

Transfusion Medicine Boot Camp for Non-Physician Prescribers

Materials based on Transfusion Camp 2018-2019 and 2020-2021 with permission from Dr. Yulia Lin and TM Boot Camp Medical Staff

Afternoon Seminar on Day 2

Consent and Patient Blood Management

Case 1

You are attending in the critical care unit of at a community hospital and have sought advice from a neurologist at an academic hospital regarding a patient who has presented with progressive flaccid paralysis following a viral infection. The patient is awake and clinically stable but is now completely paralyzed, ventilator-dependent, and only able to communicate through blinking. The neurologist suspects Guillain-Barre Syndrome and recommends a course of high-dose IVIG (2 g/kg administered over 2 days) .

1. Who should consent be sought from in this case?
 - a. Consent not required in this situation
 - b. The patient
 - c. The patient's next of kin
 - d. The public guardian

2. Which of the following risks should be disclosed?
 - a. Acute renal failure
 - b. Anaphylaxis
 - c. Hemolysis
 - d. Thrombosis

Case 2

You are called to the ER to see an 80 year-old woman with hemopericardium 3 days following insertion of a pacemaker for sick sinus syndrome. Physical examination reveals a heart rate of 130 BPM, blood pressure of 90/50 mmHg with a 15 mmHg pulsus paradoxus, quiet heart sounds and distended neck veins. Laboratory investigations reveal a Hgb of 100 g/L, a WBC of $9 \times 10^9/L$ and a platelet count of $90 \times 10^9/L$; her INR is elevated at 2.9, aPTT and fibrinogen are normal at 40 seconds and 3.0 g/L, respectively, and the patient's family informs you she is on long-term warfarin for atrial fibrillation. A bedside echocardiogram reveals a large pericardial effusion. A decision is made to administer prothrombin complex concentrate (PCC) while arrangements are made to perform an urgent bedside pericardiocentesis.

3. Which of the following individuals should obtain informed consent for PCCs?
 - a. The cardiologist who prescribed the patient's warfarin
 - b. The hematologist who consulted on the cause of the coagulopathy
 - c. The ICU fellow who will be performing the pericardiocentesis
 - d. The nurse who explained the echocardiogram results to the patient
4. Which of the following should not be offered as an alternative to PCC infusion to this patient?
 - a. Plasma
 - b. IV vitamin K
 - c. Platelets
 - d. Pericardiocentesis while fully anticoagulated

Case 3

A 30 year-old woman, referred for elective thoracolumbar spinal fusion with instrumentation and bone grafting for severe scoliosis, is noted on the day before surgery to have a hemoglobin of 80 g/L and an MCV of 60 fL. She reports a history of chronic anemia and menorrhagia but is otherwise well and is keen to have the surgery performed as soon as possible. The attending surgeon anticipates that there will be significant bleeding during the procedure and, given the patient's current hemoglobin is fairly certain that transfusion support will be required. In fact, he suggests that 2 units of RBCs be transfused before even taking the patient to the OR, but defers to your opinion as the anesthetist regarding the best course of action.

5. Which of the following is the greatest long-term risk posed to this patient from a red blood cell transfusion?
 - a. Chronic hepatitis B
 - b. Iron overload
 - c. Pregnancy complications
 - d. Transplant complications
6. Which of the following is the best course of action in this situation?
 - a. Administer IV iron and erythropoietin today for tomorrow's surgery
 - b. Postpone the surgery and refer for anemia management
 - c. Maximize blood sparing interventions intra-operatively, including systemic tranexamic acid and careful use of electrocautery
 - d. Seek consent from the patient to transfuse 2 units of RBCs prior to taking her to the OR

Case 4

A 64 year old woman is being seen in preoperative clinic in preparation for an elective revision total hip arthroplasty (2020 provincial transfusion rate 32%). She has been feeling fatigued over the past 6 months. She attributes this to her worsening hip pain. Her past medical history is significant for hypertension. Her current medications include ASA, Ramipril. Her weight is 80 kg. Her labs show the following: hemoglobin 95 g/L, MCV 75 fL, WBC $6.5 \times 10^9/L$, platelets $425 \times 10^9/L$. Her creatinine is 80 $\mu\text{mol/L}$. Her ferritin is 20 mcg/L. The surgeon has a spot for the surgery next week.

7. Which one of the following tests is indicated to investigate the cause of her anemia?
 - A) GI workup including colonoscopy
 - B) Hemoglobin electrophoresis
 - C) Serum protein electrophoresis
 - D) Vitamin B12

8. Which one of the following is the appropriate next step in her management?
 - A) Delay surgery until investigations complete
 - B) Delay surgery until patient iron replete
 - C) Proceed with surgery next week, no interventions needed
 - D) Proceed with surgery next week, start iron supplementation this week

9. Which one of the following is an appropriate treatment for her anemia?
 - A) Feramax 150mg po OD
 - B) Ferrous fumarate 300 mg po OD
 - C) IV iron 300-500mg
 - D) IV iron 1000-1200mg

Case 5

You are asked to assess a 16 year-old boy for a lung transplant for bleomycin-induced lung toxicity. The patient demonstrates an understanding of the procedure but reports that he has recently become a Jehovah's Witness and therefore does not wish to be transfused. His parents, realizing that refusal of transfusion support may delay his eligibility for surgery, wish to over-rule his wishes on the argument that he has not reached the age of majority and therefore cannot fully understand the implications of his decisions. They also recall being told that he requires "special blood" due to his history of Hodgkin's disease, but are unsure exactly what that refers to.

10. In adjudicating between the conflicting wishes of the patient and his family, which of the following is the best course of action?
- a. Ask the Jehovah's Witness hospital liaison and Hospital legal affairs to meet with the patient and his family in order to achieve consensus
 - b. Defer surgery until the patient is 18 years of age
 - c. Respect the parent's wishes, even if that means waiting until the patient is under anesthesia before transfusing
 - d. Respect the patient's wishes, even if that means cancelling the surgery