



Impact of the use of ultrasound contrast agent on the detection of thrombi in the left atrial appendage during transesophageal echocardiography (CONDOR study)

Henning Ebelt

Catholic Hospital St. Johann Nepomuk

Abstract:

Objectives: This study should determine the impact of the use of ultrasound contrast agent on the detection of thrombi in patients with atrial fibrillation who are scheduled for an interventional procedure.

Background: Atrial fibrillation (AF) carries the risk of thrombus formation in the left atrium (LA) and especially in the left atrial appendage (LAA). As recommended by current guidelines, a transesophageal echocardiography (TEE) is routinely performed in these patients to rule out thrombi before cardioversion (CV) or structural interventions like LAA closure (LAAC) or pulmonary vein isolation (PVI). However, in a given number of cases inconclusive results of the TEE may result. This study was performed to analyze whether the routine use of ultrasound contrast agent (UCA) has an influence on the frequency of thrombus detection and the ability to perform scheduled procedures.

Methods: In this prospective study in patients with AF who were scheduled for a subsequent interventional procedure, a TEE was performed first without and afterwards repeated with the use of UCA. The percentage of diagnostic findings regarding the prevalence of thrombus in the LAA with and without UCA were compared (thrombus present (T+), no thrombus (T-), inconclusive result (T+/-).

Results: 223 patients were prospectively included into the trial. The numbers of thrombus detection were as follows: without UCA: 17 T+ (7.6%), 154 T- (69.1%), 52 T +/- (23,3%); with UCA: 16 T+ (7.2%), 179 T- (80.3%), 28 T +/- (12.6%; $p < 0.01$). In 29 examinations (17.0%), the use of ECA had an impact on the treatment strategy so that 2 planned interventions were not performed due to detection of thrombi whereas in 27 cases (12.1%) interventions could be performed that would have been postponed otherwise ($p < 0.01$).

Conclusions: The use of echo contrast agent during TEE in patients with AF has a significant impact on the treatment strategy mostly due to an improved rule out of LAA thrombi.