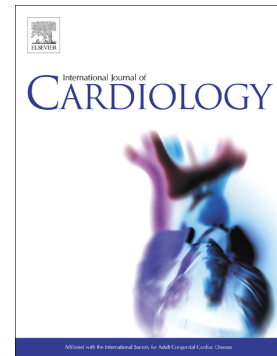


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Left atrial strains in cardiac amyloidosis -does its subtype matter?

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I am reading the paper of Meucci *et al.* which aimed to perform a comparative analysis of left atrial (LA) remodelling between Fabry disease (FD) and transthyretin cardiac amyloidosis (ATTR-CA).[1] It could be concluded that ATTR-CA is characterized by a more advanced structural and functional LA remodeling as compared to FD despite the similar degree of left ventricular hypertrophy. I found the paper interesting, but have some important comments. In case of two-dimensional (2D) speckle-tracking echocardiography (STE), LA strains are measured on loops generated in a selected two-dimensional (2D) plane, while in case of three-dimensional (3D) STE, digitally recorded 3D echocardiographic datasets help to create a virtual 3D cast, with which volumetric and functional (strain) analysis of a certain LA can be measured at the same time. While 2D-STE is an established procedure and its role is well supported by several studies in the field, 3D-STE is still subject of research, it needs of adequate training and dedicated equipment, suffers from many technical limitations and is not widespread enough.[2,3] In the study of Meucci *et al.*, 2D-STE was used, and mean reservoir LA strain of ATTR-CA patients proved to be 6.9%.[1] In a recent 3D-STE study aiming to compare LA parameters between light-chain (AL) CA and hypertrophic cardiomyopathy, radial, circumferential (CS) and longitudinal (LS) LA reservoir strains for AL-CA proved to be -9.7%, 11.9% and 11.2%, respectively.[2] Although the comparison is difficult due to methodological differences, results could highlight differences in LA strains between different types of CA like AL-CA versus ATTR-CA suggesting more pronounced abnormalities in case of the latter one in correspondence with previous findings by Versteynlein *et al.* [4] They found that LA reservoir strain was markedly lower in ATTR-CA as compared to AL-CA ($7.4 \pm 6.2\%$ vs. 13.6 ± 14.7 , $p = 0.017$).[4] In accordance with this findings, lower reservoir LA-LS and LA-CS could be detected in ATTR-CA patients as compared to that of AL-CA patients in the study by Aimo *et al.*[5] These results could suggest further comparative studies between CA subtypes using more recent imaging techniques including 3D-STE, which allows

more detailed volumetric and strain analysis using specific unidimensional and complex LA strains. Moreover, further studies are warranted in patients with suspected isolated atrial amyloidosis.[6] To achieve the sample size, when creating different subgroups of patients, a multicenter would be needed. Moreover, even at the same time as above, same sort of evaluation of the right atrium in the description of atrial cardiomyopathy would also be an interesting topic as regards to atrial fibrillation, differentiation between CA and FD, etc.[7,8]

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