Abstract: P1258

Left atrial dimension and risk of cardiovascular outcomes in patients with and without atrial fibrillation: a systematic review and meta-analysis

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Topic(s):
Atrial Fibrillation - Epidemiology, Prognosis, Outcome

Citation:
BACKGROUND: The prognostic value of left atrial (LA) dimensions measured by transthoracic echocardiogram among patients with versus without atrial fibrillation (AF) is uncertain. We aimed to investigate the association of LA echocardiographic parameters with the risk of cardiovascular events in AF patients compared to non-AF patients.

METHODS: MEDLINE and EMBASE were searched from inception to July 2018. Records were retained if they studied the association between LA echocardiographic parameters and cardiovascular outcomes in AF patients, and in populations with no or less than 10% of AF patients. Left atrial dimensions had to be measured by transthoracic echocardiography, and parameters of interest were the following: LA diameter (LAD), LA diameter indexed to body surface (LADI), LA volume (LAV) and LA volume indexed to body surface (LAVI).

Data were independently abstracted by 2 reviewers and pooled using inverse variance random-effects meta-analysis. The primary outcome was incident stroke and thromboembolic events. Secondary outcomes were heart failure, all-cause mortality and major adverse cardiac events (MACE).

RESULTS: Twenty-three studies of AF patients (14’939 patients) and 69 studies of non-AF patients (52’654 patients) were included. Summary of the meta-analyses for the associations of LA parameters with cardiovascular outcomes is presented in the Figure. Increasing LAD was significantly associated with the risk of stroke and thromboembolic events in non-AF patients (P=0.03), but not among AF patients (P=0.27), and the association did not differ between population (P for difference=0.05) (Figure, A). Greater LADI was associated with risk of stroke and thromboembolic events in AF patients (P<0.001) and in non-AF patients (P=0.04), but the association did not differ between populations (P for difference=0.49). For MACE, increasing LADI was significantly associated with the outcome in AF patients (P<0.001) and in non-AF patients (P<0.001), but the association was stronger in non-AF populations (P for difference<0.001). Increasing LAVI was associated with high risk of MACE in AF patients (P=0.03) and in non-AF populations (P<0.001). Again, the correlation was stronger among non-AF patients (P for difference<0.001). Other associations did not differ between populations, and meta-analysis of LAV was not conducted by the limited number of studies.

CONCLUSIONS: Left atrial echocardiographic parameters are powerful predictors of adverse cardiovascular events, mainly among individuals without AF.
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