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Compliance with the prescription of recommended medical therapy in trials comparing six versus 12 months or longer dual antiplatelet therapy: A systematic review and meta-analysis

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Certain randomized controlled trials suggested that six months' dual antiplatelet therapy (DAPT) might be equally effective and probably a safer approach compared with 12 months' therapy following percutaneous coronary intervention (PCI) with drug-eluting stents (DESs).^{1,2} These findings have influenced current professional guidelines which now endorse DAPT for 6–12 months following DES based PCI. However, the impact of concomitant guideline directed medical therapy (GDMT) such as statins, beta-blockers, angiotensin converting enzyme inhibitors (ACEIs), angiotensin receptor blockers (ARBs)) on study outcomes in such trials is often overlooked. In a recent meta-analysis of five revascularization trials, compliance with GDMT was shown to be suboptimal and was significantly lower after coronary artery bypass grafting than PCI.³ Based on these observations, we conducted a meta-analysis to compare the differences in GDMT in trials comparing six months' versus 12 months' DAPT after PCI.

Four trials^{1,2,4,5} reporting concurrent GDMT (sta-tins, beta-blockers and ACEI/ARB) at least at baseline or discharge were selected using MEDLINE, EMBASE and CENTRAL (inception–10 October 2018) (Table 1). Compliance rates for individual therapies were calculated as percent of subjects prescribed each drug at baseline or discharge.³ The "compliance gap" was obtained by calculating the difference in compliance rates of study groups. The estimates were reported as random effects risk differences with 95% confidence intervals. Q statistics and *I*² statistics were used to assess heterogeneity. Quality assessment of trials was done on Cochrane risk of bias tool. The literature search, data extraction and bias risk assessment was done by two authors (SUK and MSK) independently. Moment of methods meta regression analysis was conducted between GDMT and all-cause mortality

Declaration of conflicting interests

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Author contribution

SUK contributed to the conception or design of the work, acquisition, analysis, or interpretation of data for the work and drafted the manuscript. MSK contributed in data acquisition and appraisal. EK and MAK critically revised the manuscript. All gave final approval and agree to be accountable for all aspects of work ensuring integrity and accuracy.

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and cardiovascular outcomes. Statistical significance was set at 5%. Comprehensive Meta-Analysis (version 3) was used for meta-analysis.

Over all compliance with GDMT at baseline was 84.0% (75–90%; p < 0.001). Statins had the highest compliance rates: 90.7% (80.8–95.7%, p < 0.001), followed by ACEI/ARB: 81.5% (75.5–86.3%, p < 0.001) and beta-blockers: 79.8% (70.5–86.7%, p < 0.001). There was a slight reduction in prescription rates of medical therapy at discharge: GDMT: 77.5% (69.6–83.9%, p < 0.001], statins: 87.8% (83.9–90.9%, p < 0.001), beta-blockers: 71.9% (69.6–83.9%, p < 0.001), statins: 87.8% (60.9–81.5%, p < 0.001). The compliance rates for proton pump inhibitors (PPIs) at baseline: 31.5% (21.5–43.6%, p < 0.001) and discharge: 34.6% (32.5–36.7%, p < 0.001) were lowest.

There were no significant differences between compliance rates of medical therapy among six versus 12 months' DAPT groups (Figure 1). Hence, the absolute difference in GDMT did not result in significant change in all-cause mortality (slope: 0.00009, p = 0.58), myocardial infarction (slope: -0.00017, p = 0.49), stroke (slope: -0.00014, p = 0.43) and stent thrombosis (slope: -0.00006, p = 0.62).

Overall GDMT compliance in both arms of these trials was better than compliance rates reported in meta-analysis of revascularization trials (~53% to 67%).³ The comparable compliance rates in both the groups also validate the impression that cardiovascular benefits of six months' DAPT in these trials were unlikely to be skewed by imbalance in GDMT. Prescription rates of PPIs were low, potentially reflecting ongoing controversy regarding their use in different professional guidelines. Similar to a former report,³ there was a modest decline in compliance rates from baseline to discharge. Compliance with statins was the highest, while both beta-blockers (60% to 83%) and ACEI/ARBs (61% to 87%) had the lower and variable compliance rates across the trials. These findings raise the concern that even in well-conducted trials, the drug compliance remains suboptimal.³

