

Pediatric Core Knowledge

Students should be able to articulate the three major issues surrounding the following cases. Students should use the core articles and a major text (abridged version is acceptable) as references.

1. A six-week-old male infant presents to the pediatric emergency room with a temperature of 100.6°.
 - a) What would you do?
 - b) What percentage of these children will have a serious bacterial infection (SBI)?
 - c) What are the organisms most like to cause an SBI?
 - d) How would the organisms differ for a two-week-old?

2. A two-week-old female infant is admitted for a fever to rule out a serious infection. The work up is unremarkable except for a traumatic (bloody) LP. The infant is on Ampicillin and Cefotaxime. She has a seizure (generalized tonic clonic for five minutes) and is sleepy - presumably post ictal.
 - a) What would you do?

3. A six-week-old male infant has fever and a bulging fontanel. You do a spinal tap Pus comes out of the needle.
 - a) What would you do?

4. An 18-month-old male has an acute onset of fever to 105 in the pediatric emergency room. His history and physical exam do not reveal an obvious source of infection. He looks generally well (not "sick").
 - a) What percentage of children would have a positive blood culture?
 - b) What organisms would you expect if the blood culture were positive?
 - c) Why is bacteremia dangerous?
 - d) Would you get a urine culture?
 - e) How would you obtain a urine culture (bag mid-stream or cath or super pubic)?
 - f) What percentage of urine cultures would be positive?
 - g) List three of the most likely viral infections that could be causing the fever and what findings would you look for?

5. You make the diagnosis of a UTI in a one year old girl who presents with fever.

- a) How would you manage this patient?
 - b) What if she were two months old?
 - c) What if she were 16 years old?
6. A two-year-old boy has swollen left eye after an insect bite.
- a) What is the differential diagnosis?
 - b) How would you treat this patient?
7. A two-year-old boy has a red throat?
- a) Would get a throat culture?
 - b) What argument could you make for not getting a culture?
8. A one week old boy has injected conjunctivitis.
- a) What organisms are you concerned about?
 - b) How would a lacrimal duct obstruction present?
9. A five-month-old by has diarrhea.
- a) What is the most likely etiology?
 - b) What clues would make you think of a bacterial etiology?
 - c) When would you treat Salmonella?
 - d) What syndrome is associated with E-Coli 015H7?
 - e) Would you get a stool smear and culture?
10. A four-week-old infant has two episodes of vomiting green material. His physical exam is benign.
- a) What would you do?
11. A one year old boy presents to the pediatric emergency room with lethargy. He is extremely sleepy; a student describes him as "looking like he's been smoking marijuana," the rest of his exam is normal.
- a) What is your differential diagnosis?
12. A seven-week-old boy has been vomiting after every feed. His exam is normal.
- a) What might his electrolytes be?
 - b) How would you work up this patient?
 - c) Could you make a definitive diagnosis without any labs or studies? If yes, how?

13. A one year old presents with a history of severe episodic abdominal pain. His exam is normal. You witness an episode of pain that subsides in one minute; the abdominal exam is benign.
 - a) What would you do?
 - b) What if you got an x-ray and it had a nonspecific gas pattern?
 - c) What disease is most likely, is this an emergent condition?

14. An infant fails to pass meconium within 24 hours.
 - a) List two causes.
 - b) What diagnostic possibilities would you consider for a six-year-old boy with constipation (at least three).

15. A 14-year-old adolescent female presents with a one day history of right lower quadrant pain and low grade fever.
 - a) What is the differential diagnosis?
 - b) Describe the classic course of appendicitis.
 - c) Demonstrate the physical examination.

16. A 16 year old boy collapses while playing basketball. His physical examination is normal.
 - a) What is the differential diagnosis?
 - b) What would you do?
 - c) How would you differentiate dangerous etiologies?

17. A 16 year old girl collapses in school. She was riding a crowded elevator at the time.

18. A 16 year old girl presents to the PER complaining of chest pain. Her physical examination is normal.
 - a) What is your differential?
 - b) How would you approach the possibility of this being a somatic manifestation of stress?

