# Composite bilateral internal thoracic artery grafts: Y not

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No current evidence supports the perceived increased risk with Y-grafts over in situ bilateral internal thoracic artery graft configuration.

**Central Message**

Every effort should be made to ensure well-functioning bilateral internal thoracic artery grafts before leaving the operating room, regardless of the configuration adopted.

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Despite increasing interest for additional arterial conduits during coronary artery bypass graft surgery, the quest for additional arterial conduits continues. The Arterial Revascularization Trial (ART) enrolled 3102 patients undergoing coronary artery bypass graft surgery for multivessel disease to compare survival after bilateral internal thoracic artery (BITA) over single internal thoracic artery grafting, and mid-term results (5 years) recently have been reported with no difference between the groups.[1] A possible explanation for the equipoise between the 2 groups is that the increased technical complexity of BITA grafts can result in increased rates of graft failure. In particular, composite BITA grafts (so-called Y-grafts) may be more prone to competitive flow and subsequent graft failure compared with in situ BITA grafts.[2] Whether BITA graft configuration influences clinical outcomes, however, remains unclear. Yanagawa and colleagues[3] compared Y-grafts versus in situ BITA grafts configuration pooling data from 2 randomized controlled trials and 6 observational studies. They found that the use of Y-graft was associated with greater distal anastomoses compared with the in situ graft, and there were no differences in perioperative or longer-term cardiovascular outcomes between the 2 groups.

The authors should be congratulated for their extensive literature search and sophisticated statistical analysis. Their findings support previous angiographic follow-up studies that showed excellent patency rates using both BITA graft configurations.[4]

It should be highlighted, however, that most of the studies included were largely underpowered to detect significant differences in hard clinical endpoints, and only 2 studies presented a follow-up longer than 5 years.[3] Moreover, the magnitude of the vascular bed for runoff, which is influenced by the degree of target stenosis, the vessel diameter, and diffuseness of disease, significantly influences the patency of arterial grafts, but this aspect was not analyzed.[5]

Finally, it remains unclear to what extent graft failure affects clinical outcome. Not all targets and relative grafts are of equal importance, with significant numbers of asymptomatic graft failures reported.[6] Therefore, comparable (mid-term) outcomes from Y- and in situ BITA grafts do not automatically translate into comparable patency rate.

Every effort should be made to ensure well-functioning BITA grafts before leaving the operating room regardless of the configuration adopted. Accordingly, intraoperative flow measurement through newly constructed grafts should be mandatory in modern coronary artery bypass grafting to improve surgical outcomes.

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