Lower rate of invasive revascularisation in acute coronary syndrome patients with significant stenosis on coronary angiography when angiography is performed on a diagnostics only hospital

Hvelplund, Anders; Galatius, Søren; Madsen, Mette; Rasmussen, Jeppe Nørgaard; Rasmussen, Søren; Abildstrøm, Steen Zabell; Madsen, Jan Kyst

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We investigated if there was a difference in the rate of invasive revascularisation (PCI and CABG) after coronary angiography (CAG) following first acute coronary syndrome (ACS) depending on the type of hospital performing the CAG.

### Background:
Denmark (population 5.5 million) has a universal health insurance coverage system and uniform national guidelines for the treatment of ACS. Invasive treatment of cardiac patients has been centralized to a few highly specialized units.

### Methods
- We identified, from the National Patient Registry, all patients hospitalized with ACS (both STEMI, non-STEMI and UAP) for the first time in 2005-2007. We included patients examined with CAG and with a significant stenosis as result. As a sensitivity analysis acute CAGs performed on day 0-1 were excluded as they are performed almost exclusively on centres. Patients were followed for 60 days.
- From the Danish Heart Registry procedures (CAG, PCI and CABG) were identified.
- Information on comorbidity, medicine use, socioeconomic status and vital status was available on each patient.
- Cox proportional-hazard models were used to estimate the difference between the 5 invasive centres and the 9 assisting centres in the rate of revascularisation within 60 days of the admission adjusting for explanatory variables.

### Results
We identified 24 910 patients With ACS (83.5% with myocardial infarction) of whom 18 236 patients who were examined with CAG. In all 13 964 (73%) were revascularised. Of 2207 patients having significant stenosis in one or more vessels from the diagnostics only hospitals there were 78% receiving revascularisation vs. 91% of the 12 596 patients from the invasive hospitals. Adjusting for known differences between the groups such as gender, age, number of stenotic vessels and the other variables mentioned, there was a hazard ratio (HR) of 0.37 (95% CI 0.35-0.39, p < 0.0001) of receiving revascularisation for the patients examined with CAG in the diagnostics only hospitals in comparison to those examined in the invasive centres. Excluding the acute CAGs (day 0-1) we found 2070 patients having significant stenosis from the diagnostics only hospitals and 78% received revascularisation vs. 84% of the 4661 patients from the invasive hospitals. This gave a HR of 0.55 (95% CI 0.52-0.59, p < 0.0001).

### Conclusion
ACS patients with a significant stenosis on the CAG are less likely to be revascularised when the CAG is performed in an assisting CAG centre.

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* Danish National Acute Myocardial Infarction Cohort Study