

EACVI NC examination syllabus

1. Radionuclide physics
 - 1.1. Atoms and nuclei
 - 1.2. Isotope decay
 - 1.3. Interaction of radiation with matter
2. Instrumentation
 - 2.1. Anger gamma camera
 - 2.2. Solid state camera
 - 2.3. PET camera
 - 2.4. CT and hybrid imaging
 - 2.5. Dose calibrators
 - 2.6. Quality control
3. Radiopharmaceuticals
 - 3.1. Single photon emitting (thallium, MIBI, tetrofosmin, mIBG, labelled red and white cells, others)
 - 3.1.1. Physical and biological properties
 - 3.1.2. Common activities
 - 3.1.3. Production
 - 3.1.4. Quality control
 - 3.1.5. Dispensing
 - 3.1.6. Transport
 - 3.2. Positron emitting (FDG, ammonia, rubidium, oxygen, hydroxyephedrine, others)
 - 3.2.1. Physical and biological properties
 - 3.2.2. Common activities
 - 3.2.3. Production
 - 3.2.4. Quality control
 - 3.2.5. Dispensing
 - 3.2.6. Transport
4. Radiation safety
 - 4.1. Potential adverse effects of radiation
 - 4.2. Effective dose
 - 4.3. Radiation protection
 - 4.4. Contamination and waste management
 - 4.5. Legislation
5. Cardiovascular stress
 - 5.1. Stress physiology and pharmacology
 - 5.2. Dynamic exercise
 - 5.3. Pharmacological stress
 - 5.4. Life support
 - 5.5. Contraindications
6. Methodology
 - 6.1. Imaging protocols
 - 6.1.1. Myocardial imaging
 - 6.1.2. Blood pool imaging
 - 6.1.3. Hybrid imaging

- 6.2. ECG gating
 - 6.3. Image processing
 - 6.4. Assessment of myocardial ischaemic and scar burden
 - 6.5. Parametric imaging
 - 6.6. Attenuation and other corrections
- 7. Image interpretation
 - 7.1. Myocardial perfusion
 - 7.2. Myocardial viability
 - 7.3. Myocardial innervation
 - 7.4. Blood pool imaging
 - 7.5. Other radionuclide imaging
 - 7.6. Artefact
 - 7.7. Basic interpretation of other forms of imaging
- 8. Radionuclide imaging in clinical cardiology
 - 8.1. Indications and contraindications
 - 8.2. Guidelines and appropriate use criteria
 - 8.3. Comparison with other imaging techniques
- 9. Radionuclide imaging in ischaemic heart disease
 - 9.1. Stable coronary artery disease
 - 9.1.1. Diagnosis
 - 9.1.2. Prognosis
 - 9.2. Myocardial infarction and unstable coronary artery disease
 - 9.2.1. Diagnosis
 - 9.2.2. Prognosis
 - 9.2.3. Imaging in the emergency department
- 10. Radionuclide imaging in heart failure
 - 10.1. Assessment of systolic and diastolic left ventricular function
 - 10.2. Assessment of right ventricular function
 - 10.3. Myocardial viability, stunning and hibernation
 - 10.4. Myocardial innervation
 - 10.5. Ventricular resynchronisation therapy
- 11. Radionuclide imaging in arrhythmias
 - 11.1. Effect of arrhythmia on image acquisition and interpretation
 - 11.2. Assessment for defibrillator implantation
 - 11.3. Assessment before atrial and ventricular ablations
- 12. Radionuclide imaging in myocardial and other disorders
 - 12.1. Primary myocardial disorders
 - 12.1.1. Dilated cardiomyopathy
 - 12.1.2. Hypertrophic cardiomyopathy
 - 12.1.3. Restrictive cardiomyopathy
 - 12.1.4. Constrictive disorders
 - 12.2. Secondary myocardial disorders
 - 12.2.1. Hypertrophy
 - 12.2.2. Myocarditis
 - 12.2.3. Sarcoidosis
 - 12.2.4. Amyloidosis

- 12.2.5. Other infiltrative disorders
 - 12.2.6. Oncology and myocardial toxicity
 - 12.3. Imaging of Infection and other forms of inflammation
 - 12.4. Imaging of metabolism and other molecular processes
 - 12.5. Heart transplantation
 - 12.6. Cardiac neoplasms
- 13. Radionuclide imaging in congenital heart disease
 - 13.1. Coronary anomalies
 - 13.2. Myocardial bridging
 - 13.3. Shunts
 - 13.4. Complex anomalies
- 14. Radionuclide imaging of the heart in lung disease
 - 14.1. Pulmonary embolism
 - 14.2. Chronic obstructive pulmonary disease
 - 14.3. Pulmonary hypertension