

Chapter 98, Self-Assessment Questions

1. Which of the following statements is *false* regarding mobilization of peripheral blood progenitor cells (PBPCs) for autologous transplant?
 - A. The combination of chemotherapy with filgrastim enhances PBPC mobilization relative to filgrastim alone
 - B. Apheresis is continued daily until the target number of PBPCs per kilogram of the recipient's weight is obtained
 - C. For adult recipients, the number of CD34+ cells does not correlate with time to engraftment
 - D. Lower yield of CD34+ cells is associated with administration of stem cell toxic drugs and intensive prior chemotherapy or radiotherapy

2. The donor may experience bone pain with growth factor injections Which of the following statements is *true* regarding the different graft sources for allogeneic transplant?
 - A. PBPC grafts contain less T and B cells than bone marrow grafts and therefore a decreased risk of graft-versus-host disease
 - B. A bone marrow graft is associated with quicker neutrophil and platelet engraftment
 - C. Umbilical cord blood transplants are limited by the inability to use donor-lymphocyte infusions in the event of relapse.
 - D. Adult patients are not eligible for umbilical cord blood transplants
 - E. T-cell-depleted grafts reduce the incidence of GVHD with similar incidence of graft failure and relapse

3. A 45-year-old woman who presents with non-Hodgkin lymphoma in second complete remission. You are explaining the rationale related to myeloablative preparative regimens for autologous hematopoietic stem cell transplantation (HSCT). Which of the following statements is *true* regarding the use of HSCT for this patient?
- A. Myeloablative regimens result in mixed donor chimerism
 - B. The anti-lymphoma effect is mediated by high chemotherapy doses
 - C. The antilymphoma effect is mediated by high chemotherapy doses and a graft-versus-tumor (GVT) effect
 - D. Low chemotherapy doses are needed to ensure engraftment with subsequent GVT effects
 - E. High chemotherapy doses are needed for successful engraftment
4. When counseling a patient regarding potential toxicities of busulfan and fludarabine when used as a preparative regimen for HSCT, which of the following potential adverse effects should *not* be discussed?
- A. Seizures
 - B. Nausea and vomiting
 - C. Sinusoidal obstructive syndrome (SOS)
 - D. Hepatotoxicity
 - E. All of the above should be discussed
5. Which of the following statements is *false* regarding the use of total body irradiation containing preparative regimens?
- A. TBI is effective against disease in sanctuary sites such as the central nervous system and testes

- B. Cataracts are one of the long-term toxicities of TBI
 - C. TBI is a component of both myeloablative and nonmyeloablative preparative regimens
 - D. TBI does not result in active metabolites that may interfere with the activity of donor hematopoietic cells
 - E. All of the above are true statements
6. A 65-year-old man is undergoing a nonmyeloablative HSCT from a HLA-matched sibling donor for acute myeloid leukemia in first complete remission per a clinical trial. His preparative regimen consists of fludarabine and busulfan. Which of the following statements are *true* regarding nonmyeloablative transplants?
- A. The nonmyeloablative preparative regimen completely eliminates host normal and malignant cells
 - B. Autologous recovery will never occur if the graft is rejected
 - C. After chimerism develops, donor-lymphocyte infusion can be administered safely in patients without GVHD to eradicate malignant cells
 - D. Adverse effects are more likely with nonmyeloablative regimens compared to myeloablative regimens
 - E. Nonmyeloablative regimens are not recommended in older patients
7. Which of the following pharmacokinetic and pharmacodynamic relationships have been observed in HSCT patients?
- A. Busulfan area under the curve (AUC) and sinusoidal obstruction syndrome (SOS) in those receiving BU/CY
 - B. Cyclosporine trough concentration and nephrotoxicity