These results are consistent with real world data. A 147,785 cohorts' study from The Netherlands suggested a large discrepancy between guideline recommendations and prescription rates of statin therapy.⁶ Hence, there is an utmost need to improvise such strategies which can enhance guideline directed clinical practice and improve patients' adherence to medications. For instance, one approach could be switching from different treatment regimens to a fixed-dose combination pill (polypill). In the UMPIRE trial, polypill based therapy (aspirin 75 mg, simvastatin 40 mg, lisinopril 10 mg, and either hydrochlorothiazide 12.5 mg or atenolol 50 mg) showed consistent and identical cardiovascular risk reductions compared with a wide range of usual care patterns of antiplatelets, statin and antihypertensive medications.⁷

This study is limited due to general lack of reporting of drug prescription rates in the clinical trials leading to inclusion of lesser number of trials than expected. For the same reason, drug compliance beyond the discharge time point could not be assessed. Finally, since we estimated medication adherence rates from prescription rates, the possibility of over estimating compliance rates cannot be ignored.³

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In summary, although there were no significant differences in prescription rates of GDMT among six versus 12 months' DAPT groups, GDMT adherence rates varied from being low to moderate across the included trials. These observations call for improving the strategies to enhance compliance with GDMT among participants of trials to reduce potential risk of bias due to imbalance in medical therapy.

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References

- Gwon HC, Hahn JY, Park KW, et al. Six-month versus 12-month dual antiplatelet therapy after implantation of drug-eluting stents: The Efficacy of Xience/Promus Versus Cypher to Reduce Late Loss After Stenting (EXCELLENT) randomized, multicenter study. Circulation 2012; 125: 505– 513. [PubMed: 22179532]
- 2. Schulz-Schupke S, Byrne RA, Ten Berg JM, et al. ISAR-SAFE: A randomized, double-blind, placebo-controlled trial of 6 *vs.* 12 months of clopidogrel therapy after drug-eluting stenting. Eur Heart J 2015; 36: 1252–1263. [PubMed: 25616646]
- Pinho-Gomes AC, Azevedo L, Ahn JM, et al. Compliance with guideline-directed medical therapy in contemporary coronary revascularization trials. J Am Coll Cardiol 2018; 71: 591–602. [PubMed: 29420954]
- 4. Hahn JY, Song YB, Oh JH, et al. 6-month versus 12-month or longer dual antiplatelet therapy after percutaneous coronary intervention in patients with acute coronary syndrome (SMART-DATE): A randomised, open-label, non-inferiority trial. Lancet 2018; 391: 1274–1284. [PubMed: 29544699]
- 5. Valgimigli M, Campo G, Monti M, et al. Short- versus long-term duration of dual-antiplatelet therapy after coronary stenting: A randomized multicenter trial. Circulation 2012; 125: 2015–2026. [PubMed: 22438530]
- Balder JW, de Vries JK, Mulder DJ, et al. Time to improve statin prescription guidelines in low-risk patients? Eur J Prev Cardiol 2017; 24: 1064–1070. [PubMed: 28429651]
- Lafeber M, Spiering W, Visseren FL, et al. Impact of switching from different treatment regimens to a fixed-dose combination pill (polypill) in patients with cardiovascular disease or similarly high risk. Eur J Prev Cardiol 2017; 24: 951–961. [PubMed: 28436727]

