U.K. Radiopharmacy Group

NEWSLETTER
2010 Q4

UKRG INITIATIVES

UKRG Radiopharmacy Workshop 2011

The programme for the Bournville meeting on Friday 14 January was circulated recently. The day is divided into four sessions:

1. Practice
   - Technical agreements and SLAs
   - Pharmacovigilence and radiopharmacy
2. Quality assurance of radiopharmaceuticals: revised UK guidelines
3. PET
   - From research to GMP production
   - ^{68}Ga generator and products
4. Error reporting
   - The importance of error reporting
   - Workshop on capturing, recording, and feedback

Get your registration in early as last year we had to turn people away. For further information please contact paul.maltby@rlbuht.nhs.uk

Postgraduate Course in Radiopharmacy

The next running of the Easter course will take place 14-17 March at Guy's Hospital. You should have received the brochure and registration form recently. For further information please contact jim.ballinger@kcl.ac.uk.

Unusual biodistribution/product defects

A compilation of the reports submitted in the first three quarters of 2010 should accompany this Newsletter. The monitoring scheme is co-ordinated by: neil.hartman@bartsandthelondon.nhs.uk

UKRG website

The UKRG website will be given a facelift and hosted by the BNMS. The domain name will remain the same. It should be much easier to keep the site up to date in the new regime and the Radiopharmacy Handbook will be reinstated after revision.

Sampson's Textbook of Radiopharmacy

The fourth edition of the textbook, this time edited by Tony Theobald, is scheduled for publication in December by the Pharmaceutical Press.
www.pharmpress.com

MOLYBDENUM

Report to Department of Health

The National Imaging Board commissioned ARSAC to prepare a report and recommendations on the medium term response to the molybdenum situation. That report, which endeavours to ensure stable the supply of ^{99m}Tc labelled products to nuclear medicine, may have far reaching effects on the practice of radiopharmacy. The report should be available via the ARSAC website in early December. www.arsac.org.uk

OECD Reports

Production of ^{99}Mo in nuclear reactors is too big for companies, too big even for countries. It requires international co-operation. The OECD through its Nuclear Energy Agency has taken an interest in this and the High Level Group on the Security and Supply of Medical Radioisotopes (HLG-MR) has recently released two reports.

The first looks at the economics of ^{99}Mo production. It is a remarkably detailed document, looking at factors which have never been studied before. There has never been an economic model for radioisotope production in nuclear reactors, it's something that just grew over time. The author of the report, Chad Westmacott, presented a summary at the autumn BNMS meeting in Nottingham. His presentation is available on the BNMS website, a brilliant summary in only 11 slides! While construction of new reactors will greatly increase the cost of producing ^{99}Mo, the good news for us is that production costs are only a very minor component of the final cost of ^{99m}Tc agents and we should not see price increases like those we have recently experienced.

The second report looks more broadly at ^{99}Mo production constraints and prospects. Again, there is something of direct relevance to radiopharmacy practice: our old model, from the days when ^{99m}Tc was relatively cheap, was based on minimising labour costs, eg a single production session in the morning. When ^{99m}Tc costs increase or availability decreases, the efficiency of use of available ^{99m}Tc becomes the driving factor, even if it means higher labour costs. The impact of this will obviously vary

depending on current staffing levels and operational models. It's even more complicated for central radiopharmacies when one also has to factor in transport times and costs.

The reports are available via the BNMS website or www.nea.fr/med-radio/.

WORKFORCE ISSUES

Registration of Pharmacy Technicians – Important information about time limits

As you know, the General Pharmaceutical Council is now taking registrations from pharmacy technicians. Forms and details are from the website: www.pharmacyregulation.org. You may currently not be working in an environment which requires you to be a registered pharmacy technician. The transitional period is just that – it lasts until 30th June 2011.

If you once qualified as a pharmacy technician and consider that you may like the possibility of working in that way again, either in hospital, community or any other area then you need to register before this date.

"This means that those individuals who hold a qualification that is recognized for the purpose of grandparenting and meet the work experience requirements under the transitional arrangements can apply for registration up to and including the 30 June 2011." (GPhC website)

The qualifications acceptable in this transitional period are many and the list is on the GPhC website. Registration initially is time consuming and you need a lot of documentation. There is currently an 8 week waiting list because of the numbers registering.

