The CPD programme for *SAMJ* is administered by Medical Practice Consulting.
CPD questionnaires must be completed online at www.mpconsulting.co.za.

Cellular regenerative therapy for acquired noncongenital musculoskeletal disorders

1. Clinical stem cell therapies have not progressed significantly beyond their use in the treatment of haematological diseases and burns. This may be attributed to (one answer is correct):
   a. detorsion of the sternum poor cellular survival post transplantation
   b. poor cellular engraftment and differentiation post transplantation
   c. an inflammatory, hypoxic or fibrotic host environment with underlying pathology
   d. all of the above.
2. Stem cells from the bone marrow, which have shown the most promise as therapeutic agents, include (one answer is correct):
   a. satellite cells
   b. stromal-derived stem cells
   c. haematopoietic and mesenchymal stem cells
   d. haematopoietic, but not mesenchymal, stem cells.

Bioprinting: Prospects, considerations and challenges for application in South African (SA) clinical environments

3. Bioprinting is a subtractive process of manufacturing biological tissue constructs. (true/false)
4. An optimally designed scaffold will closely mimic the native structural and mechanical properties of a target tissue. (true/false)

HIV and haematopoiesis

5. HIV uses which of the following cell-surface receptors to enter host cells? (one answer is correct)
   a. CD4, CXCR4, CCR5
   b. CXCR4, CCR5, gp120
   c. Tat, CD4, CCR5
   d. None of the above.
6. The most common cytopenia in patients with HIV infection is (one answer is correct):
   a. neutropenia
   b. thrombocytopenia
   c. anaemia
   d. neutrophilia.

Human leukocyte antigen (HLA) diversity and clinical applications in SA

7. On which chromosome is HLA located? (one answer is correct)
   a. chromosome 2
   b. chromosome 6
   c. chromosome 9
   d. X chromosome.
8. Which population shows increased genetic diversity compared with other populations? (one answer is correct)
   a. Africans
   b. Caucasians
   c. Asians
   d. Australians.

Stem cell tourism and spinal cord injury in SA

9. What are the possible complications in patients who may receive stem cell therapy? (more than one answer is correct)
   a. The formation of osteoporosis
   b. The risk of tumour growth
   c. An increase in neuropathic pain or allodynia
   d. An increase in haemoglobin.
10. What does the SCIM III measure? (more than one answer is correct)
    a. walking speed
    b. functional independence in activities of daily living
    c. nerve innervation
    d. bladder and bowel control.

Heterogeneity of cell therapy products

11. Why is *ex vivo* expansion required for cell therapy? (one answer is correct)
    a. To obtain relevant cell numbers
    b. To eliminate unwanted cells
    c. To increase the cost of the product
    d. To create jobs for clinical technicians.
12. Which of the listed conditions are currently being treated in clinical trials with bone marrow-derived mesenchymal stem cells (BM-MSCs)? (one answer is correct)
    a. graft-versus-host disease (GVD)
    b. multiple sclerosis
    c. spinal cord injury
    d. all of the above.

Readers please note: Articles may appear in summary/abstract form in the print edition of the Journal, with the full article available online at www.samj.org.za

A maximum of 3 CEUs will be awarded per correctly completed test.

INSTRUCTIONS

1. Read the journal. All the answers will be found there, in print or online.
2. Go to www.mpconsulting.co.za to answer the questions.

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Primary immunodeficiency (PID) in Africa – a review

13. According to the 2015 report of the International Union of Immunological Societies Expert Committee on Primary Immunodeficiency, primary immunodeficiency diseases are classified into how many major categories? (one answer is correct)
    a. 3
    b. 5
    c. 9
    d. 11.
14. What are the most common infection sites in PID patients? (one answer is correct)
    a. brain and gastrointestinal tract
    b. sinopulmonary and gastrointestinal tract
    c. genitourinary and sinopulmonary
    d. osteoarticular and brain.

Gene and cell therapy in SA: Current status and future prospects

15. Gene therapy is limited to correcting inherited monogenic disorders such as haemophilia A and B. (true/false)
16. The large size and negative charge of nucleic acids make delivery across the negatively charged cell membrane difficult, which necessitates the use of delivery vehicles. (true/false)

Haematopoietic stem cell transplantation (HSCT) in SA: Current limitations and future perspectives

17. Data based on World Health Organization regions showed that (one answer is correct):
    a. the majority of HSCTs performed globally are autologous
    b. the majority of HSCTs performed globally are allogeneic
    c. autologous and allogeneic HSCTs are performed in equal numbers
    d. only allogeneic HSCTs are performed
    e. only autologous HSCTs are performed.
18. It may be challenging for patients of African descent to find a suitable human leukocyte antigen (HLA)-matched donor due to high levels of genetic variation in the genes encoding HLA. (true/false)

Stem cell therapy for neurological disorders

19. Experimental stem cell therapies for neurological diseases are mostly being tested in clinical studies for the following indications? (more than one answer is correct)
    a. multiple sclerosis
    b. spinal cord injury
    c. brain tumours
    d. stroke.
20. Neural stem cell-like cells in clinical development are differentiated from which of the following stem cell sources? (more than one answer is correct)
    a. embryonic stem cells
    b. induced pluripotent stem cells
    c. mesenchymal stem cells
    d. haematopoietic stem cells.

Therapeutic genome engineering: Implications for SA

21. Homology-directed repair (HDR) requires cell division whereas non-homologous end joining (NHEJ) does not. (true/false)
22. Therapeutic genome engineering was first established in SA targeting (one answer is correct):
    a. HIV
    b. albinism
    c. spinal muscular atrophy (SMA)
    d. Duchenne muscular dystrophy (DMD)
    e. hepatitis B virus (HBV).

Transplantation of gene-modified hematopoietic stem cells: Application and clinical considerations

23. What is the rationale for using autologous gene-modified haematopoietic stem cells to treat inherited disorders of the blood and immune system? (more than one answer is correct)
    a. It obviates the need for having to find a genetically matched stem cell donor
    b. It is cheaper than other treatments
    c. It eliminates the risk of GVD, which might occur with allogeneic cells
    d. There is no risk of graft rejection.
24. Which is the most widely used strategy for gene modification of haematopoietic stem cells in the clinic? (one answer is correct)
    a. CRISPR-based approaches
    b. lentiviral vectors
    c. transposons
    d. meganucleases.

Towards the future of blood transfusion – the SA National Blood Service's perspectives on cellular therapeutic services and products

25. The three pillars of patient blood management are (one answer is correct):
    a. anaemia management, management of bleeding and increasing platelet storage duration.
    b. anaemia management, reducing time to blood product availability and transfusion practice education.
    c. anaemia management, management of bleeding and preserving the patient's own blood.
    d. anaemia management, bloodless surgery and drone delivery of blood products.
26. The highest incidence indication for plasma exchange in SA is (one answer is correct):
    a. acute inflammatory demyelinating polyneuropathy
    b. thrombotic thrombocytopenic purpura
    c. myasthenia gravis
    d. neuromyelitis optica.