

Quality Improvement Activity: Peripheral IV Septic Phlebitis

On March 25, 2019, a 65-year-old male with a history of DVT, smoking, and obesity, is admitted to the Emergency Department with shortness of breath, a hoarse cough, and extreme fatigue. While simultaneously initiating oxygen, IV fluids, and a broad-spectrum antibiotic, multiple tests are conducted on him. His test results return, and he is diagnosed with COVID and pneumonia. The Emergency Department is experiencing an overwhelming amount of admissions and transports him to the ICU for further treatment. The patients assigned nurse starts another peripheral IV after the initial IV site placed in the ED starts bleeding. She inserts this new IV rapidly without using antiseptic to clean the area. After restarting the broad-spectrum antibiotic, she does a quick full head to toe assessment on him and notices the patient grabbing his IV site. He complains of being in pain as he holds the site and states “I feel so lightheaded.” Upon closer assessment, the nurse notices the skin is warm, tender, red, and inflamed around the skin where the IV was placed. She didn’t find the IV site issue to be too serious based on the complications with his work of breathing. She completely dismisses this issue after she sees that his oxygen saturation is dropping, and his respirations are increasing simultaneously. After having to intubate him to control his breathing, a few hours pass and its time to start another antibiotic. As she restarts the new antibiotic, she notices his skin is still red and inflamed. The nurse has five seriously critical patients to attend to so she tells herself she will come back and restart another IV on him after she finishes passing medications to her other patients. She forgets to do this and sits down to chart. She looks at this patient’s new labs results which indicates that his WBC’s have increased from 12,000 at admission to 15,000 presently, and it reminds her to go start a new IV. When she walks back in the room with supplies to start a new IV, she notices that his blood pressure is extremely low at 59/32, heart rate at 140, and decides to take his temperature which is elevated, as well. She calls for help as she realizes he is experiencing sepsis symptoms.

Describe the scenario. In what way did the patient care or environment lack? Is this a common occurrence?

In this scenario, the patient’s health was already compromised due to having COVID and pneumonia. After having multiple failed IV insertions without proper sterile technique, he was put at risk for a worsening infection. The patient care was lacking during the times the nurse noticed the IV site needed an attention and didn’t make it a priority in care due to other more immediate complications. The nurse had multiple opportunities to make this situation right but failed to correct it or take appropriate actions to prevent the IV phlebitis from worsening. It’s a common occurrence to overlook details in situations where you identify a life-threatening emergency. For example, this nurse identified the breathing issue as life-threatening and more important than the IV phlebitis, which is appropriate. However, she should have stopped the IV antibiotic as quickly as possible and worked to replace the site once the breathing was controlled. Overall, when faced with multiple critical patients who all need serious care, it is easy to let something go and forget about. But it is our job to provide safe patient care by doing sterile procedures, having time management, and listening to patient concerns. By doing so we ensure the best quality care and best patient outcomes.

What circumstances led to the occurrence?

The circumstances that led directly to this occurrence was the nurse who was too busy to slow down and consider what the patient was saying. She was moving to rapidly and did not perform aseptic technique when restarting a new IV. She also ignored the patients complaints and did not take the signs of infection seriously when she first noticed them, leading to a worsening infection.

In what way could you measure the frequency of the occurrence?(interviewing nurses, examining charts, patient surveys, observations, etc.)

The frequency of the occurrence can be measured by interviewing nurses, reviewing incident reports, examining charts, patient surveys, and observation. Research shows that IV phlebitis occurs in up to 70% of all patients receiving intravenous therapy. Interviewing nurses about the care they provided and observing them perform sterile technique while initiating an IV access is critical to preventing IV phlebitis. Minimizing a patient's risk of developing phlebitis and early identification and treatment of the condition when it does occur will improve patient outcomes tremendously.

What ideas do you have for implementing interventions to address the problem?

To address the symptoms of phlebitis we will need to:

- Stop the infusion immediately.
- Remove the IV catheter which is the focus of the infection.
- Notify the healthcare provider.
- Use a central line or larger vein to infuse antibiotics.
- If a blood clot has formed, we will need to consider anticoagulation and thrombolysis.

To address the patients sepsis symptoms and prevent septic shock, we will need to:

- Rapid restoration of perfusion
 - Aggressive administration of IVF at 30mL/kg
 - Fluid started by one hour and completed within three hours
 - Crystalloid solutions (normal saline, Ringer's lactate)
 - Albumin solutions (protein that holds fluids in)
- Early administration of antibiotics
 - Draw blood cultures before starting antibiotics
 - Broad-spectrum antibiotics given until blood cultures return

How will you measure the efficacy of the interventions?

To measure the efficacy of the interventions performed, we can look at the patients labs and vital signs.

We will want to see these therapeutic responses:

- WBC drop in number meaning there is no longer a presence of infection
- MAP greater than 65 mmHg
- Urine output greater than 0.5mL/kg per hour
- CVP of 8-12 mmHg
- Lactate less than 2 mmol/L

We will take his temperature to note if his fever has come down and ask the patient if he is still experiencing any pain at the site or anywhere else.