



ASPHO Pediatric Hematology/Oncology Review Course Instructions for Writing Self-Assessment Questions

Introduction

The guidelines below are aimed to assist speakers of the ASPHO Pediatric Hematology/Oncology Review Course prepare self-assessment questions (SAQs) covering the areas on which their presentation is based. These questions should include at least three new ones in addition to the others that have been used previously but which (if necessary) have been modified.

The questions should cover areas you will be discussing in your presentation. Ideally, each question should be linked to a specific “knowledge bit” in the content specification outline used by the American Board of Pediatrics (ABP) to develop test questions. The suggested format described below mirrors that used by the ABP and other testing agencies. Please consult the content outline sections relevant to your presentation and adhere to the guidelines provided below.

Guidelines for Writing Questions

1. A question should consist of four parts:
 - The stem (a brief clinical vignette or piece of background information on which the question is based)
 - A specific question that is being asked (sometimes included within the vignette)
 - Four or five choices, with only one being the clearly correct answer (and so designated by an asterisk), with the other choices being “distractors”
 - An explanation: This should consist of a few sentences or even one or two short paragraphs that indicate why the correct answer is correct as well as why the incorrect choices are not correct answers. Providing this explanation is of great value to the learner. Examples are listed below.
2. All questions should be multiple choice, with a minimum of four and ideally five choices. There should be no matching or true/false questions.
3. All questions should have only one correct answer. Avoid “none of the above” or “all of the above” responses. Also, be careful that two or more of the answers are not mutually contradictory. Please indicate the correct answer by placing an asterisk in front of it.
4. Avoid “except” or “all but one” questions or questions that contain double negatives.
5. The stem should be no more than five or six lines (and often two or three will suffice). The stem should be a clinical case or issue aimed at testing the person’s general knowledge and judgment rather than simply retention of facts. Avoid including lengthy or unnecessary information about the case. The stem should contain specific background relevant to the correct answer and distractors. For instance, “Which of the following statements regarding vitamin B₁₂ is correct?” is not an appropriate stem.

6. Whether or not you have experience writing questions like this before, we suggest that you have one or more of your associates or colleagues review them for content, accuracy, and appropriateness before submitting them.

Examples

Good questions:

1. A ten-month-old boy with presumed chronic immune thrombocytopenia (ITP) comes to you for a second opinion. The family history is negative. The physical examination is normal except for bruises. The CBC is normal except for a platelet count of 16,000 per mm^3 . The platelets are unusually small on the peripheral blood smear.

Which of the following is the most appropriate next step in the evaluation of this patient?

- a. Bone marrow aspirate
- b. Examination of the platelets by electron microscopy
- * c. Molecular studies of the WASP gene
- d. Anti-platelet antibody measurement
- e. Molecular studies of the MYH9 gene

Explanation:

The young age and small platelets on the blood film suggest that this infant does not have ITP but instead has Wiskott-Aldrich syndrome (WAS) or the related condition X-linked hereditary thrombocytopenia (XLT). Thus, the appropriate diagnostic step would be characterization of the WASP gene on the X chromosome to define a possible mutation site. The specific mutation correlates well with clinical features and outcome. Some patients have only thrombocytopenia, whereas others have the full blown WAS with eczema, severe immunodeficiency, and predisposition to malignancy.

The other two choices are clearly incorrect. A bone marrow aspirate would not differentiate ITP from WAS or XLT. Platelet electron microscopy would only confirm the presence of small platelets. Anti-platelet antibody measurements are imprecise. A MYH9 mutation would result in large rather than small platelets.

2. A four-year-old with newly diagnosed acute lymphoblastic leukemia (weight 20 kg) has a hemoglobin concentration of 5.5 gm/dl. Plans are made to administer packed red blood cell transfusions with the aim of achieving a post-transfusion hemoglobin concentration of 10 gm/dl. What total volume of packed RBC's should the child receive?
 - a. 175 ml
 - b. 300 ml
 - *c. 425 ml
 - d. 600 ml
 - e. 900 ml

Explanation:

A "standard" transfusion of 10ml/kg of packed red blood cells raises the hemoglobin by 2.0 to 2.5 g/dl above the baseline. Knowing this and doing some simple arithmetic, choice C is the correct answer. With the near universal use of additive solutions to preserve red cell viability,

hemoglobin increments following packed red cell transfusions are not quite as high as they were a decade or more ago.

Poor questions:

3. Each of the following may cause a prolonged activated partial thromboplastin time (PTT) except
- *a. Factor VII deficiency
 - b. Factor VIII deficiency
 - c. Factor IX deficiency
 - d. Factor XI deficiency
 - e. Factor XII deficiency

Comment: This is an “except” question, a type which is considered by test writing specialists as confusing and uninformative.

4. Which of the following statements regarding Hodgkin disease is false?
- a. Current cure rates are over 85%
 - *b. In young children it is more common in girls than in boys
 - c. Pruritis is not considered a B symptom
 - d. Breast cancer is a complication reported in long-term survivors
 - e. Splenectomy is no longer routinely necessary as a component of staging

Comment: This question is a poor for a variety of reasons. First, the stem is not informative and bears no relationship to the answers. Second, a number of the answers are double negatives. Finally, the choices include management as well as prognosis or long-term complications.

Excellent well-written questions covering your topic are an important feature of the course and will be much appreciated by the attendees. Many thanks for your efforts towards making this course a resounding success for our ASPHO.