

Case Writing Exercise

Directions: Apply the information covered in the 2nd "Knowledge" presentation. Identify the positive aspects of this case. Also identify negatives.

Case 1: Modules 1-4

JM, a 56 year-old female, was admitted to your unit with a severe upper respiratory infection. She has been in the hospital multiple times over the last two years for infection-related conditions, such as pneumonia and untreated sinusitis. She is a widow who lives alone on a farm; however, she hires out for help to complete the daily chores.

JM has suffered from osteoarthritis for years; in addition, she was diagnosed with hypertension one year ago. Her osteoarthritis causes pain daily in her knee and wrist joints. JM has only tried aspirin for her pain. She tries to remain active walking around her farm and taking care of the animals. Once weekly, JM volunteers at the local senior citizen center and helps serve lunch.

Her current medications include:
aspirin 81mg daily
hydrochlorothiazide 12.5 mg daily

Upon entering the unit, she was immediately cultured to identify the infectious bug. JM was then diagnosed with pneumonia and immediately started on IV therapy, including cephalosporin and macrolide. At the end of the day, her cultures came back to the unit and revealed MRSA or methicillin-resistant *Staphylococcus aureus*.

Intervention/Assessment

1. Why was JM initially started on two antibiotics (i.e. IV cephalosporin and macrolide)? Why was IV therapy initiated, and not oral? (2 points)

An infection may be caused by multiple organisms and broad coverage is good if the causative agent is unknown.

Typically, IV therapy provides a faster response. Quick response is optimal in emergency or infectious situations

See p. 77-78; Obj.3,4,6

2. Based on the culture results, why would you expect JM's antibiotic regimen to change and what agent(s) will likely be used? (2 points)

MRSA is highly resistant to antibiotics such as penicillins, macrolides and cephalosporins. There are only a few agents that can treat MRSA, and these include vancomycin (Vancocin®), linezolid (Zyvox®) and Synercid®. Vancomycin may be used more often because it costs less. See Antibacterial handout, p. 76,84; Obj 2

After her treatment regimen concluded and she was stable, JM was released from the hospital to an assisted living center. She will remain there until her strength returns. She was instructed

to restart all of her previous medications, since they were stopped when she entered the hospital.

3. As mentioned earlier, JM has suffered from osteoarthritis for two years. Why is aspirin a less than optimal choice in the treatment of osteoarthritis? What would you recommend (include dose)? (2 points)

Aspirin is primarily used for inflammation. Generally, osteoarthritis does not have a significant inflammatory component. While aspirin is an agent she could use, it is not a first line treatment. In addition, her aspirin dose may be too low (i.e. 81 mg is usually only used for cardiovascular prevention). Since she is still having pain (i.e. pain is not controlled), it is appropriate to consider a change. The recommended first line agent is acetaminophen (Tylenol®) 1000 mg four times daily. COX2 inhibitor ok too. See Arthritis handout; Inflammation Obj 2

4. Compare and contrast the treatment of osteoarthritis and rheumatoid arthritis. How are the drug therapy goals similar? How are they different? (2 points)

Treatment for both conditions attempts to slow or reverse the disease. In osteoarthritis, drug therapy aims to relieve pain AND mild inflammation. In contrast, inflammation plays a bigger role in rheumatoid arthritis; anti-inflammatory drugs are used as first line treatment to decrease inflammation. Pain may also occur in RA; however, the pain is most likely from inflammation and relieving inflammation with anti-inflammatory agents is most helpful. See Arthritis handout; Inflammation Obj 4

Evaluation

As you review JM's chart, you notice she has not had her blood pressure checked in 6 months. When you see JM, you confirm that she is still taking 12.5 mg of hydrochlorothiazide daily. You take her blood pressure that day and at her next visit, two days later; her pressures are 119/79 mmHg and 127/86 mmHg, respectively.

5. How would you classify her readings using the JNC VII guidelines? Why are two readings insufficient? (2 points)

According to JNC VII, she is considered normal to pre-hypertensive. Her current dose of diuretic is controlling her blood pressure enough and she doesn't have compelling indications (e.g. diabetes) requiring stricter control. It is best to have multiple readings (e.g. three readings) above normal over 2-3 weeks. Blood pressure often varies from day to day or hour to hour.

See hypertension presentation and p. 572; Hypertension Obj 4

Objectives:

After completion of the case, review the following objectives to ensure that you have learned the concepts intended.

1. Describe how culture results guide antibiotic therapy
2. Recommend an optimal treatment regimen for osteoarthritis.
3. Compare and contrast treatment for osteoarthritis and rheumatoid arthritis
4. Describe the JNC VII guidelines and rationale for obtaining multiple blood pressure readings