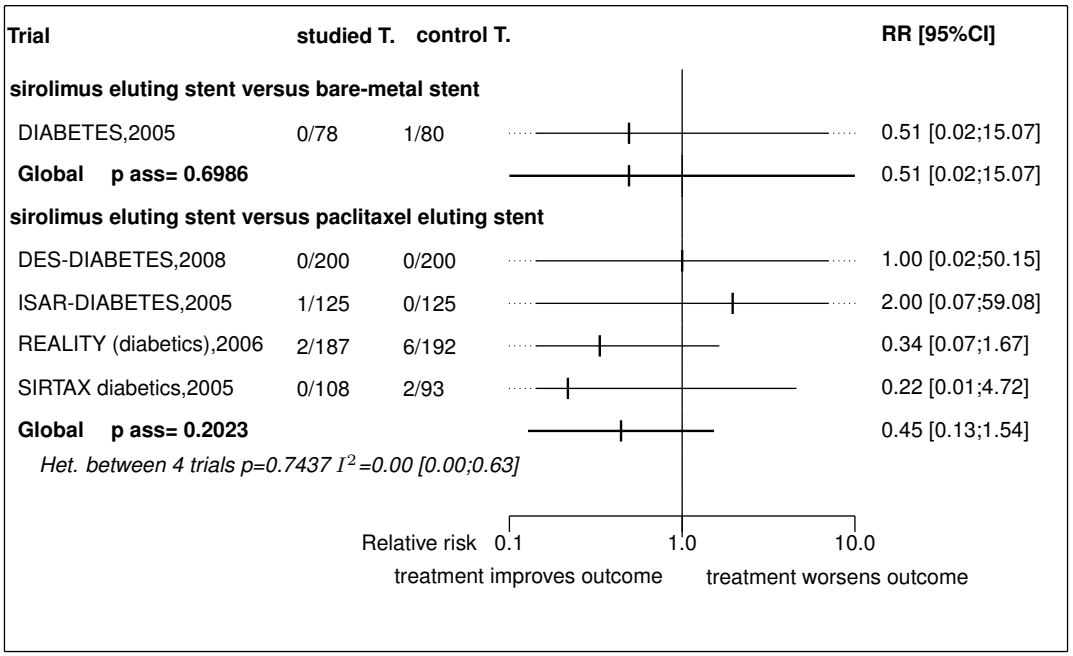


Figure 11.15: *Forest's plot for angiographic restenosis*

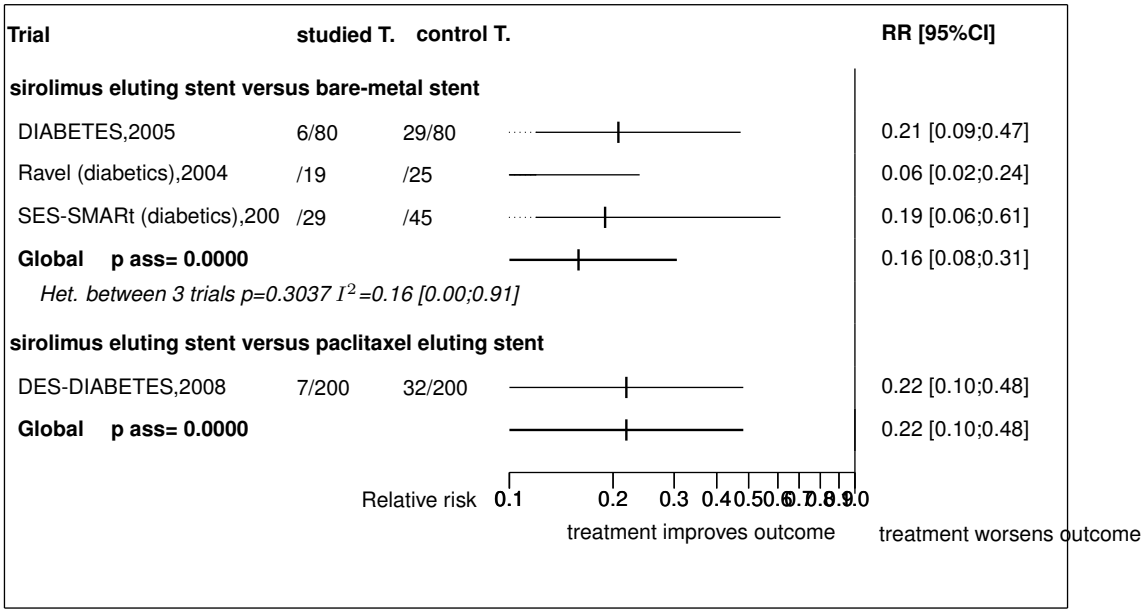
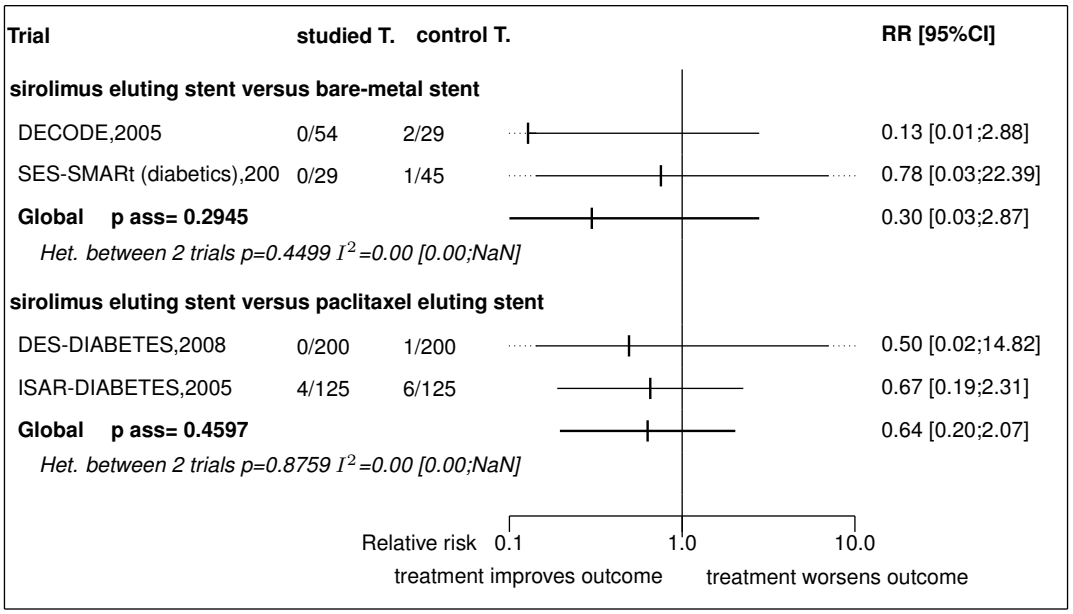


Figure 11.16: *Forest's plot for all cause death*



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11.3 Individual trial summaries

Table 11.8: *DECODE, 2005 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=83 (54 vs. 29) **Follow-up duration:** 1 year **Study design:** Randomized controlled trial Parallel groups Open US, Asia/Pacific, NA	Stable or unstable angina in diabetic patients with with up to 2 de novo lesions in up to 2 native coronary vessels	**Studied treatment:** CYPHER (Up to 3 stents per patient were allowed) **Control treatment:** Bx VELOCITY (Up to 3 stents per patient were allowed) **Concomittant treat.:**Life-long Aspirin and 12 weeks post-procedure Plavix	

