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Factors Associated With Premature Clopidogrel Discontinuation After Drug-Eluting Stent Implantation

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Background: Premature discontinuation of clopidogrel after drug-eluting stent (DES) implantation increases the risk of adverse cardiac events. Factors associated with premature discontinuation, however, are poorly understood.
Methods: Patients who discontinued clopidogrel before 1 year after percutaneous coronary intervention (PCI) with DES were compared to patients who continued clopidogrel for at least 1 year in this retrospective cohort study. Patients with cardiogenic shock were excluded. Reasons for discontinuation of clopidogrel were also collected. Insurance was categorized as private, Medicare, Medicaid, and uninsured. Multivariable logistic regression, stratified by age ≥65 years, was performed to identify socioeconomic and clinical factors independently associated with premature (<1 year) clopidogrel discontinuation.
Results: Among 4841 patients that received DES, 21.9% discontinued clopidogrel before 1 year. The most common reasons for clopidogrel discontinuation were physician decision (56.9%) and bleeding (16.9%). Overall, 53.8% of patients had private insurance, 42.1% Medicare, 2.9% Medicaid, and 1.2% were uninsured. Median household income by population was not associated with premature discontinuation in the overall cohort. Among the population <65 years, patients with Medicare, lack of insurance, major bleeding, and history of PCI or congestive heart failure were more likely to discontinue clopidogrel prematurely. For the population ≥65 years, patients on warfarin therapy or with history of PCI were more likely, and patients with history of hypertension or CABG were less likely, to discontinue clopidogrel prematurely (Table).

	Age <65			Age ≥65		
	Odds ratio	95% CI	p value	Odds ratio	95% CI	p value
Medicare	1.64	1.06-2.53	0.03	1.04	0.77-1.42	0.78
Medicaid	1.04	0.55-1.97	0.89	1.02	0.24-4.27	0.98
Uninsured	3.37	1.66-6.85	<0.001	N/A	N/A	N/A
African-American	1.24	0.91-1.69	0.17	1.2	0.91-1.60	0.2
Warfarin	0.95	0.49-1.87	0.89	1.86	1.26-2.75	0.002
Major bleeding	3.68	1.11-12.1	0.03	2.8	0.73-10.7	0.13
Hematocrit (per 5%)	1.01	0.95-1.08	0.71	0.88	0.77-1.00	0.05
Male	1.23	0.91-1.67	0.18	1.01	0.77-1.32	0.95
Acute Coronary Syndrome	1.12	0.76-1.64	0.58	1.29	0.89-1.89	0.18
Previous PCI	1.75	1.33-2.31	<0.001	1.38	1.07-1.78	0.01
Previous CABG	0.9	0.62-1.30	0.56	0.73	0.54-0.98	0.04
Hypertension	0.86	0.59-1.24	0.41	0.64	0.44-0.92	0.02
Congestive heart failure	1.76	1.16-2.68	0.008	1.36	0.96-1.91	0.08

Conclusions: Premature discontinuation of clopidogrel is common among patients undergoing PCI with DES and is often secondary to physician decision rather than noncompliance. Premature discontinuation is associated with both insurance status and clinical factors.

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Eptifibatide and Abciximab are associated with similar outcomes when used during Primary Percutaneous Coronary Intervention for ST-elevation myocardial infarction

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Background: Glycoprotein IIb/IIIa inhibitors are recommended by guidelines in patients with ST-segment elevation myocardial infarction (STEMI) treated with primary percutaneous coronary intervention (PPCI). There are few studies directly comparing these two agents. The aim of this study was to compare the effectiveness of eptifibatide relative to abciximab in patients with STEMI treated with PPCI.
Methods: This was an observational cohort study of 2083 patients who received a GPIIb/IIIa inhibitor whilst undergoing primary percutaneous coronary intervention (PPCI) from 2006 to 2012. Patients who did not receive a GPIIb/IIIa inhibitor were excluded. The primary end-point was the first major adverse cardiac event (MACE) defined as death, non-fatal myocardial infarction, stroke or target vessel revascularisation.
Results: 1522 patients received abciximab and 561 received eptifibatide. Differences in baseline characteristics are outlined in Table 1. Patients receiving eptifibatide had higher rates of previous PCI and hypercholesterolaemia and were more likely to undergo a procedure from the radial route. Unadjusted Kaplan-Meier analysis revealed no significant difference in 1-year event rates between patients given eptifibatide versus abciximab. Age-adjusted Cox analysis demonstrated no difference in 1 year outcome between abciximab and eptifibatide (HR 1.01 [95% CI 0.73-1.39]), which persisted after multivariate adjustment (HR 1.37 [95% CI 0.93-1.96]). Regression adjustment incorporating a propensity score (age, gender, ethnicity, previous MI, PCI or CABG, diabetes, hypertension, hypercholesterolaemia, smoking status, presence or absence of shock, and ejection fraction) into the hazards model as a covariate, showed no difference in outcome (HR 1.21 [95% CI 0.83-1.54]).

	Eptifibatide (n = 561)	Abciximab (n = 1522)	p value
Age	63.88±14.1	62.10±16.1	0.098
Gender (female)	139 (24.8%)	349(22.9%)	0.382
Previous MI	89(15.9%)	189(12.8%)	0.071
Previous CABG	23(4.1%)	40(2.7%)	0.114
Previous PCI	72 (12.8%)	139 (9.4%)	0.028
Hypercholesterolaemia	298 (53.1%)	462 (42.4%)	<0.001
Hypertension	261(46.5%)	615(45.0%)	0.546
DM	93(18.0%)	268(17.8%)	0.947
eGFR<60	112(19.9%)	315 (20.7%)	0.851
MV disease	315(56.6%)	809(57.3%)	0.686
Card Shock	29(5.2%)	94(6.3%)	0.404
Access (radial)	339 (60.5%)	722(48.3%)	<0.001
Procedural Success	524 (93.4%)	1407(92.4%)	0.139

Conclusions: This observational data suggests eptifibatide is associated with similar outcomes to abciximab in patients with STEMI undergoing PPCI.

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Is There a Therapeutic Window For Platelet Responsiveness Among PCI Patients? Analysis from the ADAPT-DES Study

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Background: Patients undergoing stent implantation with high platelet reactivity (HPR) on clopidogrel have a greater incidence of adverse ischemic events. However, low HPR may increase major bleeding, which can also influence mortality.
Methods: ADAPT-DES was an 8,583 pt prospective, multicenter study of pts receiving DES; routine platelet function testing (VerifyNow) was performed following clopidogrel loading. We sought to characterize the association between HPR and stent thrombosis (ST) and major bleeding at 1 year by separating pts into quintiles of HPR.
Results: The median PRU of the 5 quintiles was 57, 130, 187, 244, and 317 respectively (most to least reactive); 42.7% of patients had HPR as defined by PRU>208. HPR was associated with 1-year ST (1.3% vs. 0.5%, p=0.0001), but was also protective from major bleeding (5.6% vs. 6.7%, p=0.04); both types of events were independent predictors of 1-year mortality. There was a graded association between PRU quintiles and ST (Table), whereas for major bleeding, the highest risk occurred in the lowest PRU quintile, a finding that was significant in multivariable

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