Contribution ID: **54** Type: **Oral presentations**

The Future for 99mTc and 99Mo in nuclear medicine

Wednesday, 3 February 2010 10:55 (20 minutes)

The Future for 99mTc and 99Mo in nuclear medicine
99mTc is an unusual radionuclide choice for imaging but has become the most frequently used radioisotope in nuclear medicine and has made single photon emission computed tomography (SPECT) an extremely powerful in-vivo diagnostic imaging tool. Recent advances in imaging camera technology offer a very promising future for this method of imaging but the supply of the radionuclide is now under threat. 99mTc is supplied to clinical users in the form of 99mTc/99Mo generators loaded with the parent 3 day half-life radionuclide 99Mo. 99Mo is produced by a complicated supply chain that relies on nuclear fission of 235U in nuclear research reactors. Most of these reactors are ageing and in 2010 there is just not enough of this specialised reactor capacity to meet all the world's demand for 99Mo. There are existing reactors planning to start producing fission 99Mo and several alternative methods are being proposed, some of which require accelerators not reactors. Unfortunately some nuclear medicine scans are already being diverted to different imaging methods that do not rely on the supply of 99mTc. This paper will provide an industrial perspective on a situation which has been described as a 'crisis'for the nuclear medicine community. Reasons for selecting 99mTc and the latest instrumentation advances will be described, the clinical use of the different radionuclides will be summarised and current capacities of fission producers reviewed. The various alternative methods of producing 99Mo will be examined with a commentary of the technical and economic challenges facing each of the options. Finally the latest news from the fission 'moly'supplier industry will be made available.

Please submit a short bio (max 1500 characters)

Dewi M. Lewis
Currently Head of Physics, General Electric HealthCare R&D in the UK. Scientific and technical expertise includes accelerators and cyclotrons for radioisotope production, radiopharmaceutical development, nuclear reactor applications for medical isotopes, instrumentation for medical imaging, software design for medical image processing and analysis, SPECT and PET imaging, design & organization of clinical trials for medical imaging, (ultrasound) echocardiography and radiotherapy. Education includes PhD in positron detection and postdoc fellowship in accelerator software & instrumentation at CERN. Fornerly, Engineer in charge of the first CERN proton collider before joining industry. Industry career has included cyclotron project management, operations management , radiochemistry production, radiopharmaceutical manufacturing, imaging agent development, R&D in medical imaging, business and strategy management, design and organisation of clinical trials. Academic affiliations include visiting professorships and advisory board membership of several UK universities. Former Council member of the UK research funding agencies
and current adviser for STFC,EPSRC and MRC; also chairman of the European Isotope and Reactor Committee (AIPES) in Brussels from 1992-2007
Current technical interests include 99Mo production technology, brain imaging with SPECT & PET and instrumentation development for molecular imaging

Last Name

Lewis

Institution

General Electric Healthcare

First Name(s)

Dewi M.

Telephone

+447771810717

Address

The Grove Centre, Amersham, Bucks, HP7 9LL, UK

E-mail address

dewi.lewis@ge.com

Author: Prof. LEWIS, Dewi M. (General Electric Healthcare)

Presenter: Prof. LEWIS, Dewi M. (General Electric Healthcare)

Session Classification: Session 2: Radioisotopes in diagnostics and therapy

Track Classification: Radioisotopes in diagnostics and therapy