ASNC/JSNC JOINT SYMPOSIUM−EDITORIAL

Focus Issue: Clinical Application of Myocardial Blood Flow Quantification−from the JSNC/ASNC Joint Session at the 27th JSNC Annual Scientific Meeting

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The Japanese Society of Nuclear Cardiology (JSNC) is looking to develop international collaboration with the American Society of Nuclear Cardiology (ASNC). This alliance should improve the quality of clinical practice and research levels among JSNC members. To this end, JSNC introduced the first ASNC and JSNC joint session at the 26th annual JSNC scientific meeting in July 2016 under the direction of JSNC president Dr. Kenichi Nakajima and past president Dr. Akira Yamashina (1-3). To further develop this international collaboration, JSNC hosted the second ASNC and JSNC joint session at the 27th JSNC annual meeting on June 17, 2017, in Tokyo. One of the most important roles of nuclear cardiology is to detect myocardial ischemia in patients with coronary artery disease (CAD). Quantitative myocardial blood flow measurements have shown incremental diagnostic and prognostic value over those from visual analysis and anatomical information (4). The Japanese Ministry of Health, Labour and Welfare (JMHLW) approved ^{13}N-ammonia positron emission tomography (PET) for the diagnosis of myocardial ischemia in patients with CAD and began reimbursement in 2012 (5). This JMHLW approval of PET myocardial perfusion imaging (MPI) was the initial step to moving PET MPI from a research level to clinical practice. Although JSNC has endorsed the utility of PET imaging in nuclear cardiology, the number of PET MPI studies in Japan is still less than expected. In the United States (US), PET MPI has recently gained recognition for its diagnostic role in CAD (6). With ASNC's publication of a position statement on the clinical indications for PET MPI (7), a further increase in PET studies is anticipated. Therefore, performing quantitative assessment of myocardial blood flow (MBF) measurements may move into clinical practice in both countries. However, there are still many issues to be resolved before this happens. At this second ASNC/JSNC joint session, experts from JSNC and ASNC discussed the current status and future directions of an MBF quantification approach in PET and single-photon emission computed tomography (SPECT).

Clinical application of PET and SPECT MBF quantification

ASNC representative Dr. Timothy Bateman talked about the current status of PET MPI in the US. Dr. Bateman is past president and one of the founding members of ASNC. He is a pioneer of clinical PET MPI in the US and was a committee chair for the position statement on the clinical indications for PET MPI. He discussed the clinical utility of PET MPI in the diagnosis of CAD especially using MBF quantification. Quantitative MBF measurements can be used to detect balanced ischemia and can therefore compensate for the shortcomings of SPECT perfusion imaging, which can provide only relative blood flow distribution. However, Dr. Bateman also mentioned the importance of exercise stress SPECT MPI in a low-risk population. His institution performs 60 stress and rest ^{82}Rubidium PET/computed tomography (CT) studies each day within clinical practice. On the JSNC side, Dr. Masanao Naya talked about the increased incremental prognostic value of quantitative MBF measurements beyond anatomical information (4). He reported several research findings using ^{15}O-labeled water PET and PET/CT. Intensive research

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activities using PET MPI are a strong feature of the Japanese community. In addition, Dr. Keisuke Kiso talked about the importance of MBF quantification using a SPECT system, and the role that high-sensitivity dynamic SPECT may play in this regard. In Japan, most PET/CT imaging takes place in the area of oncology, and there is little time for PET MPI in PET centers. Therefore, MBF quantification using a SPECT system may play a practical role in detecting CAD in Japan. To date, data are promising and there is future potential for this approach.

Within our discussion at the ASNC/JSNC joint session, we talked about how to promote PET and SPECT MBF quantification approaches as clinical practices. JSNC members obtained very useful information from ASNC representative. There is no doubt that being able to precisely measure flow reserve will not only improve care of patients with CAD but also provide many future research opportunities. ASNC and JSNC will continue to work together to promote quantitative approaches using PET and SPECT.

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Conflicts of interest

None.

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