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ledical Therapy	Study name	Even	ts / Total			Statistics f	for each st	udy			Ri	isk differ	rence ar	id 95% (
		Short term DAPT	Long term DAPT	Risk difference	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value						
TATIN	ISARSAFE	1897 / 1997	1890 / 2003	0.006	0.007	0.000	-0.008	0.020	0.893	0.372	1	1		- T	1	
	PRODIGY	898 / 987	905 / 983	-0.011	0.013	0.000	-0.035	0.014	-0.863	0.388						
				0.001	0.008	0.000	-0.015	0.017	0.110	0.913						
ETA-BLOCKER	ISARSAFE	1662 / 1997	1679 / 2003	-0.006	0.012	0.000	-0.029	0.017	-0.511	0.609						
	PRODIGY	828 / 987	810/983	0.015	0.017	0.000	-0.018	0.048	0.883	0.377						
				0.001	0.010	0.000	-0.018	0.020	0.095	0.924						
CEI/ARB	ISARSAFE	1633 / 1997	1657 / 2003	-0.010	0.012	0.000	-0.033	0.014	-0.789	0.430						
	PRODIGY	858 / 987	829 / 983	0.026	0.016	0.000	-0.005	0.057	1.644	0.100						
				0.007	0.018	0.000	-0.028	0.041	0.382	0.702						
DMT	ISARSAFE	1731 / 1997	1743 / 2003	-0.003	0.011	0.000	-0.024	0.018	-0.318	0.751						
	PRODIGY	862 / 987	848 / 983	0.011	0.015	0.000	-0.019	0.041	0.701	0.483						
				0.001	0.009	0.000	-0.016	0.018	0.142	0.887						
PI	ISARSAFE	525 / 1978	508 / 1984	0.009	0.014	0.000	-0.018	0.037	0.672	0.502						
	PRODIGY	375 / 987	363 / 983	0.011	0.022	0.000	-0.032	0.053	0.489	0.625			٠			
				0.010	0.012	0.000	-0.013	0.033	0.829	0.407						
											-2.00	-1.00	0.00	1.00	2.00	
											Favors	6 month	s F	avors ≥	12 months	IS
Medical Therapy	Study name	Events	/ Total			Statistics fo	r each stu	dy			Favors (6 month				IS
Medical Therapy	Study name	Short term	Long term	Risk	Standard		Lower	Upper			Favors (IS
Medical Therapy	Study name			Risk difference		<u>Statistics fo</u> Variance			Z-Value	p-Value	Favors (IS
	Study name EXCELLENT	Short term	Long term		Standard		Lower	Upper	Z-Value 1.458	p-Value 0.145	Favors (IS
	EXCELLENT	Short term DAPT	Long term DAPT	difference	Standard error	Variance	Lower limit	Upper limit			Favors (15
	EXCELLENT	Short term DAPT 604 / 722	Long term DAPT 582 / 721	difference 0.029	Standard error 0.020	Variance 0.000	Lower limit –0.010	Upper limit 0.069	1.458	0.145	Favors (15
	EXCELLENT	Short term DAPT 604 / 722 876 / 966 1212 / 1357	Long term DAPT 582 / 721 866 / 963 1238 / 1355	difference 0.029 0.008 -0.021 0.002	Standard error 0.020 0.013	Variance 0.000 0.000	Lower limit -0.010 -0.019 -0.043 -0.025	Upper limit 0.069 0.034	1.458 0.561	0.145 0.575	Favors (15
STATIN	EXCELLENT PRODIGY SMART DATE EXCELLENT	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721	difference 0.029 0.008 -0.021 0.002 -0.026	Standard error 0.020 0.013 0.011 0.014 0.026	Variance 0.000 0.000 0.000 0.000 0.001	Lower limit -0.010 -0.019 -0.043 -0.025 -0.076	Upper limit 0.069 0.034 0.002 0.030 0.025	1.458 0.561 -1.809 0.147 -1.002	0.145 0.575 0.071 0.883 0.316	Favors (15
STATIN	EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722 811 / 966	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721 802 / 963	difference 0.029 0.008 -0.021 0.002 -0.026 0.007	Standard error 0.020 0.013 0.011 0.014 0.026 0.017	Variance 0.000 0.000 0.000 0.000 0.001 0.000	Lower limit -0.010 -0.019 -0.043 -0.025 -0.076 -0.026	Upper limit 0.069 0.034 0.002 0.030 0.025 0.040	1.458 0.561 -1.809 0.147 -1.002 0.399	0.145 0.575 0.071 0.883 0.316 0.690	Favors (IS
STATIN	EXCELLENT PRODIGY SMART DATE EXCELLENT	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721	difference 0.029 0.008 -0.021 0.002 -0.026 0.007 -0.029	Standard error 0.020 0.013 0.011 0.014 0.026 0.017 0.017	Variance 0.000 0.000 0.000 0.000 0.001 0.000 0.000	Lower limit -0.010 -0.019 -0.043 -0.025 -0.076 -0.026 -0.063	Upper limit 0.069 0.034 0.002 0.030 0.025 0.040 0.005	1.458 0.561 -1.809 0.147 -1.002 0.399 -1.693	0.145 0.575 0.071 0.883 0.316 0.690 0.090	Favors (15
