

Aterotrombosi e Tromboembolismo arterioso: aspetti clinici

LEFT ATRIAL ENLARGEMENT AS A MARKER OF ADVERSE CLINICAL OUTCOMES: PRELIMINARY RESULTS OF A PROSPECTIVE COHORT STUDY

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Background and Aims. Left atrial enlargement (LAE) is a cardiac structural abnormality which signals adverse cardiovascular remodelling in response to chronic pressure and/or volume overload. LAE may be easily measured and graded with transthoracic echocardiography (TTE) using the left atrial volume index (LAVi), as suggested by current cardiac imaging guidelines, and has been linked to adverse cardiovascular outcomes. We have previously described a statistically significant association between LAE and 1-year cerebrovascular events in subjects without atrial fibrillation (AF) and ongoing anticoagulation. With this study, we aimed to assess the association between LAE and short-term all-cause mortality.

Methods. We carried out a prospective cohort study across three teaching hospitals in Milan, Italy (Bassini, Niguarda, San Paolo), including consecutive adults undergoing TTE between 2012 and 2023. Patients with a history of AF or receiving anticoagulants (for any indication) were excluded from the analysis. LAE was categorized using the LAVi as absent (≤34 mL/m2), mild (>34 and ≤41 mL/m2), moderate (>41 and ≤48 mL/m2), or severe (>48 mL/m2). The primary outcome was all-cause mortality within 1 year of the index echocardiogram. Multivariate logistic regression models were used to evaluate the independent association of LAE with 1-year all-cause mortality.

Results. We included 56,512 subjects with a median age of 67 years (47% female). Three thousand five hundred eighty-five subjects (6.3%) died within 1 year of the index TTE. In the multivariate analysis, all categories of LAE were associated with 1-year all-cause mortality compared with no LAE (mild: OR 1.5, 95% CI 1.4-1.7; moderate: OR 1.8, 95% CI 1.6-2.0; severe: OR 2.4, 95% CI 2.1-2.6). This association was independent of other clinically meaningful covariates, including age, diabetes mellitus, heart failure, left ventricular dysfunction, prior stroke and cardioactive treatments (including antiplatelet agents and statins). The association between LAE and all-cause mortality was evident also across low-risk subgroups, such as subjects ≤65 years of age (mild LAE vs normal LAVi: 2.2, 95% CI 1.7-2.8; moderate LAE vs normal LAVi: 3.1, 95% CI 2.2-4.4; severe LAE vs normal LAVi: 4.4, 95% CI 3.3-5.9), with no hypertension (mild LAE vs normal LAVi: 2.4, 95% CI 2.0-2.8; moderate LAE vs normal LAVi: 4.0, 95% CI 3.3-4.8; severe LAE vs normal LAVi: 6.3, 95% CI 5.4-7.4) and with no diabetes (mild LAE vs normal LAVi: 2.2, 95% CI 2.0-2.4; moderate LAE vs normal LAVi: 3.1, 95% CI 2.7-3.6; severe LAE vs normal LAVi: 5.1, 95% CI 4.6-5.6).

Conclusions. Our preliminary results suggest that, in subjects without AF and ongoing anticoagulation, LAE is significantly associated with short-term all-cause mortality. The increase in effect size with increasing degrees of LAE suggests the existence of a causal relationship between the two phenomena. The association between LAE and all-cause mortality was evident also in subjects nominally at low cardiovascular risk, suggesting that LAE may be an early indicator of frailty and poor prognosis in this subject population.