Reference

Chan C, Zambahari R, Kaul U, Cohen SA, Buchbinder M. Outcomesin diabetic patients with multivessel disease and long lesions: resultsfrom the DECODE study. Am J Cardiol 2005; 96 (suppl 7A): 31H

Table 11.9: *DIABETES, 2005 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=160 (80 vs. 80) **Follow-up duration:** 9 months **Study design:** Randomized controlled trial Parallel groups Open Spanish, 4 centres	De novo lesions in native coronary arteriesin 1, 2, or 3 native vessels with symptoms or objective evidence of ischemia; vessel size smaller than 4.0 mm **Exclusion criteria:** impaired glucose tolerance without pharmacological treatment, gestational diabetes, or transient hyperglycemia; stenoses located in saphenous bypass, arterial bypass grafting, unprotected left main, or that involved important side branches (2 mm) that should be treated during the procedure; left ventricle ejection fraction 25%; prior treatment with intracoronary brachytherapy or other drug-eluting stent at target site; restenotic lesions; known allergies to aspirin, ticlopidine, and clopidogrel; acute coronary syndromes with persistent ST elevation 72 hours and/or creatine kinase (CK) twice t	**Studied treatment:** Cypher **Control treatment:** Bx Velocity/Sonic **Concomittant treat.:**NA	

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Jimnez-Quevedo P, Sabat M, Angiolillo DJ, Alfonso F, Hernndez-Antoln R, SanMartn M, Gmez-Hospital JA, Bauelos C, Escaned J, Moreno R, Fernndez C, Fernndez-Avils F, Macaya C. Long-term clinical benefit of sirolimus-eluting stent implantation in diabetic patients with de novo coronary stenoses: long-term results of the DIABETES trial. Eur Heart J 2007;28:1946-52 [PMID=17562666]
Maeng M, Jensen LO, Galloe AM, Thayssen P, Christiansen EH, Hansen KN, Helqvist S, Botker HE, Lassen JF, Thuesen L. . Am J Cardiol 2009 Feb 1;103:345-9 [PMID=19166687]

Table 11.10: *Ravel (diabetics), 2004 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=44 (19 vs. 25) **Follow-up duration:** 6 months **Study design:** Randomized controlled trial Parallel groups NA Europe	Sub groups of diabetic patients with de novo native coronary arterylesions 2.5 to 3.5 mm in diameter by visualassessment that could be covered by an 18-mm stent	**Studied treatment:** coated Bx velocity **Control treatment:** Bx VELOCITY	

Reference

Abizaid A, Costa MA, Blanchard D, Albertal M, Eltchaninoff H, Guagliumi G, Geert-Jan L, Abizaid AS, Sousa AG, Wuelfert E, Wietze L, Sousa JE, Serruys PW, Morice MC. Sirolimus-eluting stents inhibit neointimal hyperplasia in diabetic patients. Insights from the RAVEL Trial. Eur Heart J 2004;25:107-12 [PMID=14720526]

Table 11.11: *SES-SMARt (diabetics), 2005 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=74 (29 vs. 45) **Follow-up duration:** 8 months **Study design:** Randomized controlled trial Parallel groups Single-blind Italy, 20 centres **Inclusion period:** Aug 2002 - Dec 2003	Diabetic patients with de novo target lesion <=2.75 mm in diameter in a native coronary artery that could be completely covered by a single stent (maximum length 33 mm)	**Studied treatment:** Cypher **Control treatment:** Bx Sonic **Concomittant treat.:**Clopidogrel 2 months	

Reference

Ortolani P, Ardissino D, Cavallini C, Bramucci E, Indolfi C, Aquilina M, Marzocchi A. Effect of sirolimus-eluting stent in diabetic patients with small coronary arteries (a SES-SMART substudy). Am J Cardiol 2005;96:1393-8 [PMID=16275185]

Table 11.12: *SIRIUS (diabetics), 2003 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=279 (131 vs. 148) **Follow-up duration:** 12 months **Study design:** Randomized controlled trial Parallel groups Double-blind US	Sub group of diabetics patients of SIRIUS study	**Studied treatment:** SES **Control treatment:** BMS **Concomittant treat.:**oral aspirin (325 mg daily) and oral clopidogrel(a loading dose of 300 to 375 mg 24 hours beforethe procedure and then 75 mg daily for threemonths). During the procedure, intravenous heparinboluses were administered. The use of intravenousglycoprotein IIb/IIIa inhibitors was at the discretionof the physician.	

References

Moses JW, Leon MB, Popma JJ, Fitzgerald PJ, Holmes DR, O'Shaughnessy C, Caputo RP, Kereiakes DJ, Williams DO, Teirstein PS, Jaeger JL, Kuntz RE. Sirolimus-eluting stents versus standard stents in patients with stenosis in a native coronary artery. N Engl J Med 2003;349:1315-23 [PMID=14523139]
Weisz G, Moses JW, Teirstein PS, Holmes DR Jr, Raizner AE, Satler LF, Mishkel G, Wilensky RL, Wang P, Kuntz RE, Popma JJ, Leon MB. Safety of sirolimus-eluting stenting and its effect on restenosis in patients with unstable angina pectoris (a SIRIUS substudy). Am J Cardiol 2007 Apr 15;99:1044-50 [PMID=17437725]

Table 11.13: *DES-DIABETES, 2008 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=400 (200 vs. 200) **Follow-up duration:** 9 months (1 year) **Study design:** Randomized controlled trial Factorial plan Open Confirmatory trial at risk of bias Korea, 5 centres **Inclusion period:** May 2005 - March 2006	Diabetic patients with angina pectoris and/or a positive stress test and a native coronary lesion **Inclusion criteria:** diabetes mellitus, presentedwith angina pectoris, orhad a positive stress test and hadclinically significant angiographicstenosis in a native coronary vesselwith a diameter stenosis50% and visual reference diameter2.5 mm. **Exclusion criteria:** contraindication to aspirin, clopidogrel, or cilostazol; left main disease (diameter stenosis >=50% by visual estimate); graft vessel disease; left ventricular ejection fraction <30%; recenthistory of hematologic disease or leukocyte count <3,000/mm3 and/or platelet count <100,000/mm3; hepatic dysfunction with asparatate aminotransferase or alanine aminotransferase >3 times the upper normal referencelimit; history of renal dysfunction or serum creatinine level >2.0 mg/dl; serious noncardiac comorbid disease with a life expe	**Studied treatment:** sirolimus-eluting stent **Control treatment:** paclitaxel-elutingstent **note:** factorial design with other comparison: triple versus dual antiplatelet therapy	

References

Lee SW, Park SW, Kim YH, Yun SC, Park DW, Lee CW, Hong MK, Rhee KS, Chae JK, Ko JK, Park JH, Lee JH, Choi SW, Jeong JO, Seong IW, Cho YH, Lee NH, Kim JH, Chun KJ, Kim HS, Park SJ. . J Am Coll Cardiol 2008 Aug 26;52:727-33 [PMID=18718419]
Lee SW, Park SW, Kim YH, Yun SC, Park DW, Lee CW, Hong MK, Rhee KS, Chae JK, Ko JK, Park JH, Lee JH, Choi SW, Jeong JO, Seong IW, Cho YH, Lee NH, Kim JH, Chun KJ, Kim HS, Park SJ. A randomized comparison of sirolimus- versus paclitaxel-eluting stent implantation in patients with diabetes mellitus 2-year clinical outcomes of the DES-DIABETES trial. J Am Coll Cardiol 2009 Mar 3;53:812-3 [PMID=19245976]

