POST-COURSE KNOWLEDGE ASSESSMENT

Amber Waves Technical Workshop

Kansas City, MO

08 June 2012

1. Mr. W's history reveals he recently handled an unshielded radiography source. Which test should be ordered to aid in evaluating his condition?

   a. Thyroid scan
   b. Whole body counting
   c. Analysis of nasal swabs
   d. Complete Blood Count (CBC), White Blood Count (WBC) differential including the Absolute Lymphocyte Count (ALC) and platelet count

2. Which of the following would be evident within minutes after an acute, local, high dose, penetrating radiation exposure?

   a. Severe pain in the area
   b. Sensation of burning
   c. Blister formation in the involved area
   d. No obvious abnormality

3. One of the earliest symptoms of a 2 Gy acute whole body exposure (penetrating radiation) is:

   a. Infection
   b. Bleeding
   c. Vomiting
   d. Epilation (hair loss)

4. Although all these effects are possible after an acute, high dose radiation exposure, the basic underlying pathology in a total or partial body exposure is:

   a. Loss of electrolytes
   b. Sloughing of the GI epithelium
   c. Loss of immature and rapidly dividing cells
   d. Decrease in hemoglobin

5. Which of the following tests should be ordered for the internally contaminated patient to assess the effectiveness of chelation therapy?

   a. Chromosome analysis
   b. Hematological studies
   c. Assays of body excreta
   d. Analysis of wound swabs & swipes

6. The accepted method for treating a person internally contaminated with uranium is:

   a. Use of potassium iodide (130 mg)
   b. Give stable uranium for dilution purposes
   c. Administration of prussian blue
   d. Administration of sodium bicarbonate

7. DTPA therapy is most effective for treating internal contamination with soluble plutonium if initiated within:

   a. 12 hours
   b. 18 hours
   c. 6 hours
   d. 24 hours

8. A fully clothed, heavily contaminated patient in hemorrhagic shock arrives via ambulance. Which should be done first?

   a. Quickly flush off contaminants
   b. Expose patient and treat for shock
   c. Survey and record contaminated areas
   d. Monitor to determine need for radiation protection

9. A shipment of radioactive material has been involved in an accident. While extricating a victim, a paramedic touched some material that immediately caused a burning sensation, followed by erythema and vesiculation. Treatment of the paramedic's injury is based on the knowledge that:

   a. External contaminants can be removed by use of a chlorine bleach solution.
   b. The half-life of the radioactive material involved will determine the urgency of treatment.
   c. Heat or corrosives cause prompt injury, while radiation does not.
   d. Alpha particles do not penetrate the epidermis.

10. Radioactive contaminants differ from most hazardous biological and chemical contaminants in that:

    a. They are much more dangerous to humans
    b. They can be readily detected with special equipment
    c. They produce symptoms sooner
    d. They are not absorbed by body tissues

11. Alpha emitters are primarily a hazard:

    a. To the lens of the eye
    b. When internalized
    c. To the skin
    d. Only to children

12. The difference between irradiation and contamination is:

    a. Irradiation is planned exposure to radiation and contamination is accidental.
    b. Irradiation is done in a special facility, while contamination can occur anywhere.
    c. Contamination is more harmful than irradiation.
    d. Irradiation is the absorption of radiation energy; contamination is the presence of radioactive material in an undesirable location.

13. Choose the priority (order) in which decontamination should occur.

    a. Wounds, areas around body orifices, and intact skin
    b. Face, body, and extremities
    c. Intact skin, face, and wounds
    d. Areas around body orifices, body, and extremities

14. 50% of exposed people will die of radiation sickness if not given treatment with an absorbed dose of:

    a. 350-400 rads in 4-5 hours
    b. 25–50 rads in 24 hours
    c. 200 rads in 24 hours
    d. None of the above

15. The unit that considers the biological effect of radiation exposure in man is:

    a. Curie / Becquerel
    b. Rad
    c. Rem
    d. None of the above

16. The instrument that identifies the energy of the gamma radiation emitted and aids in determining the specific type of material is:

    a. GM pancake probe
    b. Personal dosimeter
    c. Dose rate meter
    d. Gamma spectrometer