

Introduction

Myocardial perfusion scintigraphy: the evidence

Despite major advances in prevention and treatment of coronary atherosclerosis, coronary heart disease (CHD) remains a major cause of mortality and morbidity in the western world. Its management consumes a large proportion of national health care budgets, a significant part of which is spent in imaging technologies. Amongst them, myocardial perfusion imaging (MPI) is an established technique with important applications in the overall management of CHD, including, diagnosis, prognostication, selection for revascularisation and assessment of acute coronary syndromes.

This supplement covers the current applications of MPI and also its cost effectiveness and use in clinical practice in the UK. In the first article, Loong and Anagnostopoulos perform a systematic review of the existing literature on the diagnosis of coronary artery disease by radionuclide MPI. The message is that MPI possesses a high overall diagnostic accuracy and remains the standard technique for assessing myocardial perfusion in the everyday clinical practice. Its high diagnostic accuracy is maintained in various sub-populations (diabetics, women, elderly) and this has important implications for their management. The latter can be optimised by the prognostic information provided by MPI and particularly by the presence

and degree of inducible ischaemia, which can be assessed objectively by the perfusion scan.

Because of the wealth of information on the role of MPI in risk stratification, an area of nuclear cardiology where the evidence is particularly strong, it was felt appropriate to cover separately the stable and acute coronary syndromes (see articles by Prvulovich and Bateman and by Udelson and Flint, respectively). The assessment of myocardial viability and hibernation in patients with heart failure is another area where MPI also plays an important role because it can assist in the differentiation of ischaemic and non-ischaemic aetiology and it is an optimal technique for management and assessment of prognosis (see article by Bax and colleagues).

Evidence from modelling and observational studies supports the enhanced cost effectiveness associated with MPI use. In patients presenting with stable or acute chest pain, strategies of investigation involving MPI are more cost effective than those not using the technique (see article by Underwood and Shaw). Despite this and the fact that MPI is an integral part of many clinical guidelines for the investigation and management of angina and myocardial infarction, the technique is under-utilised in the UK as judged by the inappropriately long waiting times

and by comparison with the numbers of revascularisations and coronary angiograms performed. As the article of Rahman and Kelion demonstrates, the MPI activity levels in the UK fall far short of those in comparable European countries with about half as many scans being undertaken per year. The current average waiting time is 20 weeks and the British Nuclear Cardiology Society (BNCS) recommends that clinically appropriate upper limits of waiting time are six weeks for routine studies and one week for urgent studies.

All six articles provide comprehensive reviews of the evidence for the role of MPI in clinical practice. In view of the recent publication of the UK National Institute of Clinical Excellence, guidance on the role of MPI in the diagnosis and management of patients with angina and myocardial infarction (www.nice.org.uk/cat.asp?c=94600), we believe that the current supplement will be a valuable source of information for both providers and users of the technique.

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