

Experts back nuclear medicine as a cost-effective tool against cancer

AIPES Symposium shows support for PET/CT scanning

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Nuclear medicine is likely to become a vital tool for healthcare professionals as they develop new methods to fight cancer, experts agreed at a Brussels symposium.

The event, organized by the Association of Imaging Producers and Suppliers (AIPES)(*), Europe's nuclear medicine industry group, showed although PET/CT scans still relatively novel, they are expected to become more accessible and cost-effective in helping manage cancer.



PET/CT can play a key role in the development and implementation of personalized medicine, according to Barbara Malene Fischer, Chief Physician at the Department of Clinical Physiology, Nuclear Medicine and PET, at Copenhagen's Rigshospitalet. Their results usually offered a more accurate discrimination: they could detect as few as 1 mill cancer cells, and depending on the clinical question, can be tailored to the patient by choosing different isotopes and different tracers. "Used wisely, PET/CT is the key to cost-effective improvements in the care of cancer patients and sometimes even a cost saver," she said.

Mrs Fisher accepted that PET/CT scans have a partially deserved pricy reputation, thanks to the need for a cyclotron close by, and the need for experienced technicians, radiologists and nuclear medicine physicians. But she pointed to one study that showed how early detection from PET/CT scans actually led to €1,660 in savings per patient in avoided surgical procedures. "PET is not a cure in itself, but it is a tool to provide the right diagnosis and select the right therapy," she said.



With PET-scans the hallmarks of cancer can be visualized, according to Elisabeth de Vries, head of the Department of Medical Oncology at the University Medical Center in Groningen, The Netherlands. "One of the nice things about PET scans is that they provide a whole body picture. This is of relevance as increasingly it is known that tumor characteristics differ between patients, within a patient and even within a lesion. This so-called heterogeneity of tumor characteristics can thus, at least partially, be captured.

Moreover PET-scanning can show in an early phase of cancer drug treatment the effect of the drug on its tumor target.

However, Mrs de Vries said the value of PET/CT scans with novel PET-tracers has to be proven in prospective trials, even if they are costly. "Validation is needed to prove there is a clinical meaningful role for molecular imaging beyond FDG-PET in breast cancer.



Wolfgang Weber, the Director of the PET Center at Memorial Sloan Kettering Cancer Center in New York, said that by giving patients a comprehensive anatomical and functional whole-body survey, PET technology could deal with the different characteristics of individual tumors and patients. “Malignant tumors are heterogeneous between patients, within a patient and over time. Monitoring tumor response therefore requires spatially and temporally resolved information,” he said.

Mr Weber said PET imaging could answer many questions, like whether a drug reaches its target, whether it interacts with its target, whether the ‘biology’ of the cancer cell changes, and whether treatment has long-term benefits. “Answering these questions has an enormous potential to cut the costs of cancer treatment by reducing drug development costs and stopping ineffective therapy early,” he said.



Barry A. Siegel, the chief of the nuclear medicine division at Washington University School of Medicine said that even if the evidence was accruing that PET improves health outcomes for cancer patients, growth in clinical use of PET technology has been slow. “Historically, the barriers were that it is an expensive technology, slow acceptance by clinicians, strict regulation of radiopharmaceutical production, and variable and restrictive coverage policies by government and private payers,” he said. “We have had a Catch 22 with Medicare and other payers refusing to

cover PET scans in the US because of lack of evidence, yet evidence is hard to gather because of lack of coverage.” Although the payers would like higher levels of evidence, “there simply is not enough money to pay for randomized controlled trials of PET for every cancer and every indication.”

Dr Siegel accepted that more trials were needed to reaffirm PET’s value. “Clinical trials of new molecular imaging tracers and methods must focus, from the outset, on obtaining evidence of improved patient outcomes,” he said.



Kristoff Muylle, President-Elect 2015-2016 of the European Association of Nuclear Medicine (EANM), the umbrella organization of nuclear medicine in Europe, agreed that more trials are needed. “We achieved to have a major impact on patient management in a short period of time. Nevertheless, more supporting data, obtained in a standardized setting, are needed, especially in the field of early response assessment and response prediction,” he said.



AIPES President Guy Turquet de Beauregard said that while nuclear medicine sector benefitted from the strong solidarity between industry and academic worlds, it still had to work with decision makers in EU and national authorities to secure support. “Everyone believes in the technology, including the radiologists and oncologists. The problem is to fulfill the potential of the discipline,” he said.

Mr Turquet de Beauregard, who is also President of Sevy Conseil, said that while the cost of radioactive tracer isotopes had fallen to \$135, one third of the price just a few years ago, it was still not sustainable at the moment.



AIPES Vice President and Secretary General Jean Bonnet also underlined nuclear medicine’s potential. “It seems to have no limit in addressing unmet medical needs that are growing and also changing with the evolution of the population and lifestyle of the EU countries,” he said.

Mr Bonnet, who is also Vice President Strategic Execution and Business Excellence at Mallinckrodt Pharmaceuticals, added that the sector still needed to work at showing its value. “The nuclear medicine industry, together with the scientific community, is fully aware of the need to combine more efficacy with the available healthcare resources, to better serve the practitioners and their patients,” he said.

(*) About AIPES: AIPES (Association of Imaging Producers & Equipment Suppliers) is the European Industrial Association for Nuclear Medicine and Molecular Healthcare, that brings the major pharmaceutical laboratories in nuclear medicine together with the major producers of medical equipment for this area of medicine, both multinationals and local medium size companies. AIPES acts as a provider of a forum for addressing specific radiopharmaceutical issues an industrial partner to the European Association of Nuclear Medicine and any other European medical society that could help in the promotion of diagnostic imaging. AIPES has as its goal, to communicate to the public the medical potential and the latest technical developments in the field of nuclear medicine.

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