



Complete Summary

GUIDELINE TITLE

Prevention of premature discontinuation of dual antiplatelet therapy in patients with coronary artery stents.

BIBLIOGRAPHIC SOURCE(S)

Grines CL, Bonow RO, Casey DE Jr, Gardner TJ, Lockhart PB, Moliterno DJ, O'Gara P, Whitlow P, American Heart Association, American College of Cardiology, Society for Cardiovascular Angiography and Interventions, American College of Surgeons, American Dental Association, American College of Physicians. Prevention of premature discontinuation of dual antiplatelet therapy in patients with coronary artery stents: a science advisory from the American Heart Association, American College of Cardiology, Society for Cardiovascular Angiography [trunc]. *Circulation* 2007 Feb 13;115(6):813-8. [36 references] [PubMed](#)

GUIDELINE STATUS

This is the current release of the guideline.

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SCOPE

DISEASE/CONDITION(S)

- Coronary artery disease
- Ischemic cardiovascular events associated with coronary artery stents (e.g., stent thrombosis, myocardial infarction, death)

GUIDELINE CATEGORY

Counseling
Management
Prevention

CLINICAL SPECIALTY

Cardiology
Dentistry
Internal Medicine
Surgery

INTENDED USERS

Dentists
Health Care Providers
Patients
Physicians

GUIDELINE OBJECTIVE(S)

To emphasize the potential complications of premature discontinuation of thienopyridine therapy and to address potential strategies to minimize this occurrence

TARGET POPULATION

Patients who have received coronary artery stents within the past year

INTERVENTIONS AND PRACTICES CONSIDERED

1. Continuation of dual antiplatelet therapy (aspirin, thienopyridines) for 12 months after placement of drug-eluting stents
2. Education of patients and healthcare providers about hazards of premature discontinuation of antiplatelet therapy
3. Deference of elective procedures with significant risk of bleedings
4. Continuation of aspirin if thienopyridine therapy is discontinued

MAJOR OUTCOMES CONSIDERED

- Rates of stent thrombosis, myocardial infarction (MI), and death
- Ratio of death to nonfatal MI

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

The cost of clopidogrel (approximately \$4 daily) has been cited as one reason patients discontinue (or do not renew) their therapy. It is unclear whether the introduction of modestly lower-cost generic clopidogrel will significantly affect this issue.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This statement was approved by the American Heart Association Science Advisory and Coordinating Committee on December 21, 2006, by the American College of Cardiology on December 28, 2006, by the Society for Cardiovascular Angiography and Interventions on December 20, 2006, by the American College of Surgeons on December 16, 2006, and by the American Dental Association on December 17, 2006.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Thienopyridine therapy in combination with aspirin has become the mainstay antiplatelet treatment strategy for the prevention of stent thrombosis. Premature discontinuation of antiplatelet therapy markedly increases the risk of stent thrombosis, a catastrophic event that frequently leads to myocardial infarction (MI) and/or death. Factors contributing to premature cessation of thienopyridine therapy include drug cost, physician/dentist instructions to patients to discontinue therapy before procedures, and inadequate patient education and understanding about the importance of continuing therapy.

To eliminate premature discontinuation of thienopyridine therapy, the advisory group gives the following recommendations:

1. Before implantation of a stent, the physician should discuss the need for dual antiplatelet therapy. In patients not expected to comply with 12 months of thienopyridine therapy, whether for economic or other reasons, strong consideration should be given to avoiding a drug-eluting stent (DES).
2. In patients who are undergoing preparation for percutaneous coronary intervention and are likely to require invasive or surgical procedures within the next 12 months, consideration should be given to implantation of a bare-metal stent or performance of balloon angioplasty with provisional stent implantation instead of the routine use of a DES.
3. A greater effort by healthcare professionals must be made before patient discharge to ensure patients are properly and thoroughly educated about the reasons they are prescribed thienopyridines and the significant risks associated with prematurely discontinuing such therapy.
4. Patients should be specifically instructed before hospital discharge to contact their treating cardiologist before stopping any antiplatelet therapy, even if instructed to stop such therapy by another healthcare provider.
5. Healthcare providers who perform invasive or surgical procedures and are concerned about periprocedural and postprocedural bleeding must be made aware of the potentially catastrophic risks of premature discontinuation of thienopyridine therapy. Such professionals who perform these procedures should contact the patient's cardiologist if issues regarding the patient's antiplatelet therapy are unclear, to discuss optimal patient management strategy.
6. Elective procedures for which there is significant risk of perioperative or postoperative bleeding should be deferred until patients have completed an appropriate course of thienopyridine therapy (12 months after DES implantation if they are not at high risk of bleeding and a minimum of 1 month for bare-metal stent implantation).
7. For patients treated with DES who are to undergo subsequent procedures that mandate discontinuation of thienopyridine therapy, aspirin should be continued if at all possible and the thienopyridine restarted as soon as possible after the procedure because of concerns about late-stent thrombosis.
8. The healthcare industry, insurers, the US Congress, and the pharmaceutical industry should ensure that issues such as drug cost do not cause patients to prematurely discontinue thienopyridine therapy and to thus incur catastrophic cardiovascular complications.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Prevention of stent thrombosis and associated myocardial infarction and death

