Journal of the American College of Cardiology

Volume 69, Issue 2, 17 January 2017, Pages 176-185

Original Investigation

Cangrelor With and Without Glycoprotein IIb/IIIa Inhibitors in Patients Undergoing Percutaneous Coronary Intervention

MuthiahVaduganathanMD, MPH[a] Robert A.HarringtonMD[b] Gregg W.StoneMD[c] Efthymios N.DeliargyrisMD[d] Ph. GabrielStegMD[ef] C. MichaelGibsonMS, MD[g] Christian W.HammMD[h] Matthew J.PriceMD[i] AlbertoMenozziMD[j] JaynePratsPhD[d] StevenElkinMS[d] Kenneth W.MahaffeyMD[b] Harvey D.WhiteDSc[k] Deepak L.BhattMD, MPH[a]

CHAMPION Investigators

Show more

https://doi.org/10.1016/j.jacc.2016.10.055

Get rights and content

Referred to by Somjot S. Brar

Cangrelor

Journal of the American College of Cardiology, Volume 69, Issue 2, 17 January 2017, Pages 186-188

PDF (111KB)

Abstract

Background

Cangrelor, an intravenous, reversible $P2Y_{12}$ antagonist, is approved for use in patients undergoing percutaneous coronary intervention (PCI).

Objectives

This study sought to evaluate the efficacy and safety of cangrelor compared with clopidogrel in subgroups that did and did not receive glycoprotein IIb/IIIa inhibitors (GPIs).

Methods

This pooled, patient-level analysis of the 3 CHAMPION (Cangrelor versus Standard Therapy to Achieve Optimal Management of Platelet Inhibition) trials analyzed all randomized patients who underwent PCI and received the study drug (n = 24,902). Only bailout/rescue GPI use was permitted, except in CHAMPION PCI, in which routine or bailout/rescue GPI use was at the site investigator's discretion. The primary efficacy endpoint was the composite of all-cause mortality, myocardial infarction, ischemia-driven revascularization, or stent thrombosis at 48 h after randomization.

Results

Overall, 3,173 patients (12.7%) received a GPI, most commonly eptifibatide (69.4%). Despite variation in indications for GPIs, baseline characteristics were well balanced between the cangrelor and clopidogrel arms in subsets receiving and not receiving GPIs. Rates of the primary composite endpoint were lower with cangrelor compared with clopidogrel in patients who did (4.9% vs. 6.5%; odds ratio [OR]: 0.74; 95% confidence interval [CI]: 0.55 to 1.01) or did not receive a GPI (3.6% vs. 4.4%; OR: 0.82; 95% CI: 0.72 to 0.94; P_{int} = 0.55). Cangrelor did not increase the primary safety endpoint, GUSTO-defined severe/life-threatening bleeding, in patients who did (0.4% vs. 0.5%; OR: 0.71; 95% CI: 0.25 to 1.99) or did not receive GPIs (0.2% vs. 0.1%; OR: 1.56; 95% CI: 0.80 to 3.04; P_{int} = 0.21). GPI use was associated with increased risk of bleeding in both treatment arms.

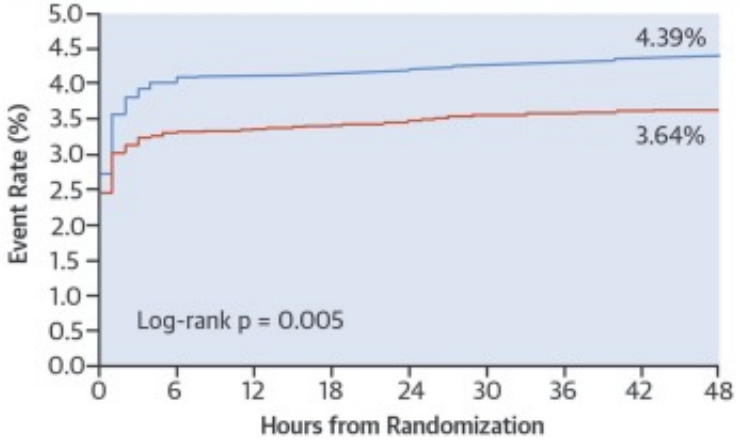
Conclusions

Cangrelor's efficacy in reducing ischemic complications in patients undergoing PCI was maintained irrespective of GPI administration. GPI use was associated with substantially higher bleeding rates, regardless of the randomization to cangrelor or clopidogrel. (A Clinical Trial to Demonstrate the Efficacy of Cangrelor [PCI]: NCT00305162; Cangrelor Versus Standard Therapy to Achieve Optimal Management of Platelet Inhibition [PLATFORM]: NCT00385138; A Clinical Trial Comparing Cangrelor to Clopidogrel Standard Therapy in Subjects Who Require Percutaneous Coronary Intervention [PCI] [CHAMPION PHOENIX] [CHAMPION]: NCT01156571)