Table 11.14: *ISAR-DIABETES, 2005 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=250 (125 vs. 125) **Follow-up duration:** 9 months **Study design:** Randomized controlled trial Parallel groups Open Germany, 2 centres	Diabetic patients. AP or positive stress, no AMI with clinically significant angiographic stenosis in a native coronary vessel **Exclusion criteria:** acute ST-segment-elevationmyocardial infarction; a target lesion in the left maintrunk; in-stent restenosis; any contraindication tothe use of aspirin, heparin, or clopidogrel	**Studied treatment:** Taxus **Control treatment:** Cypher	

Reference

Dibra A, Kastrati A, Mehilli J, Pache J, Schhlen H, von Beckerath N, Ulm K, Wessely R, Dirschinger J, Schmig A. Paclitaxel-eluting or sirolimus-eluting stents to prevent restenosis in diabetic patients. N Engl J Med 2005;353:663-70 [PMID=16105990]

Table 11.15: *REALITY (diabetics), 2006 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=379 (187 vs. 192) **Follow-up duration:** 12 months **Study design:** Randomized controlled trial Parallel groups Open worldwide		**Studied treatment:** SES **Control treatment:** PES	
Reference Windecker S. Cypher is preferred in diabetics. 2006 Transcatheter Cardiovascular Therapeutics Annual Meetings			

Table 11.16: *SIRTAX diabetics, 2005 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=201 (108 vs. 93) **Follow-up duration:** 12 months **Study design:** Randomized controlled trial Parallel groups Single-blind Switzerland, 2 centres **Inclusion period:** Apr 2003-May 2004	Sub groups of diabetics patients with either stable angina or an acute coronarysyndrome **Inclusion criteria:** Sub groups of diabetics patients with either stable angina or an acute coronarysyndrome; with at least one lesion with stenosis of at least 50 percent in a vessel with a reference diameter between 2.25 and 4.00 mm that was suitable for stentimplantation **Exclusion criteria:** allergy to antiplatelet drugs, heparin, stainless steel, contrast agents, sirolimus, or paclitaxel; participation in another coronary-device study; and terminal illness	**Studied treatment:** Cypher available in diameters of 2.25 to3.50 mm and in lengths of 8 to 33 mm **Control treatment:** Taxus available in diameters of 2.25 to3.50 mm and in lengths of 8 to 32 mm. **Concomittant treat.:**for procedure: 100 mg of aspirin, a 300-mg loadingdose of clopidogrel, and unfractionated heparin(70 to 100 U per kilogram of body weight).Glycoprotein IIb/IIIa antagonists were used at theoperators discretion.at discharge: 100 mgof aspirin once daily for an indefinite period, as wellas 75 mg of clopidogrel daily for 12 months.E?	

References

Togni M, Eber S, Widmer J, Billinger M, Wenaweser P, Cook S, Vogel R, Seiler C, Eberli FR, Maier W, Corti R, Roffi M, Lscher TF, Garachemani A, Hess OM, Wandel S, Meier B, Jni P, Windecker S. Impact of vessel size on outcome after implantation of sirolimus-eluting and paclitaxel-eluting stents: a subgroup analysis of the SIRTAX trial. J Am Coll Cardiol 2007;50:1123-31 [PMID=17868802]

Windecker S, Remondino A, Eberli FR, Jni P, Rber L, Wenaweser P, Togni M, Billinger M, TIler D, Seiler C, Roffi M, Corti R, Stsch G, Maier W, Lscher T, Hess OM, Egger M, Meier B. Sirolimus-eluting and paclitaxel-eluting stents for coronary revascularization. N Engl J Med 2005;353:653-62 [PMID=16105989]

Table 11.17: *TAxi (diabetics), 3000 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=69 (33 vs. 36) **Follow-up duration:** 12 months **Study design:** Randomized controlled trial Parallel groups Open Switzerland		**Studied treatment:** SES **Control treatment:** PES	
Reference			

Table 11.18: *Tomai, 2008 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=120 (60 vs. 60) **Follow-up duration:** 8 months **Study design:** Randomized controlled trial Cross over NA Italy, Single center	Diabetic patient with multiple de novo coronary artery lesions	**Studied treatment:** sirolimus-eluting stent **Control treatment:** paclitaxel-eluting stent	

Reference

Tomai F, Reimers B, De Luca L, Galassi AR, Gaspardone A, Ghini AS, Ferrero V, Favero L, Gioffr G, Prati F, Tamburino C, Ribichini F,. Head-to-head comparison of sirolimus- and paclitaxel-eluting stent in the same diabetic patient with multiple coronary artery lesions: a prospective, randomized, multicenter study. Diabetes Care 2008;31:15-9 [PMID=17909090]

12 Global meta-analysis: all drug-eluting stents

12.1 Global meta-analysis: all drug-eluting stents versus bare-metal stent

Table 12.1: *All drug-eluting stentsversus bare-metal stent*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n
myocardial infarction (fatal and non fatal)	RR=0.78	0.15;3.97	0.7605	1.0000 (0.00)	1	74
MACE	RR=0.40	0.23;0.69	0.0000	0.2910 (0.10)	2	234
2 yr MACE	RR=0.31	0.16;0.59	0.0000	1.0000 (0.00)	1	158
2 yr TLR	RR=0.22	0.10;0.50	0.0000	1.0000 (1.00)	1	158
target lesion revascularisation	RR=0.31	0.20;0.48	0.0000	0.1167 (0.39)	8	1195
angiographic restenosis	RR=0.16	0.10;0.26	0.0000	0.7661 (0.00)	6	763
all cause death	RR=0.30	0.03;2.87	0.2945	0.4499 (0.00)	2	157

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

12.2 Global meta-analysis: all drug-eluting stents versus paclitaxel eluting stent

Table 12.2: *All drug-eluting stentsversus paclitaxel eluting stent*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n
myocardial infarction (fatal and non fatal)	RR=1.50	0.43;5.27	0.5269	0.7470 (0.00)	2	650
cardiac death	RR=0.50	0.02;14.82	0.6885	1.0000 (0.00)	1	400
MACE	RR=0.79 [1]	0.24;2.59	0.7020	0.0197 (0.75) †	3	924
target-vessel revascularization	RR=0.44	0.18;1.04	0.0614	1.0000 (0.00)	1	400
target lesion revascularisation	RR=0.76 [2]	0.39;1.47	0.4147	0.0139 (0.65) †	6	1754
CABG	RR=1.00	0.14;7.03	1.0000	1.0000 (0.00)	1	400
in-lesion binary restenosis	RR=0.21	0.09;0.51	0.0000	1.0000 (1.00)	1	400

continued...

[1] with a random model ($\tau^2 = NaN$). The results with a fixed effect model was RRFE=1.02 95% CI 0.66;1.58
[2] with a random model ($\tau^2 = NaN$). The results with a fixed effect model was RRFE=0.88 95% CI 0.61;1.26

Endpoint	Effect	95% CI	p ass	p het	k	n
angiographic restenosis	RR=0.22	0.10;0.48	0.0000	1.0000 (0.00)	1	400
all cause death	RR=0.64	0.20;2.07	0.4597	0.8759 (0.00)	2	650

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

12.3 Global meta-analysis: all drug-eluting stents versus sirolimus eluting stent

Table 12.3: *All drug-eluting stentsversus sirolimus eluting stent*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

12.4 Global meta-analysis: all drug-eluting stents versus sirolimus ES

Table 12.4: *All drug-eluting stentsversus sirolimus ES*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

13 Ongoing studies of drug-eluting stents

A total of 3 ongoing studies were still ongoing at the date of this report. A list of these ongoing studies with a brief description is given table 13.1.

