**Title**
Doubling after CABG: Dual Antiplatelet Therapy after Coronary Artery Bypass Grafting

**Presenter**
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**Learning Objectives**

- Describe coronary artery bypass grafting and current guideline recommendations
- Discuss evidence for dual antiplatelet therapy after coronary artery bypass grafting
- Explain dual antiplatelet strategies and patient specific factors that influence decision-making

**Abstract**

Coronary artery bypass grafting (CABG) is one of the most common major cardiac surgeries. It involves creating new conduits around existing occluded coronary arteries. The most common complication is graft failure that can occur in a significant portion of patients at varying times after surgery. Ensuring graft patency is one of the easiest ways to avoid graft failure and occlusions. Antiplatelet agents have been shown to improve graft patency and are currently recommended after CABG. The practice of prescribing antiplatelets after CABG is currently variable, some providers prefer dual antiplatelet therapy, while others prefer single agent therapy. Current AHA/ACC guidelines recommend DAPT after CABG, with different recommendation strengths depending on the situation. There remains a hole in current literature on the best practices and possible factors influencing the decision.

**Questions**

1) What are the proposed mechanisms leading to graft failure? (SATA)

A. Intimal Hyperplasia
B. Vasospasm
C. Atherosclerosis
D. A and C

2) Current guidelines recommend DAPT after CABG with which of the following presentations?

A. Recent ACS
B. Recent PCI
C. Stable ischemic heart disease
D. All of the above

E. None of the above

3) DAPT has been shown to significantly improve clinical outcomes after CABG compared to aspirin alone in patients with SIHD

A. True

B. False

References

1. Shahjehan RD, Bhutta BS. Coronary Artery Disease. [Updated 2023 Feb 9]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK564304/

2. Bachar BJ, Manna B. Coronary Artery Bypass Graft. [Updated 2022 Aug 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK507836/

3. Levine GN, Bates ER, Bittl JA, et al. 2016 ACC/AHA Guideline Focused Update on Duration of Dual Antiplatelet Therapy in Patients With Coronary Artery Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2016;68(10):1082-1115. doi:10.1016/j.jacc.2016.03.513

4. Khan H, Kanny O, Syed MH, Qadura M. Aspirin Resistance in Vascular Disease: A Review Highlighting the Critical Need for Improved Point-of-Care Testing and Personalized Therapy. Int J Mol Sci. 2022;23(19):11317. Published 2022 Sep 26. doi:10.3390/ijms231911317

5. Fox KA, Mehta SR, Peters R, et al. Benefits and risks of the combination of clopidogrel and aspirin in patients undergoing surgical revascularization for non-ST-elevation acute coronary syndrome: the Clopidogrel in Unstable angina to prevent Recurrent ischemic Events (CURE) Trial. Circulation. 2004;110(10):1202-1208. doi:10.1161/01.CIR.0000140675.85342.1B

6. Gao G, Zheng Z, Pi Y, Lu B, Lu J, Hu S. Aspirin plus clopidogrel therapy increases early venous graft patency after coronary artery bypass surgery a single-center, randomized, controlled trial. J Am Coll Cardiol. 2010;56(20):1639-1643. doi:10.1016/j.jacc.2010.03.104

7. Kulik A, Le May MR, Voisine P, et al. Aspirin plus clopidogrel versus aspirin alone after coronary artery bypass grafting: the clopidogrel after surgery for coronary artery disease (CASCADE) Trial. Circulation. 2010;122(25):2680-2687. doi:10.1161/CIRCULATIONAHA.110.978007

8. Held C, Asenblad N, Bassand JP, et al. Ticagrelor versus clopidogrel in patients with acute coronary syndromes undergoing coronary artery bypass surgery: results from the PLATO (Platelet Inhibition and Patient Outcomes) trial. J Am Coll Cardiol. 2011;57(6):672-684. doi:10.1016/j.jacc.2010.10.029

9. Blasco-Colmenares E, Perl TM, Guallar E, et al. Aspirin plus clopidogrel and risk of infection after coronary artery bypass surgery. Arch Intern Med. 2009;169(8):788-796. doi:10.1001/archinternmed.2009.42

10. Saw J, Wong GC, Mayo J, et al. Ticagrelor and aspirin for the prevention of cardiovascular events after coronary artery bypass graft surgery. Heart. 2016;102(10):763-769. doi:10.1136/heartjnl-2015-308691

11. Zhao Q, Zhu Y, Xu Z, et al. Effect of Ticagrelor Plus Aspirin, Ticagrelor Alone, or Aspirin Alone on Saphenous Vein Graft Patency 1 Year After Coronary Artery Bypass Grafting: A Randomized Clinical Trial. JAMA. 2018;319(16):1677-1686. doi:10.1001/jama.2018.3197

12. Willemsen LM, Janssen PWA, Peper J, et al. Effect of Adding Ticagrelor to Standard Aspirin on Saphenous Vein Graft Patency in Patients Undergoing Coronary Artery Bypass Grafting (POPular CABG): A Randomized, Double-Blind, Placebo-Controlled Trial. Circulation. 2020;142(19):1799-1807. doi:10.1161/CIRCULATIONAHA.120.050749