If you decide not to register with the GPhC you need to understand that you are effectively closing the door on any kind of career as a pharmacy technician in the future because – the website says: *"If you don't apply to register before mandatory registration starts you will not be able to call yourself a pharmacy technician or work as a pharmacy technician:"*

The title might not be an issue for you but:
*On or after 1 July 2011 you can **ONLY** apply to register with the GPhC as a pharmacy technician if:*

- *you possess an approved competency based qualification, an approved knowledge based qualification and have completed a minimum of 2 years relevant work-based experience*
- *you are an EEA national with an EEA pharmacy technician qualification*

The new qualifications, QCF taught as of Sept 2010 will be the ones mentioned on the website and are currently going through the approvals process. This effectively means that old qualifications are time expired and will not be acceptable for registration after 30 June 2011.
(Thanks to Barbara Wensworth for this item)

National Occupational Standards for radiopharmacy published

Haven't we been here before? Yes, our NOSs did make it into cyberspace once before but then were pulled. In the new regime radiopharmacy competencies were initially mapped to something completely inappropriate but following objections from the UKRG the NOSs were reformatted to newspeak and have now appeared again.

On the Skills for Health (www.skillsforhealth.org.uk) website, select the quick link Competencies/NOS, then Completed Competencies/NOS, then scroll down to Radiopharmacy. Happy reading.

REGULATORY ISSUES

Clinical trials of IMPs

A meeting was held recently under joint sponsorship of the Medical Research Council, the MHRA, and the National Cancer Research Institute PET Research Network.

Objectives for this meeting:

- Highlight resources available
- Identify and address common areas of uncertainty in understanding of the regulatory environment for PET research
- Consider creation of a small "Super user" group to liaise more closely with the MHRA and facilitate a better general understanding of regulatory processes
- To consider creation of a NeuroPET Research Network to share "best practices" and encourage optimally efficient use of national resources.

Elaine Godfrey (MHRA) gave the agency view on what is a clinical trial. One point she made is that there is a lot of information available but it is not always easy to find. For example, there is a section on PET:
http://www.mhra.gov.uk/Howweregulate/Medicines/Licensingofmedicines/Clinicaltrials/SpecialInterestGroups/PET/PETGeneralinformation/index.htm

Mark Whelan (Wolfson Medical Imaging Centre, Manchester) talked about implementation of GMP production. Of particular interest was a risk assessment matrix used to assess the effectiveness of control measures brought in to minimise risk. Roy Baxendale (GSK) talked about pitfalls in the regulatory process which can lead to delays.

Prior to the meeting a series of case studies/scenarios had been elicited from the community, including UKRG, and the MHRA circulated their assessment of each: is it a clinical trial or not and is an IMP licence required? Some of the outcomes were surprising, to me at least. Erik Arstad (UCL) and Franklin Aigbirhio (Cambridge) presented their views on the case studies, one of them more concordant than the other.

One of the outcomes of the meeting was an offer from the MHRA to work with a small group from the community to prepare an exemplar IMP dossier on a PET tracer of common interest, such as ^{18}F-choline. That work is progressing. There was also a comment that an organisation such as UKRG should enable the sharing of generic SOPs for common aspects of radiopharmacy operations. Why re-invent the wheel?

Recent MHRA inspections

Common themes in recent inspections have included:

- *Change control*: Preauthorisation, impact assessment, review of effectiveness.
- *Documentation*: Insufficient detail in SOPs, record of training.
- *Batch release*: Documentation of the process, releasing officer should be independent of preparation of radiopharmaceuticals but may be part of overall production process. There is no such thing as retrospective release; release must be contemporaneous. However, there may be retrospective review of documentation.
- *Electronic systems*: Capability and limitations, back-up of records.
- *Maintenance and fabric*: Service level agreements, especially in PFI builds, eg. alarm systems.
- *Aseptic practices*: Broth simulations must consider the worst case scenario.
- *Sterility testing*: Clarity of schedule, assurance of adherence to schedule (minimum of one product per week per workstation), consider end of session broth transfers as alternative.
- *Recall*: In the event of a recall of a product prepared under a specials licence, the Defective Medicines Reporting Centre must be informed within 24 hours; inspectors will take a very dim view if they come across a recall which had not been reported.