Table 13.1: *Ongoing studies for drug-eluting stents*

Study	Description
DIABEDES IV NCT00552994	Cypher select plus **vs.** Xience V diabetic patients
Lipsia-Yukon-DM NCT00368953	Yukon Choice stent system **vs.** Taxus Libert stent system Patients With Diabetes Mellitus

continued...

Study	Description
PEPCAD IV NCT00462631	Paclitaxel-eluting PTCA-balloon dilation (SeQuentTM Please) followed by cobalt-chromium stent (CoroflexTM Blue) deployment **vs.** Taxus Libert patients with diabetes mellitus

14 Excluded studies for drug-eluting stents

A total of studies were not eligible for this systematic review. A list of these excluded studies with the reason of their exclusion is given table 14.1.

Table 14.1: *Excluded studies of drug-eluting stents*

Study	Exclusion reason
Kirtane (pooled Taxus diabetic patients) (2008) [1]	
pooled SIRIUS (diabetics) (0) [2]	

References

[1] Kirtane AJ, Ellis SG, Dawkins KD, Colombo A, Grube E, Popma JJ, Fahy M, Leon MB, Moses JW, Mehran R, Stone GW,. Paclitaxel-eluting coronary stents in patients with diabetes mellitus: pooled analysis from 5 randomized trials. J Am Coll Cardiol 2008;51:708-15. [PMID=18279734]

[2] Schampaert E. Sirolimus-eluting stents in diabetics: SIRIUS, C-SIRIUSand E-SIRIUS. TCT.

Part III

PCI

15 Overview of PCI

15.1 Included trials

A total of 3 randomized comparisons which enrolled 2410 patients were identified. In all, 2 randomized comparisons concerned PCI with drug-eluting stents and one stent.
The detailed descriptions of trials and meta-analysis results is given in section 16 (page 120) for PCI with drug-eluting stents and in section 17 (page 130) for stent.

The average study size was 1205 patients (range 510 to 1900). The first study was published in 2008, and the last study was published in 2012.
All trials were open-label in design. All included studies were reported in English language. We did not found any unpublished trial.
The table 15.1 (page 116) summmarizes the main characteristics of all the included trials. More detailed description is given in the following section.

15.2 Summary of meta-analysis results

The meta-analysis of the available trials about PCI provide the results listed in tables 15.2 to 15.3 (page 117) and in the following graphs.

15.2.1 PCI with drug-eluting stents

PCI with drug-eluting stents was inferior to **CABG** in terms of long term cardiovascular events (RR=1.39, 95% CI 1.14 to 1.68, p=0.0000, 1 trial)and long term death (RR=1.36, 95% CI 1.05 to 1.77, p=0.0208, 1 trial). No significant difference was found on 2 yr MACE (RR=1.11, 95% CI 0.87 to 1.42, p=0.3873, 1 trial).

15.2.2 Stent

Stent was inferior to **CABG** in terms of 1 year revascularization (RR=5.31, 95% CI 1.99 to 14.16, p=0.0000, 1 trial). No significant difference was found on 1 year event (RR=1.25, 95% CI 0.75 to 2.09, p=0.3934, 1 trial).

Table 15.1: *Main study characteristics - PCI*

Trial	Patients	Treatments	Trial design and method
PCI with drug-eluting stents			
PCI with drug-eluting stents versus CABG			
SYNTAX (diabetic), 2010 [1] n = NA vs. NA	sub group of diabetic patients with left main and/or 3-vessel disease	paclitaxel-eluting stents **versus** surgical revascularization	parallel groups
FREEDOM, 2012 [2] n = 953 vs. 947	patients with diabetes and multivessel coronary artery disease	percutaneous coronary stenting **versus** CABG	open parallel groups Primary endpoint: death, MI, stroke 140 centres, international
Stent			
Stent versus CABG			
CARDia (PCI), 2008 [1] n = 256 vs. 254	patients with diabetes and symptomatic multivessel coronary artery disease or complex single-vessel disease.	PCI plus stenting (and routine abciximab) **versus** CABG	open parallel groups Primary endpoint: death, stroke, and MI 24 centres, UK, Ireland

Table 15.2: *Summary of all results for PCI with drug-eluting stents*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n
PCI with drug-eluting stents versus CABG						
long term cardiovascular events	RR=1.39	1.14;1.68	0.0000	1.0000 (0.00)	1	1900
long term death	RR=1.36	1.05;1.77	0.0208	1.0000 (1.00)	1	1900
2 yr MACE	RR=1.11	0.87;1.42	0.3873	1.0000 (0.00)	1	1900

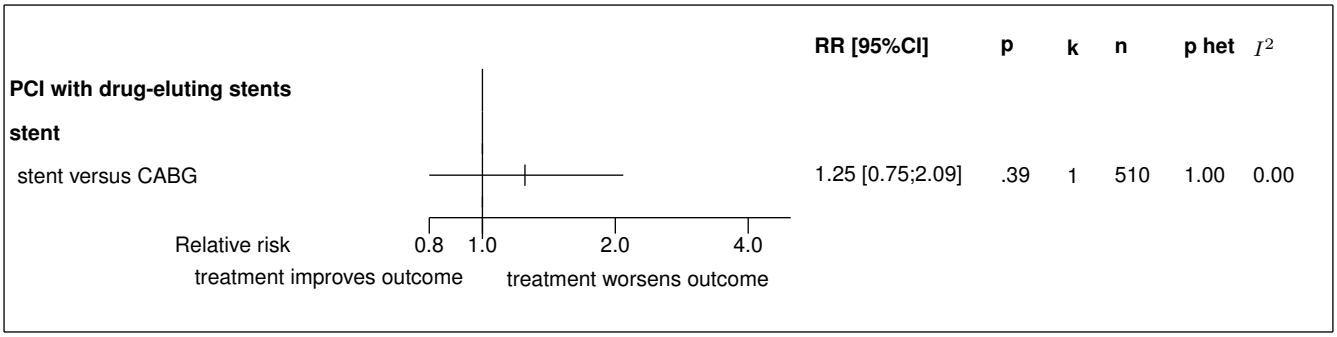
CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients

Table 15.3: *Summary of all results for stent*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n
stent versus CABG						
1 year event	RR=1.25	0.75;2.09	0.3934	1.0000 (0.00)	1	510
1 year revascularization	RR=5.31	1.99;14.16	0.0000	1.0000 (0.00)	1	510

