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Multimodality imaging for myocardial injury in acute myocardial infarction and the assessment of valvular heart disease

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MULTIMODALITY IMAGING FOR MYOCARDIAL INJURY IN ACUTE MYOCARDIAL INFARCTION AND THE ASSESSMENT OF VALVULAR HEART DISEASE

1. In patients with anterior ST-elevation myocardial infarction (STEMI), early administration of intravenous metoprolol before primary percutaneous coronary intervention was associated with significantly less patients with severely depressed left ventricular global circumferential and longitudinal strain, both at 1 week and 6 months. (JACC Cardiovasc Imaging 2019;12(7 Pt 1):1188-98; this thesis)
2. The improvement of infarct zone circumferential strain in patients with microvascular obstruction and intramyocardial hemorrhage over 6 months after STEMI suggests a preserved healing capacity of the infarcted myocardium even in the presence of adverse cardiovascular magnetic resonance (CMR) findings. (J Cardiovasc Magn Reson 2020;22(1):44; this thesis)
3. Left ventricular global longitudinal strain with feature-tracking CMR early after primary percutaneous coronary intervention offers incremental prognostic value over conventional CMR parameters like left ventricular ejection fraction and late gadolinium enhancement in risk stratification of STEMI patients. (Am J Cardiol 2020;133:39-47; this thesis)
4. Early intravenous metoprolol has a long-term beneficial prognostic effect, particularly in patients with severely impaired left ventricular systolic function. (Am J Cardiol 2020;133:39-47; this thesis)
5. CMR has emerged as an important imaging modality for assessing the cardioprotective efficacy of novel therapies for reducing myocardial infarct size and preventing adverse left ventricle remodeling in reperfused patients with STEMI. (Bulluck H. Circulation 2018;137(18):1949-64)
6. Tissue tracking technology of routinely acquired CMR cine acquisitions has increased the apparent ease and availability of non-invasive assessments of myocardial deformation in clinical research and practice. (Pedrizzetti G. J Cardiovasc Magn Reson 2016;18(1):51.)
7. Fundamental decision-making regarding whom, when, and how to treat patients with valvular heart disease has become more complex. There has been rapid technological advancement in multimodality imaging; many techniques are now available in routine clinical practice, and their integration has the potential to truly individualize patient management strategies. (Reid A. Eur Heart J 2021;42(19):1912-25)
8. Multimodality imaging plays a central role in the selection of patients who are candidates for transcatheter aortic valve replacement, procedure planning and guidance, and follow-up of prosthesis function. (Rev Esp Cardiol (Engl Ed) 2016;69(3):310-21; this thesis)

9. The novel automated 3-dimensional transesophageal echocardiography imaging software allows accurate and highly reproducible measurements of the aortic annulus dimensions and shows excellent agreement with multidetector row computed tomography to determine the transcatheter aortic valve implantation prosthesis size, particularly in patients with low aortic valve calcium burden. (Am J Cardiol 2018;121(1):86-93; this thesis)
10. Across a breadth of pathologies, myocardial fibrosis represents a final common pathway of myocardial disease, with the pattern and distribution of fibrosis differing between conditions. Irreversible replacement fibrosis, represented by late gadolinium enhancement on CMR, is of nearly universal prognostic relevance. Meanwhile, diffuse interstitial fibrosis imaging has been shown to have great potential as a dynamic, early and reversible marker of myocardial disease. (Bing R. Heart 2019;105(23):1832-1840)
11. It is the supreme art of the teacher to awaken joy in creative expression and knowledge. (Albert Einstein, 1879-1955). In the modern world knowledge is more accessible than ever, however great teachers are a rare breed.
12. Why do you go away? So that you can come back. So that you can see the place you came from with new eyes and extra colors. And the people there see you differently, too. Coming back to where you started is not the same as never leaving. (Terry Pratchett, 1948-2015). After my fellowship in Leiden I returned home; however, as a different physician, researcher and as a different person.