CTE 3
Technologist Committee
Monday, October 14, 14:30-16:00

Session Title
Preclinical Studies, from Bench to Bedside

Chairpersons
Christelle Terwinghe (Leuven, Belgium)
Jan Grimm (New York, United States of America)

Programme

14:30 - 15:00	Guy Bormans (Leuven, Belgium): How to Develop the Ideal Radiopharmaceutical
15:00 - 15:30	Michel Koole (Leuven, Belgium): Preclinical PET Imaging and Quantification
15:30 - 16:00	Marleen Keyaerts (Brussels, Belgium): Nanobody Applications for Radionuclide Imaging and Therapy - Process from Camel to Patient

Educational Objectives
1. To overview the characteristics of good radiopharmaceuticals.
2. To recognize the main differences between human and preclinical investigations.
3. To understand the crucial path of preclinical imaging.
4. To get insight how the radiopharmaceutical is finally implemented in clinical setting.
5. To overview the safety assessments to implement the radiopharmaceutical in human use.

Summary
It is a long way to develop a new radiopharmaceutical, starting from the radiopharmacy lab to result in clinical use. Just a very small quantity will pass through the whole trajectory and come into the daily routine practice. Therefor it is crucial to investigate in good radiopharmaceuticals and it has to be well-defined what is needed to develop the "ideal radiopharmaceutical" for a certain application. Once the synthesis of the molecule is performed and the labelling procedure is determined, the radiopharmaceutical will be injected using animals in order to have an insight of the efficacy, toxicity and pharmacokinetics. Blood sampling, imaging and quantification need to be done very secure at given time points. The main goal of the preclinical, animal studies is to determine the safe dose for the first in man study.
Once the radiopharmaceutical has a good targeting for the required application and meets to the safety assessments, clinical trials will start up to test the dose ranging, to assess efficacy, effectiveness, side effects and safety. Finally it will be favourable to convince the authorities of the possibilities using the radiopharmaceutical and get your radiopharmaceutical reimbursed, based on the (pre)clinical trial results.

Key words
Preclinical, study, radiopharmaceutical, animals