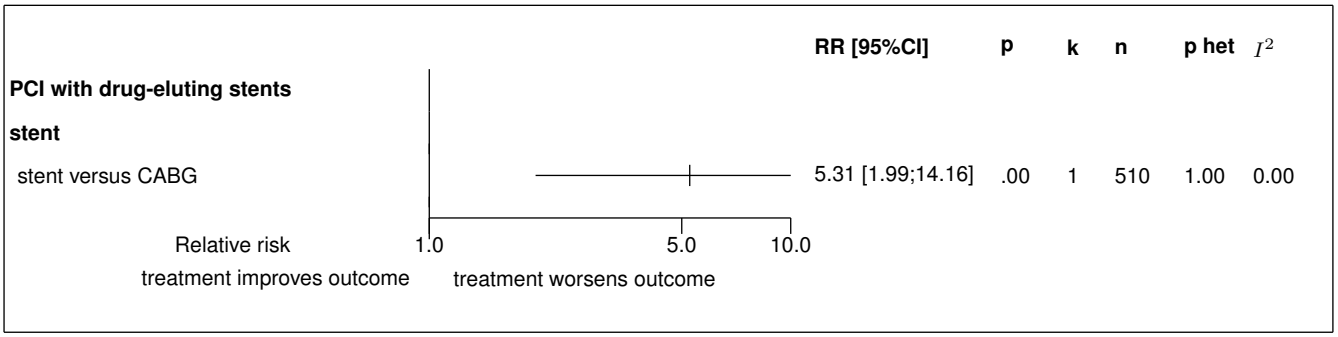
CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients

Figure 15.1: *Forest's plot for 1 year event*



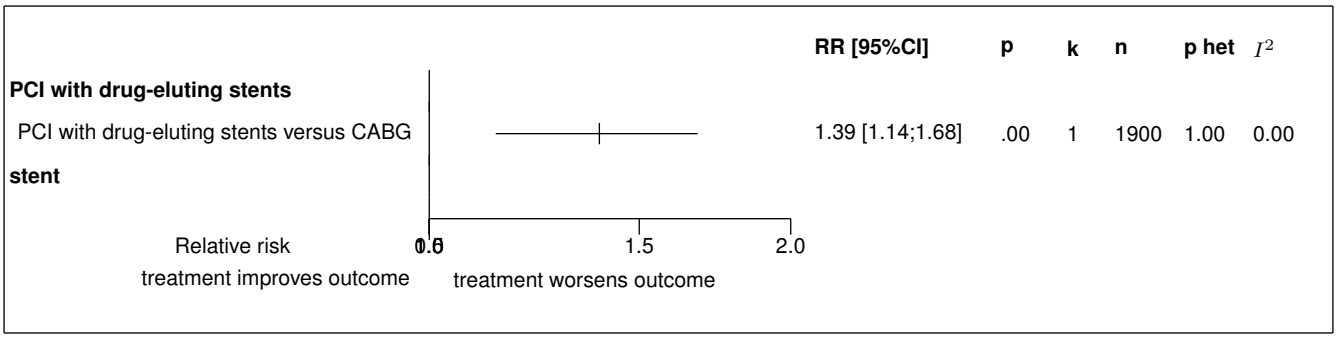
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ^{r}: random effect model used

Figure 15.2: *Forest's plot for 1 year revascularization*



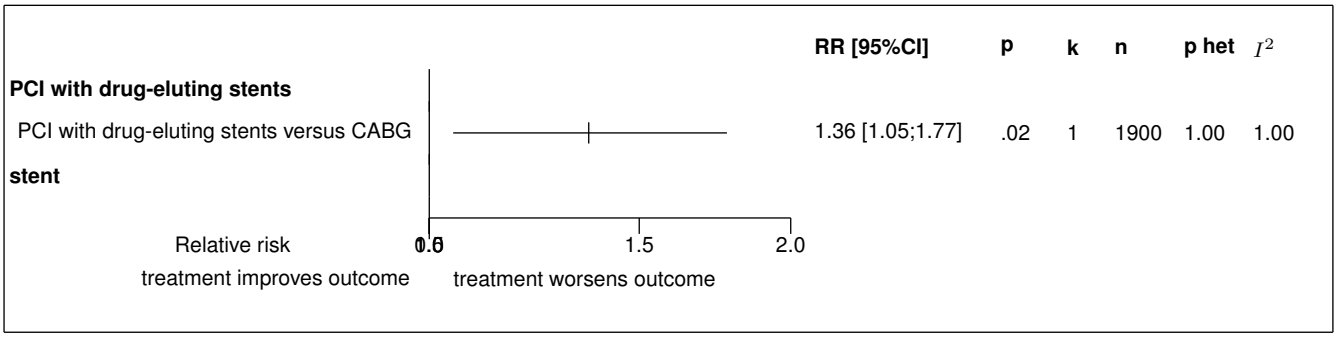
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ^{r}: random effect model used

Figure 15.3: *Forest's plot for long term cardiovascular events*



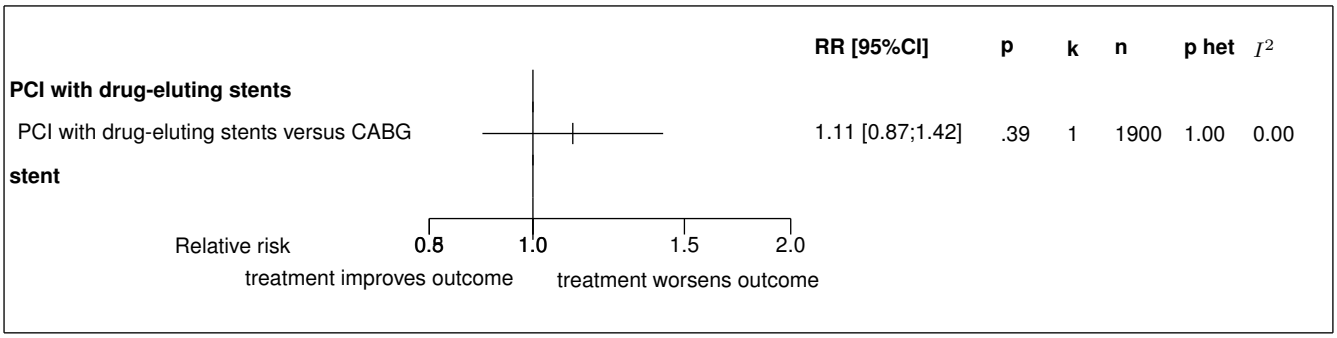
Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ^{r}: random effect model used

Figure 15.4: *Forest's plot for long term death*



Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ᶠ: random effect model used

Figure 15.5: *Forest's plot for 2 yr MACE*



Results obtained with a fixed effect model except in case of heterogenity where a random model was used
RR: relative risk; 95% CI: 95% confidence interval; p: p-value of the association test; k: number of trials; n: total number of patients involving in the pooled trials; p het: p-value of the hetereogenity test; ᶠ: random effect model used

16 Detailed results for PCI with drug-eluting stents

16.1 Available trials

A total of 2 RCTs which randomized 1900 patients were identified: all compared PCI with drug-eluting stents with CABG.
The average study size was 1900 patients (range 1900 to 1900). The first study was published in 2010, and the last study was published in 2012.
This trial was open-label in design.
All included studies were reported in English language. We did not found any unpublished trial.
Long term cardiovascular events data was reported in 1 trials; 1 trials reported data on 2 yr MACE; and 1 trials reported data on long term death.
Following tables 16.1 (page 120), 16.2 (page 120), 16.4 (page 123), and 16.3 (page 121) summarized the main characteristics of the trials including in this systematic review of randomized trials of PCI with drug-eluting stents.

Table 16.1: *Treatment description - PCI - PCI with drug-eluting stents*

Trial	Studied treatment	Control treatment
PCI with drug-eluting stents versus CABG		
SYNTAX (diabetic) (2010) [1]	paclitaxel-eluting stents	surgical revascularization
FREEDOM (2012) [2]	percutaneous coronary stenting	CABG
	Concomittant treatment: recommended medical therapies for the control oflow-density lipoprotein cholesterol, systolic blood pressure, and glycated hemoglobin	

Table 16.2: *Descriptions of participants - PCI - PCI with drug-eluting stents*

Trial	Patients
PCI with drug-eluting stents versus CABG	
SYNTAX (diabetic) (2010) [1]	Sub group of diabetic patients with left main and/or 3-vessel disease

continued...