CC3 PEDIATRIC CORE CASES

- I. A three-year old boy has been vomiting for three days. His physical exam is notable for T 98.6°, RR 24, HR 140, BP 100/60 with a normal abdominal exam.
- A. List three Non-GI causes of his presentation.
 - B. List three historical factors that would help you decide on hydration status and three physical findings. Do any of the facts listed above point towards dehydration? If yes, which ones and why?
- II. A six-month-old boy is 10% dehydrated. His labs reveal a Na of 168.
- A. How would you replace his fluids?
 - B. How accurate are his clinical signs of dehydration?
 - C. How would you treat this patient if the sodium were normal?
- III. A 16-year-old girl presents DKA. Her PH is 7.10 and her glucose is 800.
- A. How would this affect her Na and K?
 - B. What values do you need to calculate osmolality?
 - C. Would you treat with Na H Co3?
- IV. A five-year-old boy is clinically dehydrated. His BUN and Creatine are elevated. His urination has decreased significantly.
- A. How would you differentiate renal and pre-renal disease?
- V. A three-day-old boy is yellow.
- A. What labs would you order?
 - B. What are three causes of indirect hyperbilirubemia?
 - C. What is the treatment for an indirect bilirubin of 19 in this infant?
- VI. A six-month old's weight is below the fifth percentile.
- A. List five organic causes of failure to thrive and diagnostic hints. (see page 122 of reference articles)
 - B. Please refer to page 123 of your references of other scenarios.
- VII. A teenage girl ingested an unknown amount of Tylenol three hours ago.
- A. When should you obtain an acetaminophen level?
 - B. What is the antidote?

- C. What is the role of a) ipecac b) lavage and c) charcoal in this case?
- VIII. A three-year old boy ingested a bottle of prenatal iron pills. He has been vomiting and having diarrhea since then.
- A. What other toxicities do you expect? What labs should you get?
 B. What is the role of charcoal in this case?
 C. What is the antidote?
- IX. A two-year-old girl has fever. The exam reveals a red tympanic membrane.
- A. Is this diagnostic of otitis media?
 B. How would you confirm the diagnosis?
 C. What are the organisms involved?
 D. What is the spontaneous cure rate of OM?
 E. Why are children more prone to ear infections?
 F. What is the difference between acute and chronic OM? How so you tell the difference?
- X. A two-year-old boy has been coughing for three weeks. It is worse at night.
- A. Could this be sinusitis?
 B. List two other things it could be.
 C. How would you treat it?
 D. What if the cough had been going on for three months, how would your differential change?
 E. What if it were a 2 week old who had paroxysms of cough?
 F. What if it were a Abarking≡ cough?
- XI. A 14-year-old girl presents with abdominal pain. She is accompanied by her mother. On the exam she is afebrile and has cervical tenderness.
- A. What is the difference between cervicitis and salpingitis?
 B. How would you treat the above?
 C. How would you obtain the history and do the exam (i.e., alone, with a chaperone, with mother?)
 D. What if the patient asks you not to tell her mother the diagnosis?
- XII. A 15-year-old girl presents with a three-day history of abnormal vaginal bleeding?

- A. List three possible diagnoses.
 - B. How would you make the diagnosis of DUB?
- XIII. A five-week-old infant boy felt warm at home. He has otherwise been well. His temperature is 100.9°?
- A. What would you do?
 - B. Would this be different for a two-year-old girl?
- XV. A two-year-old boy has been seizing for five minutes in the ER.
- A. How would you treat this? (List your interventions in sequence).
 - B. What is the significance of generalized versus focal seizures?
 - C. If the patient had fever, would you do an LP to rule out meningitis?
- XVI. A three month old boy presents with fever and irritability. He has a piercing cry.
- A. What physical findings would suggest meningitis?
 - B. What if there were no meningeal signs?
 - C. If pus came out of the LP needle how would you treat this patient? What are the organisms you would need to cover?
 - D. How would this differ for a one week old? A ten-year-old?
- XVII. A five-week-old infant is wheezing and is in respiratory distress.
- A. How would you treat this?
 - B. What if the patient was six years old?
 - C. How do you differentiate Asthma from other causes?
 - D. If the infant responded to treatment, would you send the infant home? Why or why not?
- XVIII. A three-year old girl has had seven episodes of pneumonia/asthma. She continues to break through her therapy despite excellent adherence. Her therapy consists of nebulized albuterol.
- A. What are the issues here? (Include diagnostic and therapeutic issues).
- XIX. A three year old boy presents to the PER in the morning with noisy breathing and fever. He has a barking cough. He is in severe respiratory distress.
- A. What is the most likely diagnosis?