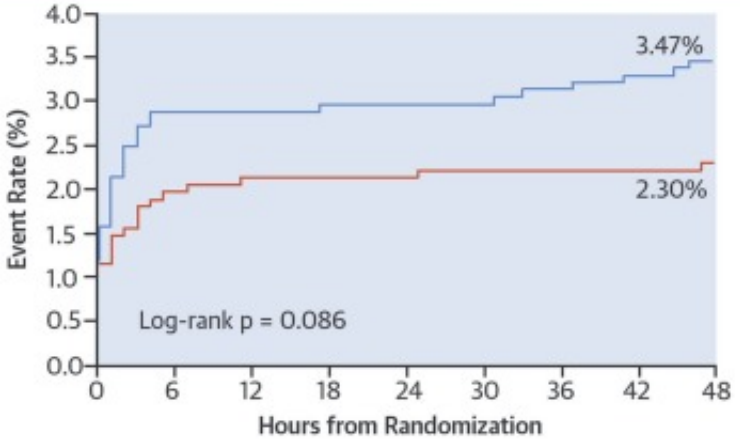
Central Illustration

CENTRAL ILLUSTRATION: Cangrelor and Glycoprotein IIb/IIIa Inhibitors: Kaplan-Meier Failure Curves for the Primary Efficacy Endpoint

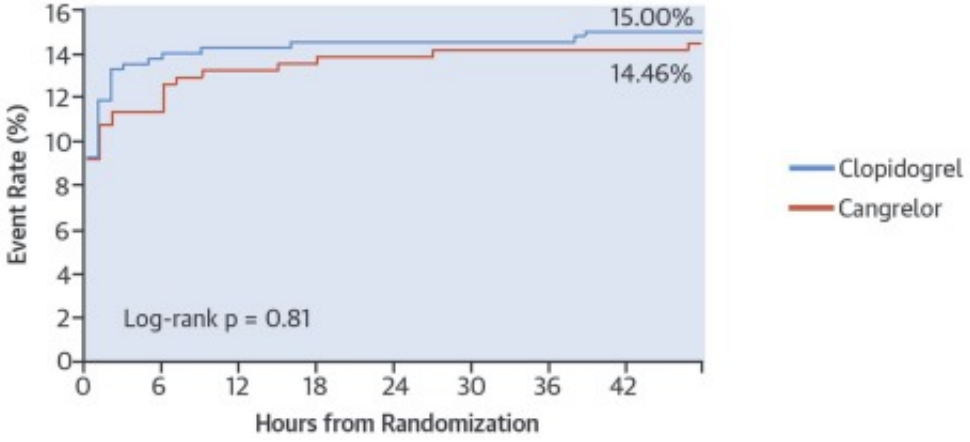
A. No GPI



B. Routine GPI



C. Bailout/Rescue GPI



Vaduganathan, M. et al. J Am Coll Cardiol. 2017;69(2):176-85.

Download high-res image (571KB) Download full-size image

Key Words

antiplatelet therapybleedingcoronary artery diseaseoutcomes

Abbreviations and Acronyms

CHAMPIONCangrelor versus Standard Therapy to Achieve Optimal Management of Platelet InhibitionCIconfidence intervalGPIglycoprotein IIb/IIIa inhibitorGUSTOGlobal Use of Strategies to Open Occluded Coronary ArteriesMImyocardial infarctionmITTmodified intention-to-treatORodds ratioPCIpercutaneous coronary interventionSTstent thrombosis

The Medicines Company supported the CHAMPION program.