Medical Therapy STATIN BETA-BLOCKER	EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY SMART DATE	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722 811 / 966 961 / 1357	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721 802 / 963 999 / 1355	difference 0.029 0.008 -0.021 0.002 -0.026 0.007 -0.029 -0.029 -0.014	Standard error 0.020 0.013 0.011 0.014 0.026 0.017 0.017 0.012	Variance 0.000 0.000 0.000 0.000 0.001 0.000 0.000 0.000	Lower limit -0.010 -0.019 -0.043 -0.025 -0.076 -0.026 -0.063 -0.038	Upper limit 0.069 0.034 0.002 0.030 0.025 0.040 0.005 0.010	1.458 0.561 -1.809 0.147 -1.002 0.399 -1.693 -1.127	0.145 0.575 0.071 0.883 0.316 0.690 0.090 0.260	Favors (15
STATIN	EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY SMART DATE EXCELLENT	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722 811 / 966 961 / 1357 468 / 722	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721 802 / 963 999 / 1355 474 / 721	difference 0.029 0.008 -0.021 0.002 -0.026 0.007 -0.029 -0.014 -0.009	Standard error 0.020 0.013 0.011 0.014 0.026 0.017 0.017 0.012 0.025	Variance 0.000 0.000 0.000 0.000 0.001 0.000 0.000 0.001	Lower limit -0.010 -0.019 -0.043 -0.025 -0.076 -0.026 -0.063 -0.038 -0.058	Upper limit 0.069 0.034 0.002 0.030 0.025 0.040 0.005 0.010 0.040	1.458 0.561 -1.809 0.147 -1.002 0.399 -1.693 -1.127 -0.368	0.145 0.575 0.071 0.883 0.316 0.690 0.090 0.260 0.713	Favors (15
STATIN BETA-BLOCKER	EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722 811 / 966 961 / 1357 468 / 722 848 / 966	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721 802 / 963 999 / 1355 474 / 721 832 / 963	difference 0.029 0.008 -0.021 0.002 -0.026 0.007 -0.029 -0.014 -0.009 0.014	Standard error 0.020 0.013 0.011 0.014 0.026 0.017 0.017 0.012 0.025 0.015	Variance 0.000 0.000 0.000 0.000 0.001 0.000 0.000 0.000 0.001 0.000	Lower limit -0.010 -0.019 -0.043 -0.025 -0.076 -0.026 -0.063 -0.038 -0.058 -0.016	Upper limit 0.069 0.034 0.002 0.030 0.025 0.040 0.005 0.010 0.040 0.044	1.458 0.561 -1.809 0.147 -1.002 0.399 -1.693 -1.127 -0.368 0.909	0.145 0.575 0.071 0.883 0.316 0.690 0.090 0.260 0.713 0.363	Favors (15
STATIN BETA-BLOCKER	EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY SMART DATE EXCELLENT	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722 811 / 966 961 / 1357 468 / 722	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721 802 / 963 999 / 1355 474 / 721	difference 0.029 0.008 -0.021 0.002 -0.026 0.007 -0.029 -0.014 -0.009 0.014 -0.009	Standard error 0.020 0.013 0.011 0.014 0.026 0.017 0.017 0.012 0.025 0.015 0.018	Variance 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	Lower limit -0.010 -0.019 -0.025 -0.076 -0.026 -0.063 -0.038 -0.058 -0.016 -0.037	Upper limit 0.069 0.034 0.002 0.030 0.025 0.040 0.005 0.010 0.040 0.044 0.032	1.458 0.561 -1.809 0.147 -1.002 0.399 -1.693 -1.127 -0.368 0.909 -0.142	0.145 0.575 0.071 0.883 0.316 0.690 0.090 0.260 0.713 0.363 0.887	Favors (15
STATIN BETA-BLOCKER ACEI/ARB	EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY SMART DATE	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722 811 / 966 961 / 1357 468 / 722 848 / 966 945 / 1357	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721 802 / 963 999 / 1355 474 / 721 832 / 963 947 / 1355	difference 0.029 0.008 -0.021 0.002 -0.026 0.007 -0.029 -0.014 -0.009 0.014 -0.003 0.004	Standard error 0.020 0.013 0.011 0.014 0.026 0.017 0.017 0.012 0.025 0.015 0.018 0.010	Variance 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	Lower limit -0.010 -0.043 -0.025 -0.076 -0.026 -0.063 -0.038 -0.058 -0.016 -0.037 -0.017	Upper limit 0.069 0.034 0.002 0.030 0.025 0.040 0.005 0.010 0.040 0.044 0.032 0.025	1.458 0.561 -1.809 0.147 -1.002 0.399 -1.693 -1.127 -0.368 0.909 -0.142 0.386	0.145 0.575 0.071 0.883 0.316 0.690 0.090 0.260 0.713 0.363 0.887 0.699	Favors (15