POTENTIAL HARMS

- Dual antiplatelet therapy is not without risk. Like all antithrombotic agents, both aspirin and clopidogrel increase the risk of bleeding compared with placebo. When compared with aspirin, clopidogrel may be associated with lower risk of gastrointestinal bleeding. However, when clopidogrel was combined with aspirin and administered for prolonged duration (up to 28 months), randomized trials demonstrated an absolute increase (ranging from 0.4% to 1.0%) in major bleeding, compared with aspirin alone.
- The likelihood of increased bleeding and/or an increased requirement for blood transfusion in patients undergoing major noncardiac surgery can be inferred from reports of increased bleeding when cardiac surgery (including off-pump coronary bypass grafting) is undertaken in patients taking a thienopyridine drug. Independent documentation of the scope of this risk of increased bleeding during noncardiac surgery, however, is not available.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness
Safety
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2007 Jan

GUIDELINE DEVELOPER(S)

American Heart Association - Professional Association

SOURCE(S) OF FUNDING

American Heart Association

GUIDELINE COMMITTEE

American Heart Association
American College of Cardiology
Society for Cardiovascular Angiography and Interventions
American College of Surgeons
American Dental Association
(with representation from) American College of Physicians

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Writing Committee Members: Cindy L. Grines, MD, FACC; Robert O. Bonow, MD, FAHA, FACC; Donald E. Casey, Jr, MD, MPH, MBA, FACP; Timothy J. Gardner, MD, FAHA, FACC, FACS; Peter B. Lockhart, DDS, FDS RCSEd; David J. Moliterno, MD, FAHA, FSCAI, FACC; Patrick O'Gara, MD, FAHA, FACC; Patrick Whitlow, MD, FAHA, FACC

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

The American Heart Association, the American College of Cardiology, the Society for Cardiovascular Angiography and Interventions, the American College of Surgeons, and the American Dental Association make every effort to avoid any actual or potential conflicts of interest that may arise as a result of an outside relationship or a personal, professional, or business interest of a member of the writing panel. Specifically, all members of the writing group are required to complete and submit a Disclosure Questionnaire showing all such relationships that might be perceived as real or potential conflicts of interest.

Writing Group Disclosures

Writing Group Member	Organization Represented	Employment	Research Grant	Other Research Support	Speakers' Bureau/Honoraria	Ownership Interest	Consultant/Advisory Board	Other
Cindy L. Grines	AHA Representative	William Beaumont Hospital	None	None	None	None	None	None
Robert O. Bonow	AHA Representative	Northwestern University	None	None	None	None	None	None
Donald E. Casey, Jr	ACP Representative	Atlantic Health	None	None	None	None	None	None
Timothy J. Gardner	ACS Representative	Christiana Care Health System	None	None	None	None	None	None
Peter B. Lockhart	ADA Representative	Carolinas Medical Center	None	None	None	None	None	None
David J. Moliterno	SCAI Representative	University of Kentucky	None	None	None	None	None	None
Patrick O'Gara	ACC Representative	Brigham and Women's Hospital	None	None	None	None	None	None
Patrick Whitlow	ACC Representative	Cleveland Clinic	None	None	None	None	ICON Interventional; Systems,* Medlogics*	None

AHA indicates American Heart Association; ACP, American College of Physicians; ACS, American College of Surgeons; ADA, American Dental Association; SCAI, Society for Cardiovascular Angiography and Interventions; and ACC, American College of Cardiology.

This table represents the relationships of writing group members that may be perceived as actual or reasonably perceived conflicts of interest as reported on the Disclosure Questionnaire, which all members of the writing group are required to complete and submit. A relationship is considered to be "significant" if (1) the person receives \$10 000 or more during any 12-month period or 5% or more of the person's gross income; or (2) the person owns 5% or more of the voting stock or share of the entity or owns \$10 000 or more of the fair market value of the entity. A relationship is considered to be "modest" if it is less than "significant" under the preceding definition.

*Modest

Reviewer Disclosures

Reviewer	Employment	Research Grant	Other Research Support	Speakers' Bureau/Honoraria	Expert Witness	Ownership Interest	Consultant/Advisory Board	O
Elliott M. Antman	Brigham and Women's Hospital	Eli Lilly*	None	None	None	None	None	N
Gregory J. Dehmer	Texas A&M University College of Medicine and Scott & White Clinic	None	None	None	None	None	None	N
T. Bruce Ferguson	East Carolina University	None	None	None	None	None	None	N
Raymond J. Gibbons	Mayo Clinic	Radiant Medical,** KAI Pharmaceuticals,** TargeGen,** TherOx**	None	None	None	None	Hawaii Biotech,* TIMI 37A*	N
Arthur H. Jeske	University of Texas Health Science Center, Houston	None	None	None	None	None	None	N
Vincenza Snow	American College of Physicians	None	None	None	None	None	None	N

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*Modest

**Significant

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This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the [American Heart Association Web site](#).

Print copies: Available from the American Heart Association, Public Information, 7272 Greenville Ave, Dallas, TX 75231-4596; Phone: 800-242-8721

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI Institute on January 9, 2008. The information was verified by the guideline developer on February 12, 2008.

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