- B. How could you treat this?
 - C. Could this patient have epiglottitis?
- XX. A three day old infant presents in shock.
- A. What are the possible causes?
 - B. How would you approach this?
- XXI. A newborn infant is blue at birth.
- A. What are some possible cases?
 - B. How would you approach this?
- XXII. A one year old boy has a Hgb of 7.
- A. What are the issues? (Diagnostic and therapeutic).
- XXIII. A three-year old boy has SS disease.
- A. What is the most likely threat to his life?
 - B. List the two most dangerous causes?
- XXIV. An eight-year-old boy with SS disease has back pain, chest pain, and abdominal pain.
- A. What are your concerns?
- XXVI. A three year old boy presents with a limp.
- A. What is your approach?
 - B. How would it be different if he had a fever?
- XXVII. A 13-year-old girl presents with a neck mass.
- A. What are the diagnostic considerations (at least three)?
 - B. What factors would be consistent with a malignancy? (At least three)
 - C. What labs are the best markers for rapid cell turnover?
 - D. What is the prognosis for a) Lymphoblastic Lymphoma and b) Hodgkin=s Disease?
 - E. How does the classic presentation of Hodgkin=s differ from non-Hodgkin=s Lymphoma? (See textbook).
- XXVIII. A two year old boy presents with petechiae.

- A. What are the diagnostic considerations (at least 2)?
- B. How would you differentiate ITP from ALL?
- C. What is the prognosis for ITP and ALL?

XXIX. A seven-year-old boy presents with “reddish urine.”

- A. What are the major diagnostic considerations? (at least three different mechanisms).
- B. List three complications of AGN.
- C. How would you treat each?
- D. What do you expect the C3 to be?
- E. What are the entities that produce a low C3?

XXX. A three year old boy presents with swelling of the eyes?

- A. How would you work this child up?
- B. If he had protein in his urine, what underlying disease would be most likely?
- C. How would a C3 be helpful?

XXXI. A seven-year-old boy has evidence of hemolytic anemia and decreased urination.

- A. What is the most likely problem?
- B. What type of hemolysis is occurring (i.e., would you expect a positive Comb’s test)?
- C. Would you expect the patient to have diarrhea? If they did, what organism would you be concerned about?

XXXII. A three-month-old boy is having diarrhea.

- A. How would you differentiate viral and bacterial G.E.?
- B. If it were bloody, what would your diagnostic considerations be? (At least three).

XXXIII. A six-year-old boy has a swollen tender knee. He is afebrile. He complains that his elbow was swollen and tender yesterday.

- A. What can cause a migratory arthritis? (At least three).
- B. What else would you look for on the physical exam?

XXXIV. A two-year-old girl has fever and refuses to bear weight on her left leg.

She refuses to internally rotate her left hip. X-rays of the entire leg including the hip are normal.

- A. What would you do next?
- B. If the CBC and ESR were normal (if you got them) how would you proceed?

XXXVI. A 13-year-old girl presents in DKA.

- A. What would you follow (that is make a flow sheet of this patient)?
- B. How would you expect her Na and K to be affected?
- C. How would you treat her if she complained of a headache on presentation? What if her headache started 8-12 hours into treatment?
- D. When would you consider treating with bicarbonate?
- E. What are the toxicities of bicarbonate treatment?
- F. What would you expect the anion gap to be?

XXXVII. A one year old boy presents with five days of fever, conjunctivitis, a rash and swelling of the hands and feet. He is noted to be irritable but consolable?

- A. What is his most likely diagnosis?
- B. What are the most important sequelae?
- C. How would you treat him?

XXXVIII. A three-year old boy has obvious varicella.

- A. How would you counsel the mother? What would you tell her to watch for (list at least four sequelae)?

XXXIX. A three-month-old boy fell out of his crib and sustained a femur fracture.

- A. How would you treat this child?
- B. How would you counsel the parents?

XXXX. A one year old presents with lethargy. He is afebrile and his exam is notable for mild tachycardia and normal pupils.

- A. What is your differential diagnosis and approach?

XXXXI. A three week old boy presents to the ER at 1:00 a.m. He has vomited all day long. His exam is completely normal.

- A. What is your differential (list three)?
- B. If the vomitus were green what would that signify and how would you proceed?

XXXXII. A three year old boy presents with purpura over the extensor surfaces of the legs and has abdominal pain.

- A. What is the most likely diagnosis?
- B. What labs would you get?
- C. What are the two most dangerous sequelae?

XXXXIII. A four month old boy has a holosystolic murmur heard best at the lower left sternal border?

- A. What are the considerations?
- B. How would you follow him if the echo showed a VSD? How would you decide if and when he needed surgery?

XXXXIV. A six week old boy vomited and turned blue. His mother felt that he stopped breathing. She started mouth to mouth -- and the baby came to. In the PER, the infant's exam is normal.

- A. What would you do?