STATIN BETA-BLOCKER	EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY SMART DATE EXCELLENT EXCELLENT	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722 811 / 966 961 / 1357 468 / 722 848 / 966 945 / 1357 500 / 722	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721 802 / 963 999 / 1355 474 / 721 832 / 963 947 / 1355 500 / 721	difference 0.029 0.008 -0.021 0.002 -0.026 0.007 -0.029 -0.014 -0.009 0.014 -0.003 0.004 -0.001	Standard error 0.020 0.013 0.011 0.026 0.017 0.012 0.012 0.012 0.015 0.018 0.010 0.024	Variance 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	Lower limit -0.010 -0.019 -0.043 -0.025 -0.076 -0.026 -0.063 -0.038 -0.038 -0.016 -0.016 -0.037 -0.017 -0.049	Upper limit 0.069 0.034 0.002 0.030 0.025 0.040 0.040 0.040 0.044 0.032 0.025 0.047	1.458 0.561 -1.809 0.147 -1.002 0.399 -1.693 -1.127 -0.368 0.909 -0.142 0.386 -0.040	0.145 0.575 0.071 0.883 0.316 0.690 0.090 0.260 0.713 0.363 0.887 0.699 0.968	Favors (15
STATIN BETA-BLOCKER ACEI/ARB	EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY SMART DATE	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722 811 / 966 961 / 1357 468 / 722 848 / 966 945 / 1357 500 / 722 844 / 966	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721 802 / 963 999 / 1355 474 / 721 832 / 963 947 / 1355 500 / 721 833 / 963	difference 0.029 0.008 -0.021 0.002 -0.026 0.007 -0.029 -0.014 -0.009 0.014 -0.003 0.004 -0.001 0.009	Standard error 0.020 0.013 0.014 0.026 0.017 0.017 0.017 0.025 0.015 0.018 0.010 0.024 0.015	Variance 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	Lower limit -0.010 -0.019 -0.043 -0.025 -0.076 -0.026 -0.063 -0.038 -0.058 -0.016 -0.037 -0.017 -0.049 -0.021	Upper limit 0.069 0.034 0.002 0.030 0.025 0.040 0.005 0.040 0.040 0.040 0.044 0.032 0.025 0.047 0.039	1.458 0.561 -1.809 0.147 -1.002 0.399 -1.693 -1.127 -0.368 0.909 -0.142 0.386 -0.040 0.567	0.145 0.575 0.071 0.883 0.316 0.690 0.260 0.760 0.760 0.363 0.887 0.699 0.968 0.571	Favors (15
STATIN BETA-BLOCKER ACEI/ARB	EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722 811 / 966 961 / 1357 468 / 722 848 / 966 945 / 1357 500 / 722	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721 802 / 963 999 / 1355 474 / 721 832 / 963 947 / 1355 500 / 721	difference 0.029 0.008 -0.021 -0.026 0.007 -0.029 -0.014 -0.009 0.014 -0.003 0.004 -0.001 -0.009 -0.017	Standard error 0.020 0.013 0.011 0.014 0.026 0.017 0.012 0.015 0.018 0.010 0.025 0.018 0.010	Variance 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	Lower limit -0.010 -0.019 -0.043 -0.025 -0.026 -0.026 -0.063 -0.038 -0.058 -0.016 -0.037 -0.017 -0.049 -0.021 -0.049	Upper limit 0.069 0.034 0.002 0.025 0.040 0.025 0.040 0.044 0.022 0.025 0.044 0.025 0.047 0.039 0.014	1.458 0.561 -1.809 0.147 -1.002 0.399 -1.693 -1.127 -0.368 0.909 -0.142 0.386 -0.040 0.567 -1.082	0.145 0.575 0.071 0.883 0.316 0.690 0.260 0.713 0.260 0.260 0.713 0.363 0.887 0.699 0.968 0.571 0.279	Favors (15
STATIN BETA-BLOCKER ACEI/ARB	EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY SMART DATE EXCELLENT PRODIGY	Short term DAPT 604 / 722 876 / 966 1212 / 1357 427 / 722 811 / 966 961 / 1357 468 / 722 848 / 966 945 / 1357 500 / 722 844 / 966	Long term DAPT 582 / 721 866 / 963 1238 / 1355 445 / 721 802 / 963 999 / 1355 474 / 721 832 / 963 947 / 1355 500 / 721 833 / 963	difference 0.029 0.008 -0.021 0.002 -0.026 0.007 -0.029 -0.014 -0.009 0.014 -0.003 0.004 -0.001 0.009	Standard error 0.020 0.013 0.014 0.026 0.017 0.017 0.017 0.025 0.015 0.018 0.010 0.024 0.015	Variance 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	Lower limit -0.010 -0.019 -0.043 -0.025 -0.076 -0.026 -0.063 -0.038 -0.058 -0.016 -0.037 -0.017 -0.049 -0.021	Upper limit 0.069 0.034 0.002 0.030 0.025 0.040 0.005 0.040 0.040 0.040 0.044 0.032 0.025 0.047 0.039	1.458 0.561 -1.809 0.147 -1.002 0.399 -1.693 -1.127 -0.368 0.909 -0.142 0.386 -0.040 0.567	0.145 0.575 0.071 0.883 0.316 0.690 0.260 0.760 0.760 0.363 0.887 0.699 0.968 0.571	Favors (15