Trial	Patients	
FREEDOM (2012) [2]	Patients with diabetes and multivessel coronary artery disease	
	Inclusion criteria: diabetes mellitus (Type 1 or Type 2) (presence of classic symptoms of diabetes mellitus with unequivocal elevation of plasma glucose 2-hour post-prandial or random of greater than 200 mg/dL (11mmol/L) or fasting plasma glucose elevation on more than one occasion of at least 126 mg/dL (7mmol/L)); Currently undergoing pharmacological or non-pharmacological treatment for diabetes; Angiographically confirmed multivessel CAD [critical (greater than or equal to 70%) lesions in at least two major epicardial vessels and in at least two separate coronary artery territories (LAD, LCX, RCA)] amenable to either PCI or CABG; Angiographic characteristics amendable to both PCI/DES and CABG; Indication for revascularization based upon symptoms of angina and/or objective evidence of myocardial ischemia	**Exclusion criteria:** severe congestive heart failure (class III or IV according to New York Heart Association [NYHA] or pulmonary edema); Prior CABG surgeryPrior valve surgery; Prior PCI with stent implantation within 6 months of study entry; stroke within 6 months of study entry; if stroke occured more than 6 months prior to study entry, must have significant residual neurologic involvement, as reflected in a Rankin Score of greater than 1Prior history of significant bleeding (within 6 months of study entry) that may occur during CABG or PCI/DES related anticoagulationIn-stent restenosis of a target vessel; Two or more chronic total occlusions in major coronary territories; Left main stenosis (at least 50% diameter stenosis); Acute ST-elevation MI (Q-wave) within 72 hours of study entry requiring revascularization; Abnormal creatine kinase level (greater than twice the normal limit); or abnormal CK-MB level at study entry; Planned simultaneous surgical procedure unrelated to coronary revascularization (e.g., valve repair/replacement, aneurysmectomy, carotid endarterectomy, or carotid stent); Cannot undergo either CABG or PCI/DES because of a coexisting medical condition; Significant leukopenia, neutropenia, thrombocytopenia, anemia, or known bleeding diathesis; Intolerance to aspirin or both clopidogrel and ticlopidine; Dementia with a score of less than 20 on the Mini Mental Status Examination (MMSE); Extra-cardiac illness that is expected to limit survival to less than 5 years (e.g., oxygen-dependent chronic obstructive pulmonary disease, active hepatitis, significant hepatic failure, or severe kidney disease)

Table 16.3: *Design and methodological quality of trials - PCI - PCI with drug-eluting stents*

Trial	Design	Duration	Centre	Primary endpoint
PCI with drug-eluting stents versus CABG				
SYNTAX (diabetic), 2010 [1] n=NaN	Parallel groups exploratory trial	1 year		
FREEDOM, 2012 [2] n=1900	Parallel groups open confirmatory trial at risk of bias	3.8 yrs (median)	international 140 centres	death, MI, stroke

continued...

Trial	Design	Duration	Centre	Primary endpoint

Table 16.4: *Trial characteristics - PCI - PCI with drug-eluting stents*

Trial	Age (mean, year)	Men (%)	Ejection fraction (%)	Extent of Disease	arterial grafts	stent (%)
PCI with drug-eluting stents versus CABG						
SYNTAX (diabetic), 2010 [1]						
FREEDOM, 2012 [2]						

16.2 Meta-analysis results

The results are detailed in table 16.5 (page 124). This table is followed by the Forest's plot corresponding to each endpoint.

PCI with drug-eluting stents versus CABG

Only one of the 2 studies eligible for this comparison provided data on **long term cardiovascular events**. The analysis detected a statistically significant difference in favor of CABG in long term cardiovascular events, with a RR of 1.39 (95% CI 1.14 to 1.68, p=0.0000).
Only one of the 2 studies eligible for this comparison provided data on **long term death**. The analysis detected a statistically significant difference in favor of CABG in long term death, with a RR of 1.36 (95% CI 1.05 to 1.77, p=0.0208).
Only one of the 2 studies eligible for this comparison provided data on **2 yr MACE**. No statistically significant difference between the groups was found in 2 yr MACE, with a RR of 1.11 (95% CI 0.87 to 1.42, p=0.3873).

Table 16.5: *Results details - PCI - PCI with drug-eluting stents*

Comparison Endpoint	Effect	95% CI	p ass	p het	k	n
PCI with drug-eluting stents versus CABG						
long term cardiovascular events	RR=1.39	[1.14;1.68]	0.0000	1.0000 (I^2=0.00)	1	1900
long term death	RR=1.36	[1.05;1.77]	0.0208	1.0000 (I^2=1.00)	1	1900
2 yr MACE	RR=1.11	[0.87;1.42]	0.3873	1.0000 (I^2=0.00)	1	1900