Dr. Harrington has served on advisory boards and received honoraria from Amgen, Gilead Sciences, Merck, MyoKardia, The Medicines Company, and WebMD; received research funding from AstraZeneca, CSL Behring, GlaxoSmithKline, Merck, Portola, Regado, Sanofi, The Medicines Company, and Janssen; has ownership in SignalPath, Scanadu, MyoKardia, and Element Science; serves on the Board of Directors of the American Heart Association, Scanadu, Signal Path, and Stanford Healthcare; and serves on the science board of Element Science and Adverse Events. Dr. Stone has received honoraria from Boston Scientific, InspireMD, Atriaum, Eli Lilly, and Daiichi-Sankyo; and is in a partnership with AstraZeneca. Dr. Deliargyris, Dr. Prats, and Mr. Elkin are employees of The Medicines Company. Dr. Steg has received research funding (to INSERM U1148) from Merck, Sanofi, and Servier; has received speaking or consultant fees from Amarin, AstraZeneca, Bayer, Boehringer Ingelheim, Bristol-Myers Squibb, CSL-Behring, Daiichi-Sankyo, GlaxoSmithKline, Janssen, Lilly, Merck, Novartis, Pfizer, Regeneron, Roche, Sanofi, Servier, and The Medicines Company; and has stock ownership in Aterovax. Dr. Gibson has received honoraria

from The Medicines Company. Dr. Hamm has received honoraria from AstraZeneca, Sanofi, and Lilly; and research funding from AstraZeneca and The Medicines Company. Dr. Price has received honoraria from AstraZeneca, Merck & Co., Accriva Diagnostics, and The Medicines Company. Dr. Menozzi has received honoraria from AstraZeneca and Correvio. Dr. Mahaffey has received research funding from Amgen, Daiichi, Johnson & Johnson, Medtronic, Merck, St Jude, and Tenax; has received consultant fees from the American College of Cardiology, AstraZeneca, BAROnova, Bayer, Boehringer Ingelheim, Bio2 Medical, Bristol-Myers Squibb, Cubist, Eli Lilly, Elsevier, Epson, Forest, GlaxoSmithKline, Johnson & Johnson, Medtronic, Merck, Mt. Sinai, Myokardia, Omthera, Portola, Purdue, Springer, The Medicines Company, Theravance, Vindico, and WebMD; and owns stock in BioPrint Fitness. Dr. White has received honoraria from AstraZeneca; research funding from Sanofi, Eli Lilly, National Health Institute, GlaxoSmithKline, Merck Sharpe & Dohme, AstraZeneca, George Institute, Omthera Pharmaceuticals, Pfizer New Zealand, Intarcia Therapeutics Inc., Elsai Inc., DalGen Products and Services, and Daiichi-Sankyo Pharma Development; and has received consulting fees from AstraZeneca. Dr. Bhatt has served on the advisory boards for Cardax, Elsevier Practice Update Cardiology, Medscape Cardiology, Regado Biosciences; served on the Board of Directors of the Boston VA Research Institute and the Society of Cardiovascular Patient Care; served as Chair of the American Heart Association Quality Oversight Committee; served on data monitoring committees for the Duke Clinical Research Institute, Harvard Clinical Research Institute, Mayo Clinic, and Population Health Research Institute; received honoraria from the American College of Cardiology (Senior Associate Editor, *Clinical Trials and News*, ACC.org), Belvoir Publications (Editor in Chief, *Harvard Heart Letter*), Duke Clinical Research Institute (clinical trial steering committees), Harvard Clinical Research Institute (clinical trial steering committee), HMP Communications (Editor in Chief, *Journal of Invasive Cardiology*),*Journal of the American College of Cardiology* (Guest Editor; Associate Editor), Population Health Research Institute (clinical trial steering committee), Slack Publications (Chief Medical Editor,*Cardiology Today's Intervention*), Society of Cardiovascular Patient Care (Secretary/Treasurer), and WebMD (CME steering committees); has served as Deputy Editor, *Clinical Cardiology*, Vice-Chair of the NCDR-ACTION Registry Steering Committee, Chair of the VA CART Research and Publications Committee; received research funding from Amarin, Amgen, AstraZeneca, Bristol-Myers Squibb, Eisai, Ethicon, Forest Laboratories, Ischemix, Lilly, Medtronic, Pfizer, Roche, Sanofi, and The Medicines Company (including for his role as Co-Chair of the CHAMPION trials); received royalties from Elsevier (Editor, *Cardiovascular Intervention: A Companion to Braunwald's Heart Disease*); serves as site coinvestigator for Biotronik, Boston Scientific, and St. Jude Medical; is a trustee of the American College of Cardiology; and has performed unfunded research for FlowCo, PLx Pharma, and Takeda. All other authors have reported that they have no relationships relevant to the contents of this paper to disclose. A full list of the CHAMPION Investigators can be found in the Online Appendix.