Figure 1.

Forest plot comparing medical therapy compliance rates among six months' versus 12 months' dual antiplatelet therapy groups. (a) Medical therapy at baseline and (b) Medical therapy at Discharge.

ACEI/ARB: angiotensin converting enzyme inhibitor/angiotensin receptor blocker; CI: confidence interval; DAPT: dual antiplatelet therapy; GDMT: guideline directed medical therapy; PPI: proton pump inhibitor

					Ctable		Medica	Medical therapy at baseline (%)	aseline (%)		Medica	Medical therapy at discharge (%)	lischarge (%	()	
Study/year	DAPT duration	No. of patients	Age (mean)	Men (%)	CAD (%)	ACS (%)	Statin	Beta- blockers	ACE I/ARB	GDMT	Statin	Beta- blockers	ACE I/ARB	GDMT	CR ₀ B
EXCELLENT/ 2012 ¹	6 months	722	63.0	65.1	48.9	51.1		,	,	,	85	60.1	65.8	69.2	* * * * * *
	12 months	721	62.4	63.9	48.0	52.0		·	ı	ı	81.9	62.6	66.7	69.4	
PRODIGY/20125	6 months	983	67.9	76.0	25.4	74.6	91.0	84.6	87.0	87.3	90.7	84.0	87.7	87.4	****
	24 months	987	67.8	77.4	26.0	74.2	92.1	83.6	84.3	86.3	89.9	83.3	86.4	86.5	
ISAR SAFE/ 2014 ²	6 months	1998	67.2	80.7	59.5	39.8	95.0	83.2	81.7	86.7	ī	ı		·	* * * *
	12 months	2007	67.2	80.5	59.1	40.3	94.4	83.8	82.7	87.0	ı		ı		
SMART DATE/2018 ⁴	6 months	1357	62.0	74.9	2.3	7.76	ī	ı	,		89.3	70.8	69.7	76.6	* * * * * *
	12 months	1355	62.2	75.9	1.7	98.3	ī	ı	,	ı	91.4	73.7	6.69	78.3	

of Xience/Promus Versus Cypher to Reduce Late Loss After Stenting; GDMT: guideline directed medical therapy; ISAR SAFE: Intracoronary Stenting and Antithrombotic Regimen: Safety and Efficacy of 6 Months Dual Antiplatelet Therapy After Drug-Eluting Stenting; ProDIGY: Prolonging Dual Antiplatelet Treatment After Grading Stent-Induced Intimal Hyperplasia); SMART-DATE: six-month versus ACEI/ARB: angiotensin-converting enzyme inhibitor/angiotensin receptor blocker; ACS: Acute Coronary Syndrome; CAD: coronary attery disease; CR0B: Cochrane risk of bias; EXCEILLENT: Efficacy 12-month or longer dual antiplatelet therapy after percutaneous coronary intervention in patients with acute coronary syndrome.

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Table 1.

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