

Sepsis Protocols

Abigail Simmons

Brigham Young University – Idaho

NURS 422

Sarah Hiebert

October 25, 2021

Introduction to Sepsis Protocol – The Role of the Nurse

The nurse's role in sepsis care is special. The nurse acts as eyes and ears for the healthcare team. In preventing and treating sepsis in hospitalized patients, the nurse must change his or her priorities to address this deadly concern. Appropriate assessment for signs and symptoms of shock leads to prompt initiation of interventions. First, the nurse should utilize protocols during assessments to identify signs of sepsis. Then, continual blood cultures and tests should be implemented to track trends and execute treatments if necessary. If sepsis is developing or advancing in the patient, the nurse can begin resuscitation measures or lead the sepsis-response teams. If the nurse takes initiative in preventing and treating sepsis in his or her patients, mortality can be reduced, along with the ICU length of stay and readmission rates (Kleinpell et al, 2019).

Nursing Interventions

Frequent Monitoring

Sepsis care starts with early identification and prompt treatment. There are several interventions that involves the nurse identifying manifestations of sepsis. While creating the patient's plan of care, the nurse should implement sepsis screening. In addition, the nurse needs to monitor vital signs for any abnormalities. Such deviances include elevated heart rate, hypotension, increased respiratory rate, or elevated temperature (Kleinpell et al, 2019)

Blood Tests and Cultures

According to the Surviving Sepsis Campaign (SSC), the nurse should obtain two sets of cultures: aerobic and anaerobic (Kleinpell et al, 2019). By taking this action, the nurse will be able to administer antibiotic therapy promptly, especially if the nurse had been tracking and trending the patient's cultures.

Through assessing labs, the nurse can identify potential problems associated with sepsis. Hyperlactemia is a common finding among critical patients. Lactate is considered a reliable marker of illness severity and mortality. In fact, the mortality rate of patients in the ICU with hyperlactemia is 78.2% (Kushimoto et al, 2016).

Antibiotic Therapy

Through monitoring white blood cell counts and taking cultures, the nurse can administer antibiotic therapy if indicated. The SSC guidelines suggests that antibiotic therapy should be initiated one hour after recognition of sepsis, whether shock is present or not. If sepsis is possible, the nurse should still administer antibiotics within 1 hour of recognition only when shock is present. If shock is absent in the patient with possible sepsis, then the nurse needs to complete a rapid assessment of infectious versus noninfectious causes of acute illness. Immediately after, the nurse needs to plan to administer antibiotics within 3 hours if the concern for infection is persistent (SSC, 2021).

Fluid Resuscitation

Nurses are highly recommended to hemodynamically monitor their patients' vital signs and implement focused assessments to treat hypoperfusion. One of the first signs that blood flow

is not perfusing well is an altered mental status. Other assessment findings include decreasing urine output and sluggish capillary refill time (CRT) (Kleinpell et al, 2019).

The nurse's responsibility is to first start one or two large-bore (14-16 gauge) intravenous catheters (Harding et al, 2020). Then, the nurse needs to initiate aggressive fluid resuscitation of up to 30 mL/kg of intravenous crystalloids within the first 3 hours of these potential findings of sepsis. The nurse should aim for mean arterial pressure (MAP) of 65 mmHg in patients requiring vasopressors (Kleinpell et al, 2019). It is recommended that the nurse inserts an indwelling Foley catheter into the patient to monitor for adequate kidney perfusion as fluid resuscitation occurs (Harding et al, 2020).

Vasoactive Therapy

The SSC recommends norepinephrine as a first-line vasopressor. For patients with septic shock and are on vasopressor therapy, the target mean arterial pressure is 65 mmHg. Because of this objective, it is wise for the nurse to implement hemodynamic monitoring to ensure valid assessments of the patient's blood pressure. If there is not a central access available, the nurse should plan on administering vasopressors peripherally, however, this is not the preferred method. When the nurse monitors hemodynamically and discovers that the norepinephrine is not adequately increasing MAP, the nurse should consider adding vasopressin to increase that value. If the cardiac dysfunction is still persisting, with continuing signs of hypoperfusion, the nurse should plan on adding dobutamine or switching to epinephrine to ensure that the MAP increases (SSC, 2021).

