

## August 2013 – Nuclear medicine

CPD questionnaires must be completed online via [www.cpdjournals.co.za](http://www.cpdjournals.co.za)  
After submission you can check the answers and print your certificate.



True (A) or false (B):

### NUCLEAR MEDICINE IN ONCOLOGY 1: LYMPHOMA, AND CANCER OF THE LUNG, COLON AND OESOPHAGUS

1. F-18 FDG-PET/CT is frequently used for the diagnosis of oesophageal carcinoma.
2. The use of PET/CT with FDG is well established in Hodgkin and high-grade non-Hodgkin lymphomas, but in low-grade non-Hodgkin lymphoma it should not be used routinely.
3. Futile thoracotomies can be avoided in a significant number of patients with non-small-cell lung carcinoma by including F-18 FDG-PET/CT scanning in the staging work-up of such patients.

### NUCLEAR MEDICINE IN ONCOLOGY 2: BREAST, PROSTATE, AND CERVICAL CANCER, MELANOMA, AND NEURO-ENDOCRINE TUMOURS

4. Bone scans done for the identification of skeletal metastases have a high specificity.
5. FDG can be taken up by malignant lesions as well as inflammatory lesions.
6. Sentinel lymph node imaging and biopsy are reserved for patients with clinically palpable lymph nodes.

### TARGETED RADIONUCLIDE THERAPY

7. The goal of targeted radiotherapy is the selective delivery of radiation to cancer cells in a way that causes minimal toxicity to surrounding normal tissues.
8. Peptide receptor radionuclide therapy (PRRNT) is based on the fact that about 70% of neuro-endocrine tumours express somatostatin receptors (SSTRs) on the cell surface, which constitutes an excellent therapeutic target.
9. Selective internal radiation therapy (SIRT) or transarterial radio-embolisation using Y-90-labelled microspheres aims to selectively target radiation to all liver tumours while limiting the dose to normal liver parenchyma.

### INFECTION IMAGING IN NUCLEAR MEDICINE

10. Bone scanning with Tc-99m MDP does not have a place in the evaluation of osteomyelitis.
11. A negative gallium scan of the chest excludes the possibility of infection in an HIV-positive patient.
12. Labelled leukocyte imaging is the best modality for diabetic foot.

### INTEGRATED IMAGING – THE COMPLEMENTARY ROLES OF RADIOLOGY AND NUCLEAR MEDICINE

13. PET/CT involves performing a PET scan and a CT scan in immediate succession on one integrated imaging device.
14. In a patient with cancer, if a lesion on a bone scan is normal on X-ray, bone metastases are unlikely.

### NUCLEAR CARDIOLOGY IN THE CLINICAL SETTING

15. Patients with a viable myocardium are at lower risk of hard events than those without viability when treated medically and not referred for revascularisation.
16. The risk for hard cardiac events (death or non-fatal myocardial infarction) after a normal myocardial perfusion SPECT scan is low.

### BRAIN IMAGING WITH SPECT AND PET

17. Patients with vascular dementia typically show reduced perfusion bilaterally in the temporo-parietal cortex.
18. Mild traumatic brain injury (mTBI) is commonly detected with SPECT, while the MRI scan is normal.

### THE USE OF NUCLEAR MEDICINE IN CHILDHOOD

19. In neonates diagnosed with congenital hypothyroidism, the thyroid scan should be performed as soon as possible to avoid delay in the institution of thyroid replacement therapy.
20. Obstructive uropathy can be reliably diagnosed after one renogram.

A maximum of 5 CEUs will be awarded per correctly completed test.