The MHRA is preparing a Frequently Asked Questions area for radiopharmaceuticals and would welcome questions. Please channel them via your UKRG regional representative.

NPSA safety alert: Reducing risk of harm from oral bowel cleansing solutions

The NPSA issued a safety alert on 19 February 2009 (NPSA/2009/RRR012) raising the issue of potential death and harm from electrolyte abnormalities, dehydration and serious gastro-intestinal problems which have been reported following the inappropriate use of oral bowel cleansing solutions (Picolax®, Citramag® , Fleet Phospho-Soda®, Klean Prep®, Moviprep®) prior to surgery and/or investigative procedures. Frail and debilitated elderly patients, children and those with contraindications are particularly at risk from these treatments. The report and supporting information are available at:
http://www.nrls.npsa.nhs.uk/EasySiteWeb/getresource.axd?AssetID=60254&type=full&servicetype=Attachment
http://www.nrls.npsa.nhs.uk/EasySiteWeb/getresource.axd?AssetID=60255&type=full&servicetype=Attachment

MEETING REPORTS

UK PET Radiochemistry Meeting

Churchill College, University of Cambridge

When Franklin Aigbirhio announced plans for a UK PET radiochemistry meeting he thought he would be lucky to get 30 or 40 registrants. When 22 October dawned the room capacity of 100 was met and a number of applicants had to be turned away.

The morning session included a description of the activities of the UK NCRI PET Research Network by Fiona Gilbert, a history and review of UK PET centres by John Clark, a description of the SINAPSE molecular imaging programme in Scotland by David Wyper, and the MHRA view on QA of PET radiopharmaceuticals by Ian Thrussell. Following a buffet lunch and poster session there were shorter presentations on a variety of topics in the afternoon. If anything, the programme was too full and there was insufficient time for networking. It was particularly gratifying that so many young chemists were able to attend.

The plan is to hold these meetings annually at locations around the country. The initial meeting was sponsored by MRC and EPSRC.

INDUSTRY NEWS

Changes at IBA

When Schering sold their CIS bio radiopharmaceutical division to IBA a few years ago, Qados was appointed as their UK representative. However, since that time IBA has become much more established in the UK with the expansion (and now contraction) of their PET cyclotron network. In January IBA-UK will take over distribution of the CIS bio products from Qados.

IBA recently announced licensing in France of Filtracis (^{99m}Tc ethylene dicysteine), which provides similar information to MAG3. Approval in other European countries is anticipated in a year or so.

Depreotide (NeoSpect) has been discontinued. It is an example of unfortunate timing, having come on the market for detection of solitary pulmonary nodules just as the availability of FDG-PET was increasing. When ownership of the product was transferred from GE to IBA it was off the market for a period, relaunched at a higher price, and never really developed much of a market.

Product shortages at GE

We experienced another Nanocoll shortage due to recall of a fresh batch and shortage of materials delaying subsequent batch preparation and release. Though the situation was resolved by the end of November, this points out once again the fragility of supply when there is a single manufacturer. We went through a similar situation with the same product last summer and have failed to prepare a robust contingency plan.

There has been a further delay in the return of MDP kits to the market, now expected at the beginning of January.

LabLogic radiochromatography system assists cancer antibody trials

The Cancer Sciences Division of Southampton University School of Medicine is using radio HPLC and radio TLC systems from LabLogic in the development and quality control of radio-labelled antibody conjugates undergoing clinical trials for treating haematological malignancies.

The HPLC system incorporates an Agilent quaternary pump, an auto-degasser and a thermostatically controlled column compartment. "We have had the equipment for ten months now, and it has proved to be a sensitive and reliable upgrade from our previous system," says John Langford, head of the laboratory.

