**Checklist Practical Components of the Radiopharmacy Syllabus**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Topic** | | **Period(s)** | **Institute(s)** | **Visum Supervisor(s)** |
| **1.** | **Working in a sterile environment** |  |  |  |
|  | aseptic technique |  |  |  |
|  | monitoring personal technique |  |  |  |
|  | monitoring the environment |  |  |  |
|  |  |  |  |  |
| **2.** | **Use of safe radiation practices** |  |  |  |
|  | procedures for personal dose limitation and monitoring |  |  |  |
|  | contamination monitoring |  |  |  |
|  | accidents involving radioactivity |  |  |  |
|  | local and national regulations and procedures |  |  |  |
|  | radioactive waste disposal |  |  |  |
|  |  |  |  |  |
| **3.** | **Documentation of radiopharmaceutical procedures** |  |  |  |
|  | standard operating procedures |  |  |  |
|  | product and equipment specifications |  |  |  |
|  | records of radiopharmaceutical preparation |  |  |  |
|  | records of analysis and other processes |  |  |  |
|  |  |  |  |  |
| **4.** | **Use, maintenance and calibration of equipment used in radiophamacies** |  |  |  |
|  | radioisotope calibrator (ionisation chamber, Aktivimeter): accuracy, constancy, linearity and geometry effects (refer to national laws and regulations) |  |  |  |
|  | contamination monitors: efficiency, minimum detectable activity |  |  |  |
|  | (gamma) scintillation counters: efficiency, resolution, minimum detectable activity, counting statistics |  |  |  |
|  | liquid scintillation counter: efficiency and counting statistics |  |  |  |
|  | laminar flow hoods / radioisotope work-stations |  |  |  |
|  | centrifuges |  |  |  |
|  | balances |  |  |  |
|  |  |  |  |  |
| **5.** | **Procurement of Radiopharmaceuticals** |  |  |  |
|  | Types and limits of radionuclide material that can be ordered |  |  |  |
|  | Ordering radiopharmaceuticals consideration of purchase orders, suppliers ordering schedules and times, precalibration times record keeping, including familiarity with computer procedures |  |  |  |
|  | Receipt of radiopharmaceuticals delivery procedures, trace of delayed shipments, surveys wipe tests, radioassay, packaging, disposal |  |  |  |
|  | storage requirements, record keeping logs |  |  |  |
|  |  |  |  |  |
| **6.** | **Radiopharmaceutical preparation** |  |  |  |
|  | Elution of a 99mMo-99mTc generator; quality control of eluates |  |  |  |
|  | Preparation of 99mTc radiopharmaceuticals using 'kits' |  |  |  |
|  | Preparation of 'in-house' radiopharmaceuticals (non-kit; optional) |  |  |  |
|  | Labelling of red and white blood cells |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| **7.** | **Quality control of radiopharmaceuticals** |  |  |  |
|  | Radionuclidic purity using absorption methods gamma-ray spectroscopy, T1/2 determination |  |  |  |
|  | Radiochemical purity using thin-layer chromatography solid-phase extraction and HPLC methods |  |  |  |
|  | Chemical purity: pH, aluminium-ion content |  |  |  |
|  | Particle size of particulate radiopharmaceuticals filtration, light microscopy |  |  |  |
|  | Pharmaceutical acceptability visual inspection, sterility, freedom from endotoxin (Limulus test) |  |  |  |
|  |  |  |  |  |
| **8.** | **Supply of radiopharmaceuticals** |  |  |  |
|  | Dispensing, labelling, allocation of control numbers expiry dates, packaging, transport |  |  |  |
|  |  |  |  |  |
| **9.** | **Participation in research and development projects** |  |  |  |
|  | Presentation of work at an open scientific meeting |  |  |  |
|  |  |  |  |  |
| **10.** | **General experience** |  |  |  |
|  | two weeks in a centre preparing PET radiopharmaceuticals or single-photon radiopharmaceuticals (non-kit) if this is not included in their three year experience |  |  |  |
|  |  |  |  |  |
| **11.** | **Clinical experience** |  |  |  |
|  | two weeks in a clinical department of nuclear medicine including observation of patient handling, operation of imaging equipment, interpretation of images and quantitative data |  |  |  |
|  |  |  |  |  |
| Supervisors must sign on the checklist or, if they write an accompanying letter, state which topics listed in the checklist have been covered in their institute | |  | | |