Optimal timing of invasive evaluation after heart attack examined in randomised trial

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The optimal timing of invasive evaluation after a heart attack has been examined in a randomised trial. The late breaking results from the VERDICT trial are presented today in a Hot Line Session at ESC

Congress 2018.

Clinical outcome in patients with non-ST-segment elevation acute coronary syndrome (NSTE-ACS) has progressively improved within the last two decades, in part because of faster diagnosis with invasive coronary angiography, followed by the method of revascularisation deemed most appropriate (bypass surgery or inserting a stent). NSTE-ACS includes a type of heart attack labelled non-ST-segment elevation myocardial infarction (NSTEMI) and unstable angina.

ESC guidelines on NSTE-ACS recommend invasive examination and treatment within two hours (immediate invasive strategy) in patients at very high risk of death or myocardial infarction following an initial acute coronary syndrome, within 24 hours in those at high risk (early invasive strategy), and within 72 hours in patients at intermediate risk.

The VERDICT trial examined in a randomised set-up whether invasive coronary angiography and treatment (if deemed necessary) within 12 hours (very early invasive strategy) was superior to evaluation and treatment if necessary within 48 to 72 hours in high risk patients with NSTEMI and unstable angina.

The trial enrolled 2,147 patients with NSTEMI or unstable angina (inclusion criteria were either troponin rise and/or ST-segment/T-wave changes). Patients were randomised in a 1:1 ratio to very early coronary angiography and possible treatment within 12 hours or deferred coronary angiography and possible treatment within 48 to 72 hours. Patients were followed-up for at least 18 months for all-cause death, non-fatal myocardial infarction, hospital admission for refractory ischaemia, or hospital admission for heart failure (the primary endpoint).

The average age of patients was 64 years and 66 percent were men. A total of 1,075 patients were assigned to very early testing which was

performed a median of 4.7 hours after randomisation, whereas the 1,072 in the deferred group were examined a median of 61.6 hours after randomisation. Eight in ten patients had elevated biomarkers, 60 percent had ECG changes indicating new ischaemia, and nearly 50 percent had a GRACE score above 140 at the time of randomisation – all factors which qualify patients as high risk.

During a median follow-up of 4.3 years the primary endpoint occurred in 27.5 percent of the very early group and 29.5 percent of the deferred group (p=0.29). In the subgroup of patients with a GRACE score above 140, however, a very early invasive strategy improved outcome compared to a deferred strategy (hazard ratio [HR] 0.81, 95 percent confidence interval [CI] 0.67–1.00). There was no difference between groups in the rate of complications. There were fewer recurrent myocardial infarctions in the very early, compared to deferred, group (HR 0.73, CI 0.56–0.96, p=0.025).

Professor Thomas Engstrøm, study author, Copenhagen University Hospital, Denmark, said: "Very early diagnosis and treatment was not superior to the deferred strategy. The results suggest that postponing invasive examination and treatment for up to 72 hours is as good as a very early approach in patients with NSTE-ACS. In line with ESC guidelines, for the subgroup of NSTE-ACS patients with a GRACE score above 140, a very early invasive strategy may be indicated."

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