Invasive treatment of ACS: early or later on?

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In a recent online publication in the *Journal of the American College of Cardiology*, 30 December 2009, Damman from the group of de Winter (AMC, Amsterdam) published the five-year clinical outcome in the Invasive versus Conservative Treatment in Unstable coronary Syndromes (ICTUS)* trial. The ICTUS trial randomised 1200 patients to either an early invasive strategy or a selective invasive treatment strategy. Outcomes included a composite of death and myocardial infarction. The main findings of the recent study were that an early invasive strategy for managing patients with non-ST-segment elevation acute coronary syndrome (NSTEMI-ACS) was not better in the long run at preventing death or myocardial infarction than a more conservative approach. At five years, there was no significant benefit from coronary angiography with revascularisation within 48 hours when the groups were stratified by risk. These five-year data are consistent with earlier data reported from the ICTUS trial, which showed no benefits of early invasive management after one and three years of follow-up (de Winter et al, NEJM 2005; Hirsch et al, Lancet 2007). The present analysis therefore extends previous reports that, in patients presenting with NSTEMI-ACS and an elevated troponin T, an early invasive strategy is superior to a selective invasive strategy in reducing five-year death or myocardial infarction. Over five years, the revascularisation rates were 81% in the early invasive group and 60% in the selective invasive group. All-cause mortality was not significantly different between the early invasive and selective invasive groups (11.1 and 9.9%, respectively). Cumulative death or myocardial infarction rates were 22.3 and 18.1%, respectively, but the difference was again not significant. This (non-significant) increase in the early invasive group was primarily driven by an early increase in procedure-related myocardial infarctions and a trend toward higher late non-cardiovascular mortality. However, the early increase was not associated with increased cardiovascular mortality or myocardial infarctions during follow-up.

In an accompanying editorial, Bittl and Maron stated that patients with NSTEMI who stabilise on medical therapy can safely wait for an invasive evaluation. However, prolonged hospitalisation until intervention (1 day vs. 11 days) and higher rates of rehospitalisation (7.4 vs. 10.9%) are potential drawbacks of the delayed selective invasive strategy. The three-year ICTUS report clarified that the initial hospital stays were similar for patients assigned to the two strategies (6 days vs. 7 days, respectively), but these lengths of stay were somewhat longer than the hospitalisations in contemporary trials comparing early versus delayed intervention for ACS (2 days vs. 3 days, respectively).

The question remains, therefore, whether patients who wait for angiography have similar outcomes and levels of satisfaction to those undergoing direct interventional angiography. As a result, a dualistic approach will dominate the management of ACS. All patients with NSTEMI will require intensive medical therapy, but since almost all patients will ultimately undergo invasive procedures, the direct angiographic approach might be preferred by the interventional cardiologist. Anyway, the good news of ICTUS is that a selective invasive approach is a valuable alternative to an early invasive strategy for different clinical scenarios and that ICTUS allows physicians to adjust therapy. For example, low- or moderate-risk patients who stabilise on medical therapy can be managed conservatively and undergo delayed angiography when stress testing shows myocardial ischaemia. In addition, in patients with bleeding and NSTEMI, angiographic evaluation could be deferred without incurring additional risk. The ICTUS group should be complimented for having introduced a new important strategy with the aim to achieve optimal benefits for patients with NSTEMI. ■

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