

# T-47 minutes to Antibiotic Administration – Case 2

## Patient Case Study Transcript

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8:24 AM:

At 8:24, patient arrived in the emergency department. A 67-year-old male with history of arthritis and BPH presents to the emergency department, complaining of left hip pain. Patient has been following up with orthopedics for chronic bilateral hip arthritic pain and recently saw his orthopedist to discuss the possibility of total hip arthroplasty. He had an acute onset of his pain when he tried to get up from his recliner last night at 6:00 PM. He states he felt a pop in both of his hips. He was able to get up to use the restroom, take his nightly medications and return to the recliner. Afterwards, due to his severe pain, he was unable to get up out of his recliner and spent all night in his chair.

This morning, he called his sister who called for an ambulance. Patient notes that the pain in his hips is similar to but worse than his chronic arthritic pain. He endorses his pain is worse than his left hip, which is unusual for him. The pain radiates from his left lateral hip down to his knees. He denies any numbness, weakness, back pain, or loss of bowel or bladder control. Patient also reports that he experienced some chills last night. He began having nausea and vomited this morning, which he attributes is due to his pain. He denies any chest pain, shortness of breath, or cough.

8:29 AM:

At 8:29, initial vital signs were obtained. Temperature 37.8, blood pressure 114/59, pulse 122 BPM, respiratory rate 18, SpO2 98% on room air. Positive physical exam findings. Tachycardia and range of motion of left hip was limited due to pain.

9:13 AM:

At 9:13, CBC was resulted, which was significant for an elevated WBC at 22.6. Also, MDW came back and it was elevated at 30.1. The elevated WBC along with the elevated MDW suggested the possibility of sepsis. Considering the patient's clinical presentation and his tachycardia along with elevated temperature at 9:15, lactate and blood cultures were ordered. The provider then reevaluated the patient conducting a head-to-toe exam, which revealed significant erythema in the right lower extremity with warmth and tenderness to palpation. The diagnosis of cellulitis was made, and the antibiotics were ordered at 9:25. At 9:44, BMP was resulted, and it was normal. At 9:45, lactate was resulted, and it showed 5.7.

10:00 AM:

At 10:00, antibiotics were given.

At 9:13 CBC came back demonstrating WBC of 22.6, but also MDW of 30.1. The combination of an elevated WBC along with MDW cause a provider to consider sepsis on a patient that history suggested a musculoskeletal hip pain. This led the provider to reconsider the initial vital signs: temperature of 37.8°C and a heart rate of 122, which could suggest an underlying infection. Additional orders were placed, lactate and blood culture. A head to toe exam was performed, which revealed right lower extremity cellulitis. At this point, search criteria were met based on the patient's elevated WBC and heart rate. SIRS plus infection means that by

definition, the patient was septic. Broad spectrum antibiotics were ordered, and the sepsis care team was mobilized. POC lactate came back at 5.7, which was resulted at 9:45. Antibiotics were given at 10:00.

Therefore, an elevated MDW, which was resulted at 9:13, led the provider to consider sepsis and resulted in administering antibiotics at 10:00, 47 minutes after the time when MDW was resulted. The exact time of 9:45 when POC lactate came back at 5.7 marked time zero for septic shock. Recall that, sepsis plus lactate of greater than or equal to four is septic shock. Based on this timeline, the antibiotics were given 15 minutes after a time zero. Recall that Surviving Sepsis Campaign's goal is to administer broad spectrum antibiotics within one hour of time zero. CMS is more lenient at three hours.

In case two, we see that the elevated MDW led the provider to identify sepsis, which resulted in administering broad spectrum antibiotics within 15 minutes of time zero.

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