"It is always easy to use, whether we are measuring the gamma emissions of ^{111}In or the beta emissions of ^{90}Y. And the speed and ease of use of LabLogic's Laura radiochromatography software means that results are available immediately after the end of each run.

"We often correlate our results to ITLC for confirmation, and here we're finding that the LabLogic radio-TLC scanner provides more detail than the 'cut and count' method. It makes it easier to locate peaks and discriminate between them and it uses the same Laura software, which is very convenient."

LabLogic PETra - No more headaches tracking PET raw materials

When we talk to PET professionals about our new PETra LIMS, we tend to stress that it's been custom-built for its application, and that it complies with cGMP regulations. But there's another feature that's just as important, because PETra provides the answer to one of the headaches of the PET business that you're probably familiar with - maintaining records of the components that make up each radiopharmaceutical.

Having to check that dozens of separate components are in-stock and within their expiry dates before embarking on a new synthesis is a time-consuming process, as you'll know, but PETra makes it easy to keep the records you need by keeping the loop from synthesis to QC acceptance and use within the database. It does so with an inventory management module that is more comprehensive and accurate than any paper record - and a lot easier to keep up to date. PETra keeps track of the items you have in stock, tells you where they are, lists the QC tests they've passed, and knows whether they are still within their expiry date.

You get a complete chain of custody for every component, from ordering through receipt and QC analysis to use in a batch, making it easy for you to document all your inventory items, regular suppliers and couriers. Each item can be listed with the QC checks that you must carry out before you can release it for use in production, and it has a unique barcode that automates the identification of materials when you're preparing a batch.

You can bring together groups of items such as starting pre-cursor chemicals, vials and so on to make a 'kit' specific to your product method. As you use items during synthesis, your inventory is automatically adjusted, and re-order limits for each are flagged up as stocks are reduced.

Users tell us that PETra's ability to maintain stock records is one of the things they like most about it. Get in touch and we'll show you how it will do the same for you! solutions@lablogic.com

UPCOMING MEETINGS

UKRG Radiopharmacy Workshop
14 January, Bournville. www.urkg.org.uk

Marie Curie and Aspects of the History of Radiochemistry 18 March, Royal Society of Chemistry, London. www.rsc.org

Becquerel Medal Symposium in honour of Professor Helmut Maecke
Royal Society of Chemistry Radiochemistry Group.
4 April, London. www.rsc.org

Positron Emission Tomography (PET) Technology and Application
13-15 April, King's College London.
www.sthpetcentre.org.uk/petcourse

BNMS spring meeting 8-11 May, Brighton.
Abstract deadline: 10 January. www.bnms.org.uk

Society of Nuclear Medicine annual meeting
4-8 June, San Antonio, Texas.
Abstract deadline: 7 January. www.snm.org

6th European Molecular Imaging Meeting
European Society of Molecular Imaging
19-21 June, Leiden, the Netherlands.
Abstract deadline: 30 March. www.esmi2011.eu

1st World Congress on Ga-68 and Peptide Receptor Radionuclide Therapy (PRRNT)
23-26 June, Bad Berka, Germany
www.1stworldcongress-ga-68.de

19th International Symposium on Radiopharmaceutical Sciences 28 Aug – 2 Sep, Amsterdam.
Abstract deadline: 1 March. www.isrs2011.org

7th International Conference on Isotopes
4-8 September, Moscow.
www.isotop.ru/en/events/description-event/

European Nuclear Medicine Congress
15-19 October, Birmingham.
Abstract deadline: 11 April. www.eanm.org

From the Editor

As another calendar year enters into history, each one more rapidly than its predecessor, I would like to wish our readers the compliments of the season. I hope to see many of you next year in Bournville, Brighton, or Birmingham.

www.ukrg.org.uk	*Editor:* Jim Ballinger Department of Nuclear Medicine Guy's and St Thomas' NHS Foundation Trust Great Maze Pond, London, UK, SE1 9RT Phone: 020 7188 5521; Fax: 020 7188 4094 E-mail: jim.ballinger@kcl.ac.uk
Issue 2010 Q4 Published 8 December 2010	This and previous issues of the Newsletter are available from the UKRG web site and are posted in the library section at www.VirRad.org