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

Figure 16.1: *Forest's plot for long term cardiovascular events*

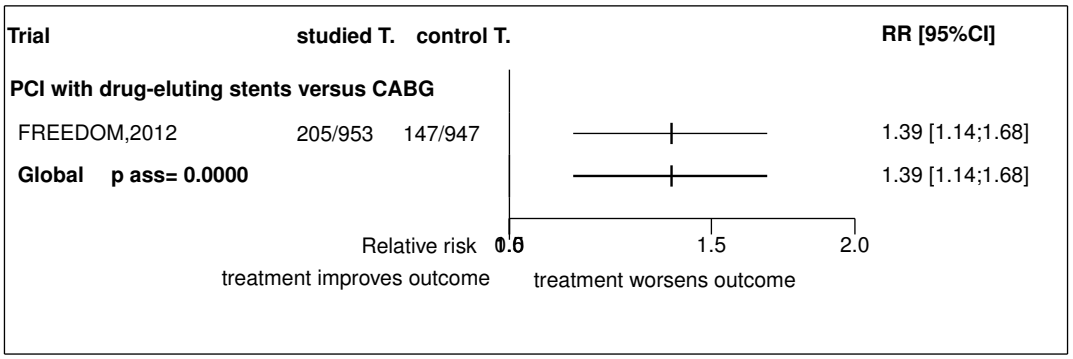


Figure 16.2: *Forest's plot for long term death*

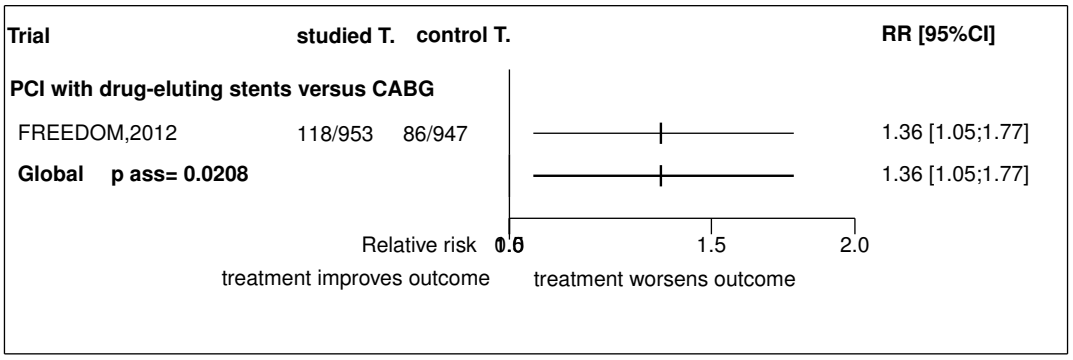
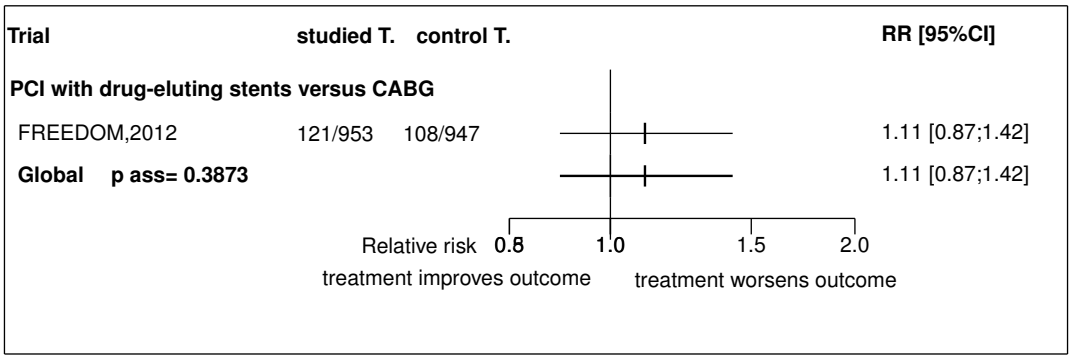


Figure 16.3: *Forest's plot for 2 yr MACE*



References

[1] Banning AP, Westaby S, Morice MC, Kappetein AP, Mohr FW, Berti S, Glauber M, Kellett MA, Kramer RS, Leadley K, Dawkins KD, Serruys PW. Diabetic and nondiabetic patients with left main and/or 3-vessel coronary artery disease: comparison of outcomes with cardiac surgery and paclitaxel-eluting stents. J Am Coll Cardiol 2010;55:1067-75. [PMID=20079596]

[2] Farkouh ME, Domanski M, Sleeper LA, Siami FS, Dangas G, Mack M, Yang M, Cohen DJ, Rosenberg Y, Solomon SD, Desai AS, Gersh BJ, Magnuson EA, Lansky A, Boineau R, Weinberger J, Ramanathan K, Sousa JE, Rankin J, Bhargava B, Buse J, Hueb W, Smith CR, Muratov. Strategies for Multivessel Revascularization in Patients with Diabetes. N Engl J Med 2012 Nov 4;:. [PMID=23121323]

16.3 Individual trial summaries

Table 16.6: *SYNTAX (diabetic), 2010 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=NA (NA vs. NA) **Follow-up duration:** 1 year **Study design:** Randomized controlled trial Parallel groups Exploratory trial	Sub group of diabetic patients with left main and/or 3-vessel disease	**Studied treatment:** paclitaxel-eluting stents **Control treatment:** surgical revascularization	

Reference

Banning AP, Westaby S, Morice MC, Kappetein AP, Mohr FW, Berti S, Glauber M, Kellett MA, Kramer RS, Leadley K, Dawkins KD, Serruys PW. Diabetic and nondiabetic patients with left main and/or 3-vessel coronary artery disease: comparison of outcomes with cardiac surgery and paclitaxel-eluting stents. J Am Coll Cardiol 2010;55:1067-75 [PMID=20079596]

Table 16.7: *FREEDOM, 2012 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=1900 (953 vs. 947) **Follow-up duration:** 3.8 yrs (median) **Study design:** Randomized controlled trial Parallel groups Open Confirmatory trial at risk of bias international, 140 centres	Patients with diabetes and multivessel coronary artery disease **Inclusion criteria:** Diabetes mellitus (Type 1 or Type 2) (presence of classic symptoms of diabetes mellitus with unequivocal elevation of plasma glucose 2-hour post-prandial or random of greater than 200 mg/dL (11mmol/L) or fasting plasma glucose elevation on more than one occasion of at least 126 mg/dL (7mmol/L)); Currently undergoing pharmacological or non-pharmacological treatment for diabetes; Angiographically confirmed multivessel CAD [critical (greater than or equal to 70%) lesions in at least two major epicardial vessels and in at least two separate coronary artery territories (LAD, LCX, RCA)] amenable to **Exclusion criteria:** Severe congestive heart failure (class III or IV according to New York Heart Association [NYHA] or pulmonary edema); Prior CABG surgeryPrior valve surgery; Prior PCI with stent implantation within 6 months of study entry; stroke within 6 months of study entry; if stroke occured more than 6 months prior to study entry, must have significant residual neurologic involvement, as reflected in a Rankin Score of greater than 1Prior history of significant bleeding (within 6 months of study entry) that may occur during CABG or PCI/DES related anticoagulationIn-stent restenosis of a target vessel; Two o	**Studied treatment:** percutaneous coronary stenting **Control treatment:** CABG **Concomittant treat.:**recommended medical therapies for the control oflow-density lipoprotein cholesterol, systolic blood pressure, and glycated hemoglobin	Long term cardiovascular events RR=1.39 [1.14;1.68]

continued...

trial details	Patients	Treatments	Outcomes

Reference

Farkouh ME, Domanski M, Sleeper LA, Siami FS, Dangas G, Mack M, Yang M, Cohen DJ, Rosenberg Y, Solomon SD, Desai AS, Gersh BJ, Magnuson EA, Lansky A, Boineau R, Weinberger J, Ramanathan K, Sousa JE, Rankin J, Bhargava B, Buse J, Hueb W, Smith CR, Muratov. Strategies for Multivessel Revascularization in Patients with Diabetes. N Engl J Med 2012 Nov 4;: [PMID=23121323]

17 Detailed results for stent

17.1 Available trials

Only one trial which randomized 510 patients was identified: it compared stent with CABG.
This trial included 510 patients and was published in 2008.
This trial was open-label in design.
It was reported in English language.
data was reported in trials;
Following tables 17.1 (page 130), 17.2 (page 130), 17.4 (page 132), and 17.3 (page 130) summarized the main characteristics of the trial including in this systematic review of randomized trials of stent.

Table 17.1: *Treatment description - PCI - stent*

Trial	Studied treatment	Control treatment
Stent versus CABG		
CARDia (PCI) (2008) [1] [a]	PCI plus stenting (and routine abciximab) bare metal stent or sirolimus-coated stents (CYPHER) and abciximab	CABG

a) BMS n=72, CYPHER n=180

Table 17.2: *Descriptions of participants - PCI - stent*

Trial	Patients	
Stent versus CABG		
CARDia (PCI) (2008) [1]	Patients with diabetes and symptomatic multivessel coronary artery disease or complex single-vessel disease.	
	Inclusion criteria: multi-vessel disease or complex single-vessel disease (ostial or proximal left anterior descending artery); diabetes mellitus; anatomy suitable for both PCI and CABG	**Exclusion criteria:** previous PCI or CABG; age >80 years; left main disease; cardiogenic shock; recent ST-elevation MI (within 6 weeks); ejection fraction <20%; contraindications to abciximab, aspirin, and clopidogrel

Table 17.3: *Design and methodological quality of trials - PCI - stent*

Trial	Design	Duration	Centre	Primary endpoint
Stent versus CABG				

continued...

