

# CPD QUESTIONNAIRE

Give ONE correct answer for each question.

1. Regarding ionising radiation, identify one correct answer:

- A. Medical ionising radiation sources give a moderate contribution to the population dose from man-made sources.
- B. Most of this radiation contribution comes from sources other than diagnostic X-rays.
- C. There is a stabilised concern about the use of ionising radiation in diagnostic radiology.
- D. South Africa is a healthcare level II country according to the UNSCEAR definition based on physician densities. This healthcare level classification broadly translates to 150 X-ray examinations per 1 000 inhabitants.

2. Which one of the following statements is true?

- A. Irradiation for medical purposes differs from most other types of radiation exposure in that the benefit is normally limited to the person receiving the dose, and it is assumed that the benefit does not necessarily outweigh associated hazards.
- B. In line with the ALARA principle, the Directorate of Radiation Control (DRC) in the Department of Health, South Africa, has mandated all facilities having fixed fluoroscopy X-ray units to have a dose-area-product (DAP) meter installed on their units.
- C. The preceding legal requirement was communicated as an annexure separate to the licensing document for all fixed fluoroscopy units.
- D. In comparison with stochastic effects, deterministic effects are a greater cause of concern in diagnostic radiology as they occur above a certain threshold dose.

3. Which one of the following statements is false?

- A. Spinal segmental dysgenesis is a rare congenital spinal abnormality seen in neonates and infants.
- B. The condition is segmental in nature, but with abnormal vertebrae also above and below the malformation.
- C. It is a condition in which a segment of the spine and spinal cord fails to develop normally.
- D. It is commonly associated with various abnormalities that affect the heart and genitourinary, gastrointestinal tract and skeletal systems.

4. Which one of the following radiological signs is not associated with spinal segmental dysgenesis?

- A. Lumbar or thoraco-lumbar spinal dysgenesis or agensis causing kyphosis of one or more vertebrae.

- B. Focal spinal cord narrowing with absent exiting nerve roots.
- C. Bony defects that include dysmorphic, hypoplastic or absent vertebrae; focal spinal canal stenosis; and atrophy of the spinal cord.
- D. Congenital paraplegia and congenital lower limb deformity.

5. With regard to trans-abdominal ultrasonic findings correlated with CD4+ counts in adult HIV-infected patients, which one of the following statements is false?

- A. The degree of immunodeficiency is related to the level of the CD4+ count and, as such, the CD4+ count is a good index for monitoring the disease's progression.
- B. Splenic hyperechogenicity was found to increase in proportion as the CD4+ count decreased.
- C. Gallbladder wall thickening and cholelithiasis both correlate with CD4+ count.
- D. Patients with diffuse hypoechoic pancreatic parenchyma have associated pancreatic enlargement.

6. Identify the one false statement among the following.

- A. Most sonographic abnormalities correlate with CD4+ counts, indicating that there is a strong direct association between the infection stage, the CD4+ count and ultrasound findings.
- B. A myriad of sonographic abnormalities can appear in the abdomens of HIV/AIDS patients.
- C. Splenomegaly, hepatomegaly, increased renal cortical echogenicity, lymphadenopathy, thickened bowel walls and fluid-filled bowels correlate with CD4+ counts.
- D. Ultrasound scans should be used as a routine baseline investigation as well as in the follow-up of HIV-infected patients.

7. Regarding ionising radiation, all the following are true except:

- A. Fluoroscopy examinations can lead to various radiation effects, e.g. transient erythema, epilation, erythema, pericarditis, dermal necrosis, symptomatic skin reactions, non-symptomatic skin reactions and skin cancer, depending on the duration of the beam ON time.
- B. Should the procedure be prolonged unexpectedly, the radiologist should consider enlarging the X-ray field size or altering the X-ray beam collimation.
- C. To prevent skin injuries, the entrance surface doses should be monitored from direct dose measurements or from observing the change in the patient's skin colour.
- D. The International Commission on Radiological Protection (ICRP) has recommended the use of diagnostic reference levels (DRLs) as a first step in the optimisation of diagnostic radiography.

8. Identify the one false statement below:

- A. DRLs are defined as dose levels in medical radio-diagnostic practices or, in the case of radiopharmaceuticals, levels of activity, for typical examinations of groups of standard-sized patients or standard phantoms for broadly defined types of equipment.
- B. A DRL is not a dose limit and does not apply to a single individual; it must be established for typical examinations, for groups of standard-sized patients or standard phantoms, and for broadly defined types of equipment.
- C. DRLs are expected not to be exceeded for standard procedures when good and normal practice regarding diagnostic and technical performance is applied.
- D. There is a narrow spread in the radiation doses registered for any one type of examination.

9. Identify the one false statement below:

- A. The large variability in delivered radiation dose proves that the studied fluoroscopic examinations stand to gain from dose optimisation.
- B. The great potential usefulness of DAP meters in radiology for dose optimisation is in line with efforts to optimise diagnostic radiography.
- C. There is strong recommendation for the establishment of DRLs in South Africa for the most frequent examinations in general radiography, fluoroscopy, mammography and computed tomography.
- D. A common protocol is of no value in determining patient doses for the purposes of establishing DRLs.

10. Bates Alheit is:

- A. The lead singer in a Cape Town band.
- B. Secretary-General of NEHAWU.
- C. The Minister of Public Works and Foreign Affairs.
- D. Executive Director of the RSSA.

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MDB 015/180/04/2009