HIV Functional Cure Through Bone Marrow Transplant

Medicine · Practice Test · 20 Questions

1. What condition has a 63-year-old man been functionally cured of?

A) Hepatitis B
B) HIV
C) Tuberculosis
D) Malaria

2. What medical procedure led to the functional cure of HIV in this patient?

A) Gene therapy
B) Chemotherapy
C) Bone marrow transplant
D) Vaccination

3. From whom did the patient receive the bone marrow donation?

A) An unrelated donor
B) His sister
C) His brother
D) A volunteer

4. What rare genetic mutation does the donor possess that confers resistance to HIV-1?

A) CCR5?32
B) BRCA1
C) CFTR
D) APOE4

5. What does the CCR5?32 mutation prevent the function of on human immune cells?

A) Antibody production
B) Receptors that HIV binds to
C) Red blood cell formation
D) Cell division

6. What type of immune cells does HIV commonly bind to?

A) B cells
B) Macrophages
C) T cells
D) Natural Killer cells

7. What was the gold standard treatment for HIV mentioned in the text before this new development?

A) Surgery
B) Antiretroviral therapy (ART)
C) Plasma exchange
D) Immunoglobulin therapy

8. What is a limitation of ART drugs in treating HIV?

A) They cause rapid organ failure
B) They eliminate the virus entirely
C) They do not eliminate the virus entirely and it can remain dormant
D) They are only effective in children

9. After the transplant, where did researchers search for reservoirs of HIV?

A) Hair follicles and nails
B) Blood, gut tissues, and bone marrow
C) Saliva and tears
D) Nerve endings

10. What did researchers find regarding detectable HIV in the patient's tissues after the transplant?

A) High levels of detectable HIV
B) No detectable HIV
C) Intermittent detectable HIV
D) Only detectable in cerebrospinal fluid

11. According to Marius Trøseid, what is key for a cure in HIV treatment?

A) Peripheral blood engraftment
B) Bone marrow engraftment
C) Gut mucosal tissue engraftment
D) Lymph node regeneration

12. Why is this bone marrow transplant treatment not yet available for most people with HIV?

A) It is too expensive
B) It is too risky compared to ART
C) The technology is still experimental
D) It requires a specific climate to be effective

13. For whom is this bone marrow transplant treatment currently considered primarily?

A) Patients with mild HIV
B) Patients with other malignancies or medical conditions requiring a transplant
C) Patients who have stopped ART
D) Asymptomatic HIV carriers

14. What is a significant risk associated with bone marrow transplants for recipients?

A) Improved immune function
B) Graft versus host disease (GVHD)
C) Weight gain
D) Increased energy levels

15. What does GVHD mean in the context of a bone marrow transplant?

A) The donor cells are rejected by the patient's body
B) The patient's cells attack the donor cells
C) The donor cells attack the patient's body
D) The patient's immune system is completely suppressed

16. What did scientists observe regarding HIV remission even when the donor does not have two copies of the CCR5?32 mutation?

A) HIV remission did not occur
B) HIV remission was less likely
C) HIV infection went into remission
D) The virus became more aggressive

17. What can happen if donor cells are too different from the recipient's cells in a transplant?

A) Increased risk of graft rejection
B) Reduced risk of GVHD
C) Transplant complications such as GVHD could be more of a concern
D) The transplant is more likely to be successful

18. What is a potential risk if donor cells are too similar to the recipient's cells?

A) The treatment could fail to effectively destroy infected T cells
B) The recipient's immune system will be overactive
C) The donor cells will not engraft
D) Severe allergic reactions

19. What type of virus is HIV-1?

A) A bacterium
B) A fungus
C) A retrovirus
D) A parasite

20. What is the primary function of ART drugs for individuals with HIV?

A) To completely eradicate the virus from the body
B) To prevent HIV from reproducing and spreading
C) To boost the immune system to fight off opportunistic infections
D) To repair damaged T cells