Trial	Design	Duration	Centre	Primary endpoint
CARDia (PCI), 2008 [1] n=510	Parallel groups open confirmatory trial at risk of bias	1 y	UK, Ireland 24 centres	death, stroke, and MI

Table 17.4: *Trial characteristics - PCI - stent*

Trial	Age (mean, year)	Men (%)	Ejection fraction (%)	Extent of Disease	arterial grafts	stent (%)
Stent versus CABG						
CARDia (PCI), 2008 [1]						

17.2 Meta-analysis results

The results are detailed in table 17.5 (page 133). This table is followed by the Forest's plot corresponding to each endpoint.

Stent versus CABG

The single study eligible for this comparison provided data on **1 year event**. No statistically significant difference between the groups was found in 1 year event, with a RR of 1.25 (95% CI 0.75 to 2.09, p=0.3934).
The single study eligible for this comparison provided data on **1 year revascularization**. The analysis detected a statistically significant difference in favor of CABG in 1 year revascularization, with a RR of 5.31 (95% CI 1.99 to 14.16, p=0.0000).

Table 17.5: *Results details - PCI - stent*

Comparison Endpoint	Effect	95% CI	p ass	p het	k	n
stent versus CABG						
1 year event	RR=1.25	[0.75;2.09]	0.3934	1.0000 (I^2=0.00)	1	510
1 year revascularization	RR=5.31	[1.99;14.16]	0.0000	1.0000 (I^2=0.00)	1	510

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

Figure 17.1: *Forest's plot for 1 year event*

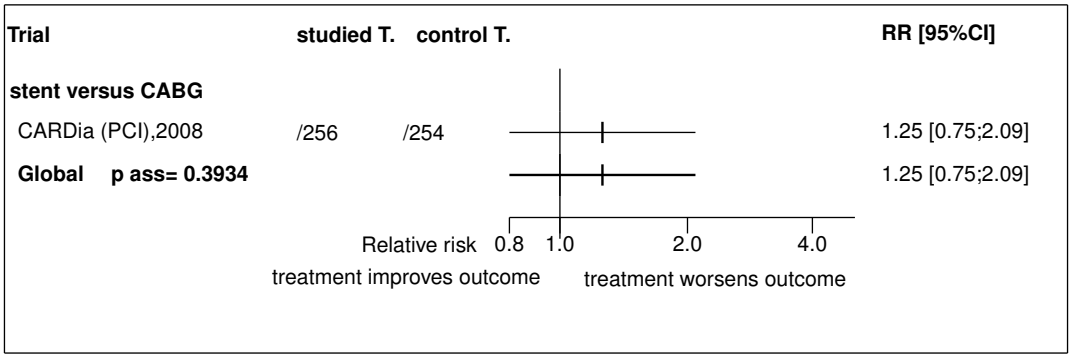
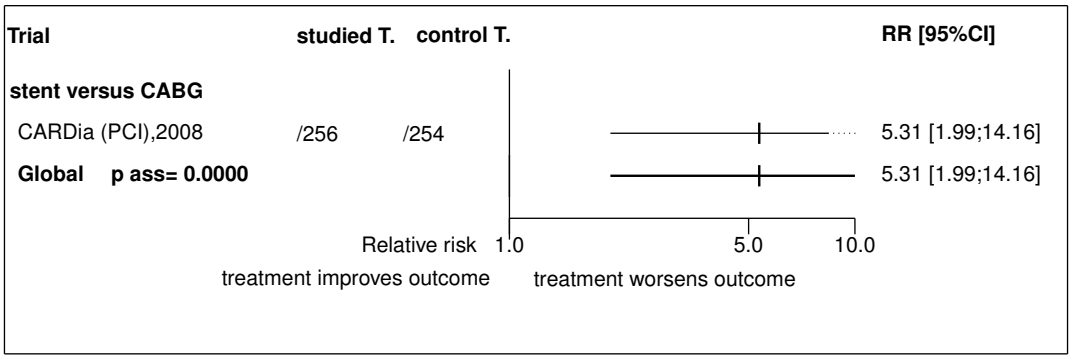


Figure 17.2: *Forest's plot for 1 year revascularization*



References

[1] Kapur A, Hall RJ, Malik IS, Qureshi AC, Butts J, de Belder M, Baumbach A, Angelini G, de Belder A, Oldroyd KG, Flather M, Roughton M, Nihoyannopoulos P, Bagger JP, Morgan K, Beatt KJ. Randomized comparison of percutaneous coronary intervention with coronary artery bypass grafting in diabetic patients. 1-year results of the CARDia (Coronary Artery Revascularization in Diabetes) trial. J Am Coll Cardiol 2010 Feb 2;55:432-40. [PMID=20117456]

17.3 Individual trial summaries

Table 17.6: *CARDia (PCI), 2008 - Trial synopsis*

Trial details	Patients	Treatments	Outcomes
n=510 (256 vs. 254) **Follow-up duration:** 1 y **Study design:** Randomized controlled trial Parallel groups Open Confirmatory trial at risk of bias UK, Ireland, 24 centres	Patients with diabetes and symptomatic multivessel coronary artery disease or complex single-vessel disease. **Inclusion criteria:** multi-vessel disease or complex single-vessel disease (ostial or proximal left anterior descending artery); diabetes mellitus; anatomy suitable for both PCI and CABG **Exclusion criteria:** previous PCI or CABG; age >80 years; left main disease; cardiogenic shock; recent ST-elevation MI (within 6 weeks); ejection fraction <20%; contraindications to abciximab, aspirin, and clopidogrel	**Studied treatment:** PCI plus stenting (and routine abciximab) bare metal stent or sirolimus-coated stents (CYPHER) and abciximab **Control treatment:** CABG **note:** BMS n=72, CYPHER n=180	

Reference

Kapur A, Hall RJ, Malik IS, Qureshi AC, Butts J, de Belder M, Baumbach A, Angelini G, de Belder A, Oldroyd KG, Flather M, Roughton M, Nihoyannopoulos P, Bagger JP, Morgan K, Beatt KJ. Randomized comparison of percutaneous coronary intervention with coronary artery bypass grafting in diabetic patients. 1-year results of the CARDia (Coronary Artery Revascularization in Diabetes) trial. J Am Coll Cardiol 2010 Feb 2;55:432-40 [PMID=20117456]

18 Global meta-analysis: all PCI

18.1 Global meta-analysis: all PCI versus CABG

Table 18.1: *All PCIversus CABG*

Endpoint	Effect	95% CI	p ass	p het (I^2)	k	n
1 year event	RR=1.25	0.75;2.09	0.3934	1.0000 (0.00)	1	510
1 year revascularization	RR=5.31	1.99;14.16	0.0000	1.0000 (0.00)	1	510
long term cardiovascular events	RR=1.39	1.14;1.68	0.0000	1.0000 (0.00)	1	1900
long term death	RR=1.36	1.05;1.77	0.0208	1.0000 (1.00)	1	1900
2 yr MACE	RR=1.11	0.87;1.42	0.3873	1.0000 (0.00)	1	1900

CI: confidence interval; p ass: p-value of association test; p het: p-value of the heterogeneity test; k: number of trials; n: total number of patients; ES: effect size; I^2: inconsistance degree

19 Ongoing studies of PCI

Only one ongoing study was identified. A brief description of this trial is given table 19.1

Table 19.1: *Ongoing studies for PCI*

Study	Description
VA CARDS NCT00326196	percutaneous coronary stenting with drug eluding stents **vs.** CABG angiographically significant coronary artery disease in diabetes

20 Excluded studies for PCI

No trial was excluded.

References