- C. SOS and the AUC of cyclophosphamide metabolites
 - D. CYP 3A4 interactions with tacrolimus
 - E. All of the above
8. Which of the following are appropriate scenarios for antifungal prophylaxis in the HSCT setting?
- A. Fluconazole 400 mg orally daily beginning day +1 after HSCT
 - B. Posaconazole 200 mg orally three times per day in patients with grade II-IV gastrointestinal GVHD receiving total parenteral nutrition
 - C. Itraconazole 200 mg orally twice daily beginning with administration of busulfan and cyclophosphamide preparative regimen prior to HSCT
 - D. Voriconazole 200 mg orally twice daily beginning day +5 after autologous HSCT
 - E. All of the above are acceptable antifungal prophylaxis regimens for given scenarios
9. A 34-year-old man is on day +35 after receiving cyclophosphamide/total body irradiation preparative regimen who complains of new onset diarrhea and rash. Graft-versus-host disease prophylaxis includes tacrolimus 2 mg orally twice daily (concentration: 2 ng/mL), and methotrexate 15 mg/m² administered on day +1 and 10 mg/m² on days +3, +6, and +11. A skin biopsy is performed and reveals Grade II-IV GVHD. The recommended treatment is:
- A. Increase tacrolimus to 3 mg orally twice daily and check trough in 2 to 3 days; add methylprednisolone 2 mg/kg/day
 - B. Methylprednisolone 2 mg/kg/day and discontinue tacrolimus
 - C. Increase tacrolimus to 3 mg orally twice daily and add sirolimus
 - D. Add mycophenolate 15 mg/kg per dose twice daily

- E. Add antithymocyte globulin (ATG)
10. Plerixafor is indicated in which of the following scenarios?
- A. Allogeneic transplant with a matched sibling donor
 - B. In combination with granulocyte colony stimulating factor in preparation for autologous transplant for acute leukemia
 - C. To mobilize PBPCs for collection and subsequent autologous transplantation for NHL and MM
 - D. Alternative mobilization strategy for patients with an allergy to filgrastim
 - E. None of the above
11. Which of the following statements is *false* regarding the management of viral infections during allogeneic HSCT?
- A. Patients undergoing myeloablative HSCT are at highest risk for herpes simplex virus from days 0 to 30 after HSCT
 - B. Preemptive therapy for CMV includes initiating ganciclovir upon detection of CMV through blood assays
 - C. Foscarnet may be used for preemptive therapy of CMV reactivation prior to engraftment
 - D. CMV monitoring should occur through at least day + 30 after HSCT
12. To reduce potential exposure of HSCT recipients to such respiratory viruses, visitors and staff members with respiratory signs and symptoms of a viral illness may not be allowed direct contact with patients.
- Which of the following statements is false regarding histocompatibility and hematopoietic stem cell transplantation?

- A. Siblings are the best chance for a histocompatible match within a family
- B. The chance for complete histocompatibility occurring in an individual with only one sibling is 25%
- C. Histocompatibility is evaluated by studies of cell surface antigens, human leukocyte antigens (HLA)
- D. 70% of patients with more than one sibling will have an HLA-identical match
- E. The degree of histocompatibility between donor and recipient is the most important factor associated with the development of acute GVHD

13. What monitoring plan for engraftment would you recommend for a patient undergoing a myeloablative HSCT with a busulfan/cyclophosphamide preparative regimen?

- A. CBC with differential weekly beginning on day 0
- B. CBC with differential daily beginning on day +7
- C. CBC daily beginning at the initiation of the preparative regimen
- D. CBC with differential daily beginning at the initiation of the preparative regimen
- E. CBC with differential twice daily beginning at the initiation of the preparative regimen

14. Which of the following may be initiated in steroid-refractory chronic GVHD?

- A. Rituximab
- B. Mycophenolate mofetil
- C. Extracorporeal photochemotherapy
- D. Infliximab
- E. All of the above are choices for steroid-refractory chronic GVHD

15. Long-term survivors of HSCT are at risk for all of the following except

- A. Osteopenia
- B. Hypothyroidism
- C. Infertility
- D. Infectious complications
- E. Diabetes

Answers to Self-Assessment Questions

1. C
2. C
3. B
4. E
5. E
6. C
7. E
8. A
9. A
10. C
11. D
12. D
13. D
14. E
15. E

