

Antimicrobial Prophylaxis and Postoperative Fever

Reading:

- 1) Najar PA, Smink DS. Prophylactic Antibiotics and prevention of surgical site infections. Surg Clin N Am. 95 (2015): 269–283.
- 2) Weed HG, Baddour LM. Postoperative Fever. UpToDate.

Patient 1

A 46-year-old male is undergoing total knee arthroplasty. The patient has no past medical history. He was adequately evaluated prior to surgery and is considered to be at low risk.

Should this patient get prophylactic antibiotics? What and when?

What else, besides prophylactic antibiotics, can decrease the chance for a surgical site infection (SSI)?

What if this patient were allergic to penicillin?

Patient 2

A 30-year-old female is planned for elective hysterectomy.

What prophylactic antibiotics should she get?

How long should we continue prophylactic antibiotics?

Patient 3

An 83-year-old male with a history of a pacemaker is admitted with congestive heart failure. He is unable to get out of bed without becoming severely dyspneic. You begin appropriate testing and plan to give him intravenous boluses of diuretics. You also plan to insert a urinary catheter to monitor his urine output. A urinalysis has been obtained and is normal.

Does he need prophylactic antibiotics to prevent him from getting a pacemaker infection or endocarditis as you insert the urinary catheter?

Patient 4

A 31-year-old male with mitral valve prolapse and mitral regurgitation is going for a dental extraction.

Does he need antibiotics to prevent endocarditis? Which antibiotic, what dose, and when should he take it?

Patient 5

A 56-year-old male who underwent a total knee arthroplasty yesterday develops a fever to 100.4° F. You are asked to evaluate him. He has no past medical history except for osteoarthritis. He complains of mild pain at the surgical site. The surgical site is still dressed. There is mild swelling below the knee that was operated upon. The rest of his physical exam is normal. He is on appropriate deep venous thrombosis prophylaxis.

What is the most likely cause of this patient's fever?

What tests should be ordered?

Patient 6

A 69-year-old female with severe obesity and hypertension underwent ventral hernia repair. She is now 8 days out from surgery and has had fever as high as 100.7° F for the past 5 days. She has abdominal soreness and is having trouble getting out of bed. The surgeons continued her perioperative cefazolin because of her fever. She has been getting large doses of narcotic analgesics to treat her pain and she is a little sleepy when you come to see her. She also has a resolving postoperative ileus and her nasogastric tube was removed this morning. She continues to have a urinary catheter because of her trouble getting out of bed.

What are the potential infectious causes of her fever?

What are the potential non-infectious causes?

The surgical site is examined and there is no erythema, no breakdown, and no discharge. She has normal active bowel sounds and mild diffuse tenderness. She has poor inspiratory effort on lung exam. She has bilateral 2+ symmetric edema to her knees. There is no calf tenderness. She is dark-skinned but you can't appreciate any rash.

What tests should we order?

Patient 7

A 28-year-old male with sickle cell disease is undergoing elective cholecystectomy. You are called to the post anesthesia recovery unit as he developed a fever to 101.4° F while they were finishing the case. You review the anesthesia record. He was induced with fentanyl and versed. He had general anesthesia with isoflurane. No neuromuscular blocking agents were used. They transfused 2 units packed red blood cells during the procedure. He was given Cefazolin 1 gm intravenously, 15 minutes prior to incision.

What are the possible causes of his fever?