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Symposium
Introduction

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Trauma Update

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Trauma is the third leading cause of death in the United States and the foremost cause in those aged 1 through 44 years.[1,2] Nearly 70% of injury-related deaths are attributed to unintentional injury (eg, motor vehicle crashes or falls), 20% are the result of suicide, 8% are from homicides, and 2% are from undetermined intent.[3] Regardless of the cause, severe trauma that impacts 1 or numerous organ systems can trigger many pathologic changes such as malperfusion, hypoxia, inflammation, fluid and electrolyte shifts, coagulopathy, and acid-base imbalances. The articles in this symposium series provide updates in 5 key areas of trauma patient care to assist advanced practice nurses and others in treating injured patients.

Trauma care begins with efforts to prevent injury. However, once injury occurs, timely and effective initial interventions and resuscitation are required to enable survival. Resuscitation typically extends into the critical care setting. Those who care for trauma patients appreciate that beyond initial resuscitation, achieving the best outcomes for victims of trauma depends on optimal care throughout operative procedures, hospitalization in critical care, intermediate and acute care, and if needed, rehabilitation. This symposium focuses on providing updates on essential aspects of evidence-based care recommended for trauma patients in critical care and intermediate care settings.

Over the past several decades, civilian and military-led research has discovered more effective ways to save lives and enhance outcomes of those injured. These advancements in trauma care include new strategies to assess and monitor critically ill trauma patients and novel interventions and pharmacologic agents to treat injury. Advanced practice nurses and other nurses providing care to the injured are challenged with remaining up to date on the expanding evidence driving practice change in the dynamic field of trauma care.

Traumatic brain injury (TBI) is a major cause of trauma-related deaths, and patients who survive hospitalization are often plagued with cognitive, motor, sensory, and emotional impairments.[4] Therapeutic interventions currently remain focused on preventing detrimental secondary TBI that can evolve when conditions such as hypoxia, hypotension, hypoglycemia or hyperglycemia, hypocapnea or hypercapnea, or intracranial hypertension exacerbate intracellular pathologic cascades in neurons exposed to injury. In this series, Scarboro and McQuillan provide a review of current and prospective monitoring strategies and interventions for acute TBI.

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Hemorrhage constitutes a leading cause of potentially preventable deaths following trauma.[5] Onset of trauma-induced coagulopathy can exacerbate hemorrhage. Knowledge about the pathophysiology of trauma-induced coagulopathy serves as the basis for understanding the strategies used to evaluate coagulation and the therapeutics used to achieve hemostasis. Thurman uses a case study approach to share this essential knowledge and promote critical thinking among readers.

Damage control resuscitation attempts to rectify physiologic imbalances and stabilize the patient in critical care between the initial damage control surgery, which seeks to quickly stop hemorrhage and minimize contamination, and subsequent operative interventions to obtain definitive repair of injuries. Damage control resuscitation, currently recommended for actively bleeding patients with major trauma, has been shown to improve patient outcomes.[6] While trauma patients are in the intensive care unit, the advanced practice nurse and other nurses work in collaboration with the rest of the health care team to provide damage control resuscitation, monitor end points of resuscitation, and institute a multitude of interventions to prevent, promptly recognize, and treat onset of multisystem complications. Gaasch's article in this symposium series discusses damage control resuscitation and management of potential complications that can occur in the critical care phase of treating trauma patients.

Trauma care is affected not only by scientific discoveries but also by current trends in society. Mass casualty incidents have occurred due to natural disasters, but recent incidences of domestic terrorism and the current coronavirus 2019 pandemic have heightened awareness of the role trauma centers play in mass casualty incidents. Gallagher and Adamski explain the pivotal role critical care resources play in providing an optimal response to mass casualty incidents.

Likewise, the opioid epidemic, which has ravaged the United States, has drawn increased attention to how pain can be best managed in patients hospitalized with trauma. Use of a multimodal approach to pain management that incorporates nonopioid pharmacologic agents and, when appropriate, complementary therapies in addition to opioids may help to optimize pain control and minimize use and potential adverse effects of opioids. Fortune and Frawley explore the timely topic of optimizing pain control using a multimodal approach that considers nonopioid therapies.

Caring for trauma patients is challenging. Increasing nurses' understanding of recommended best practices can improve care and foster optimal outcomes for injured patients. I hope the knowledge gained by using the resources in this issue will enhance the care provided by advanced practice nurses and others so that the best possible outcomes can be achieved for trauma patients in high acuity settings.

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