CIRCUITING INTERMEDIATE CD14++CD16+ MONOCYTES ARE INCREASED IN PATIENTS WITH ATRIAL FIBRILLATION AND REFLECT FUNCTIONAL REMODELING OF LEFT ATRIUM

Poster Contributions
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Background: Recent large clinical study demonstrated association of intermediate CD14++CD16+ monocytes (IM) with cardiovascular events. We investigated the possible role of IM in pathophysiology of atrial fibrillation (AF).

Methods: This case-control study included 30 AF patients (17 paroxysmal and 13 persistent AF patients) who were referred for catheter ablation, and 30 healthy controls. Patients with systemic diseases, including structural heart disease, hepatic or renal dysfunction, inflammation and others were excluded. Monocyte subset analysis was performed (three distinct monocyte subsets: classical CD14++CD16-, IM, and non-classical CD14+CD16++ monocytes). We compared monocyte subsets between them and also evaluated the correlation with other clinical findings.

Results: AF patients had a higher proportion of IM than controls (17.0±9.6% vs. 7.5±4.1%, P<0.001). Figure shows the representative examples. Multivariate analysis demonstrated that the IM was independently associated with the presence of AF (Odds ratio: 1.413; 95% confidence interval: 1.064-1.877, P=0.017). Furthermore, IM in persistent AF patients was higher than in paroxysmal AF (21.3±10.3% vs. 14.0±8.4%, P=0.017), IM negatively correlated with left atrial appendage flow velocity during sinus rhythm (r=-0.679, P=0.003) and positively with brain natriuretic peptide (r=0.439, P=0.015).

Conclusion: IM might be closely related to the pathogenesis of AF and reflect functional remodeling of left atrium.

Figure: Flow Cytometric Analysis of Monocyte Subsets