Nutritional Therapy

It is important that all organs are being perfused during resuscitation, including the bowels. Because of hypermetabolism and lactic acid buildup, it is imperative that the patient receives adequate nutrition to promote healing. This is preferably achieved enterally and within the first 24 hours of possible sepsis. To track progress, the nurse should weigh the patient daily. The nurse should also be trending serum protein, albumin, total protein, serum electrolytes, and serum glucose for effectiveness and evaluation (Harding et al, 2020).

Patient and Family Education

Infection Prevention

It would be wise for the nurse to educate about vaccinations to prevent viral infections. When someone receives a vaccine, the immune system could become familiar with the virus without actually contracting it, so that immunity is built up (Sepsis Alliance, 2021).

Another way to prevent an infection is to properly care for wounds, if a patient has any. The skin is the first line of defense, so impairing that could allow bacteria to cause an infection, which can lead to sepsis if left untreated. When cleaning wounds, nurses must be consistent with hand hygiene and wearing gloves. If patient's family is around, instruct them to hand hygiene before they come in contact with their loved one (Sepsis Alliance, 2021).

Patient Goals and Outcomes

Family Involvement

Part of improving patient outcomes in critical care units is for the nurse to promote awareness of sepsis in patients and their families. Such promotions include setting goals of care,

discussing, and evaluating those goals with families (Kleinpell et al 2019). Teaching early signs of infection can reduce the mortality of sepsis drastically. Some of these signs includes

Sepsis Bundle Adherence

The nurse is expected to refer to the Surviving Sepsis Campaign for their sepsis bundles. These bundles include antibiotic therapy and vasoactive management (SSC, 2021). Appropriate interventions include obtaining lactate measurements, blood cultures, and delivering a broad-spectrum antibiotic within 3 hours of sepsis onset for individuals with severe sepsis. Additionally, patients with septic shock require intravenous fluids within 3 hours of onset, vasopressors within 5 hours, and repeat volume assessments within 6 hours (Lasater et al, 2021).

Conclusion

Nurses play a vital role in sepsis protocols in that they must use their critical thinking to establish and even modify their priority problems if that means saving a patient's life. If sepsis is probable, it is vital for the nurse to monitor and assess their patients. Timing interventions correctly can help to reduce the mortality from sepsis.

References

1. Harding, M. M., Kwong, J., Roberts, D., Hagler, D., & Reinisch, C. (2020). In Lewis's Medical-Surgical Nursing Assessment and Management of Clinical Problems (11th ed., pp. 1574–1577). Elsevier.
2. Kleinpell, R., Blot, S., Boulanger, C., Fulbrook, P., Blackwood, B. (2019). International Critical Care Nursing Considerations and quality indicators for the 2017 surviving sepsis campaign guidelines. *Intensive Care Medicine*, 45(11), 1663–1666.
<https://doi.org/10.1007/s00134-019-05780-1>
3. Kushimoto, S., Akaishi, S., Sato, T., Nomura, R., Fujita, M., Kudo, D., Kawazoe, Y., Yoshida, Y., Miyagawa, N. (2016). Lactate, a useful marker for disease mortality and severity but an unreliable marker of tissue hypoxia/hypoperfusion in critically ill patients. *Acute Medicine & Surgery*, 3(4), 293–297.
<https://doi.org/10.1002/ams2.207>

4. Lasater, K. B., Sloane, D. M., McHugh, M. D., Cimiotti, J. P., Riman, K. A., Martin, B., Alexander, M., Aiken, L. H. (2021). Evaluation of hospital nurse-to-patient staffing ratios and sepsis bundles on patient outcomes. *American Journal of Infection Control*, 49(7), 868–873. <https://doi.org/10.1016/j.ajic.2020.12.002>
5. Prevention. Sepsis Alliance. (2021, September 1). Retrieved October 24, 2021, from <https://www.sepsis.org/sepsis-basics/prevention/>.
6. Vasoactive agent management - sccm.org. (2021). Retrieved October 24, 2021, from https://www.sccm.org/getattachment/SurvivingSepsisCampaign/Guidelines/Adult-Patients/Surviving-Sepsis-Campaign-2021-Guidelines-Infographic_Vasoactive-Agent.pdf?lang=en-US.