Reporting in CMR

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Introduction

Since its initial development CMR has emerged as an integral imaging modality in the diagnosis, risk stratification and management of a wide spectrum of cardiovascular diseases. It allows for the comprehensive assessment of cardiac anatomy and function, tissue characterisation and myocardial perfusion and fibrosis. It is highly accurate and easily reproducible; indeed it is the gold standard for volumetric analysis. It has been referenced in 26 of the 27 ESC guidelines, with 19 guidelines containing specific recommendations. The number of recommendations has grown from 2015 to 2023 (1) and is now increasingly considered mandatory imaging in some clinical settings (2).

Key Words

Reporting, standardisation, protocols, ESC Guidelines disease management

Main Body

The clinical utility of CMR has grown and it is recognised as an important tool in cardiovascular disease diagnosis and management. Imaging protocols have been published in order to ensure standardisation of image acquisition (3). Comprehensive reports may be generated by reporting clinicians; effective CMR reporting ensures clear communication between referring clinicians and imagers, and as such guidelines for CMR reporting have been published (4).

The SCMR reporting guidelines provide information on the requirement for structured reporting and advice on reporting components, such as administration information, patient demographics and study referral data and technical considerations. Recommendations for reporting timeframes are given. It is recommended that imaging findings are provided in a structured approach such as providing findings and interpretation under the assessment of cardiac function, valvular assessment, presence

or absence of LGE, presence or absence or ischaemia, if perfusion imaging undertaken. As regards volumetric assessment, normal reference values, with information on grading severity of abnormalities in these measurements have been published (5).

However, high quality CMR reporting relies on the acquired images and an understanding of the technical considerations that influence them.

The effect of differing magnetic field strengths should be known when reporting – the greater susceptibility to ECG triggering artefacts, artefacts with imaging at 3T should be known. And during image acquisition efforts made to reduce these. The appropriate sequence selection is vital. For example, the use of steady-state free precession (SSFP) sequences are favoured for cine imaging due to their high blood-pool signal and excellent delineation of cardiac chambers and wall motion. Correct TI selection during LGE imaging is vital. The use of the most appropriate protocol is also vital for high quality reporting, as is the need to acquire additional imaging during the examination, if deemed necessary. Patient co-operation is vital for high quality image acquisition – the requirement to remain still and breath-holding required for the examination can be challenging for some patients but advice on alternating techniques that may be used has been given (6, 7).

Conclusion

CMR is an extremely useful imaging modality. However, a well-structured and standardised CMR report is essential for accurate interpretation and effective patient management. CMR report standardisation improves diagnostic accuracy, ensures clarity, completeness and consistency and can help guide clinical decision-making, ultimately contributing to an enhanced patient experience and outcome.

References and further reading

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