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Crit Care Clin 24 (2008) 875–887

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Posttraumatic Stress Disorder Following Critical Illness

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Posttraumatic stress disorder (PTSD) is a common psychiatric condition that can occur after a traumatic event. PTSD is the fourth most common psychiatric illness in the United States with estimates of lifetime prevalence ranging from 5% to 6% in men to 10% to 14% in women [1]. Traumatic events can provoke fear, helplessness, or horror in response to an event that threatens life or safety [1]. Prevalence estimates for adults who are at risk for PTSD range from 2% to 15% after combat in Vietnam to 14% to 80% after rape [2]. In addition to PTSD, individuals exposed to traumatic events also are at risk for other psychologic morbidity, such as depression, panic disorder, generalized anxiety disorder, and substance abuse. The burden of PTSD can be high and can result in an inability to work or return to prior levels of functioning. Therefore, PTSD results in an increased cost to society because of increased health care costs and decreased productivity.

The criteria for PTSD are defined by the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*) [3]: a person must have been exposed to a traumatic event, which involves a perceived or actual threat to the person's own life or physical integrity or that of another person. The condition is characterized by a constellation of symptoms in three domains: (1) symptoms of re-experiencing, (2) symptoms of avoidance and emotional numbing, and (3) symptoms of increased arousal. These symptoms must meet two criteria to satisfy the diagnosis: (1) symptoms must cause significant impairment in social, occupational, or other important

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0749-0704/08/$ - see front matter
doi:10.1016/j.ccc.2008.06.002 *criticalcare.theclinics.com*

functional domains and (2) symptoms must be present for a least 1 month after exposure to the traumatic event or events.

ICU treatment for critical illness exposes patients and their families to enormous stress. This stress results from the experience of life-threatening illness and the need for intensive, and often invasive, medical procedures. Survivors of critical illness often report memories of pain and anxiety during their ICU stay [4]. Therefore, the trauma of a critical illness and ICU treatment meets the criteria of a traumatic event as stated by the *DSM-IV* criteria of PTSD. A similar experience applies to family members of critically ill patients, as the *DSM-IV* definition allows for a traumatic, life-threatening event to be witnessed rather than personally experienced. Family members of ICU patients may be at risk for PTSD as ICUs are a foreign and often frightening environment for many family members. Family members may be exposed to invasive monitoring for their loved ones and unfamiliar medical procedures and devices. In addition, family members often are asked to assume the role of surrogate decision maker, because the majority of patients in ICUs are not able to participate in decisions about withholding or withdrawing life support. The role of being a surrogate decision maker seems to be associated with additional stress for some family members [5]. Therefore, three groups are considered that are at risk for PTSD after ICU treatment. First, there are patients who survive a critical illness and are discharged after ICU care. Second, there are family members of individuals who survive critical illness. Finally, there are family members of individuals who die during or shortly after their ICU stay. This article reviews the body of literature regarding adult ICU patients and their families for prevalence of PTSD after critical illness in these three groups and identifies risk factors for the development of PTSD and suggestions for clinical implications and further research in this field.

Survivors of critical illness

The bulk of the literature investigating PTSD after critical illness has examined survivors of critical illness. Two systematic reviews of the topic recently have been published; the first looked at PTSD in 16 studies of medical ICU patients [2] and the second looked at survivors of all intensive care treatment [6]. For this review, only studies that evaluated the association between medical ICU admission and PTSD (or posttraumatic stress symptoms) are included, similar to the review by Jackson and colleagues [2]. In that review, studies were required to use quantitative or objective measures of PTSD. Studies of patients in surgical or trauma ICUs were excluded because of concern that the surgery or trauma itself may have elicited PTSD symptoms rather than the ICU experience. Five of these studies were prospective cohort studies [7–11] and one was a randomized controlled trial [12]. The remainder of the studies included six retrospective cohort studies [13–18] and four cross-sectional studies [19–22]. Since this review was