

Post intensive care syndrome. A review of a condition in need of attention

Abstract

Post-intensive care syndrome is a clinical entity that includes three pathologies, which until some time ago were addressed individually in the patient who survived the Intensive Care Unit (ICU): depression, anxiety and post-traumatic stress. With the advancement and improvement of care in the ICU, there are more and more survivors of critical care, so the appearance of this syndrome has become more and more frequent.

Methodology: A review of the literature has been carried out in the PubMed database, in addition to search engines such as Clinical Key, Science direct and Springer link, making an analysis and providing conclusions based on the scientific evidence found.

Conclusions: The first step to manage this syndrome is to know it, address it and be aware that its appearance has an impact on mortality, morbidity and clinical evolution of the patient who survives intensive care. Make the health professional aware that the physical and systemic impact is relevant, but also the impact on mental health.

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Introduction

The admission of a patient to the Intensive Care Unit (ICU) seeks to return the patient to the previous state of health or to the state of health expected for a person of the same age and with the same clinical condition. In recent years, it has been described that the stay and treatment in the ICU has an impact on physical and psychological problems, influencing quality of life.¹ In recent years, care in the ICU has experienced growth, with greater patient survival, which has given rise to a growing population of survivors who experience complications related to their stay in the unit. The interest in studying the complications of patients discharged from the ICU has defined the clinical entity known as post-intensive care syndrome (PICS).²

Psychiatric condition following ICU stay is often disabling and can have major effects on recovery after critical illness and is associated with lower quality of life for both patients and their families. Mental health disorders described in the PICS include depression, anxiety, and post-traumatic stress disorder.³ The purpose of this article is to review current literature in PubMed and search engines such as Clinical Key, Scienedirect, and Springer link to provide the reader with information on this little-known entity.

Background

Patients admitted to the Intensive Care Unit (ICU) who are in critical condition require life support treatment, technological support and continuous monitoring, as well as emotional support.⁴ Adhikari in 2011 refers that a stay in the ICU can be distressing and exhausting for patients.⁵ The environment surrounding the ICU is highly complex and can cause patients to deal with multiple stressors, such as coping with their own mortality, unfamiliar noises, invasive procedures, pain, sedation, delirium, and inability to speak.⁶

Memories are defined as the ability of the mind to capture information and retrieve it at a later time.⁷ Short-term memory refers to information processed in a limited period of time, while long-term memory allows us to store information for long periods, including information that can be retrieved consciously or unconsciously, so a memory is the mark that an experience has left in our mind, although it must be understood that the memory has been molded in our mind and can be influenced and changed.⁸

In the mid-to-late 2000s, several skeptical groups of researchers simultaneously reviewed what was known about PTSD after critical illness. Although it was clear that much remained to be learned, all of these skeptical groups concluded that the phenomenon of post-traumatic stress syndrome was, in fact, a real potential problem after critical illness.⁹

Patients requiring ICU care are at increased risk of developing psychiatric disorders and constitute a subset of critically ill patients who are expected to have a lower quality of life. SPCI was defined at a 2010 consensus meeting as a syndrome involving 1) physical impairment 2) cognitive impairment and 3) mental health impairment in ICU survivors. Each of these elements has previously been described as a unique and sometimes unavoidable complication of intensive care. In 2015, an important Spanish politician commented on a highly-rated television program about her experience as an ICU patient, showing her gratitude to the staff. However, it is striking that his memories are “feelings of pain and fear”; in addition, to mention the following “UCI is the branch of hell and the people who have been there know it”.¹⁰

Every year millions of people return to society and the recognition of the consequences for long-term survivors and their families is a growing concern. Over the past 2 decades, research has revealed how extraordinarily common and devastating long-term sequelae can be, and how much some patients and their families suffer.¹¹ These consequences in patients are called post-intensive care syndrome and in families post-intensive care-familial syndrome (PICS-F).¹²

Depression, anxiety and post-traumatic stress disorder are the main diseases that make up the PICS. Each illness separately presents as depression in approximately 30% of survivors, anxiety in 70%, and post-traumatic stress disorder characterized by intrusive memories arising from a combination of actual events after discharge from the ICU in 10- 50%.¹³ The appearance of symptoms in the hospital increases the risk of psychiatric sequelae after discharge; this impact is measured in increased disability time, health care costs, mortality rates, and potentially avoidable readmission. Despite previous beliefs that the critically ill do not remember ICU events, objective data show a significant amount of undesirable memories in survivors, affecting up to 88% of survivors.²

Post-traumatic stress syndrome in the critically ill patient

Post-traumatic stress syndrome originally described in war veterans has been described in different populations such as victims or witnesses of domestic or sexual abuse, cancer patients, relatives or caregivers of disabled patients, determining that it can occur after a real or perceived event that threatens life or safety. Symptoms of this pathology include depressed cognition and mood; abnormal arousal, re-experiencing of events including so-called flashbacks and/or intrusive thoughts or memories.¹⁴ The prevalence of post-traumatic stress disorder in ICU patients is between 10% and 39%, and the persistence of symptoms can be found up to 14 years after discharge.¹⁵

Memory and memories in the critical patient

In 2021, Maartmann-Moe C, et al.⁴ carried out a systematic review of the memories of intensive care patients. In this review, 16 studies from different parts of the world such as Sweden, Australia, Norway, the United States, Denmark, New Zealand and the United Kingdom with 216 patients were included. In most studies, patients described having surreal memories, which many described as the clearest and most frightening. The stay in the ICU was remembered as a time of confusion and disorientation where they did not know where they were. Patients described being in a constant state of confusion, not knowing if they were awake or asleep and unable to separate day and night, leading to a chaotic state of mind, unable to clearly differentiate between memories of the ICU, their dreams and nightmares.¹⁶

Within this systematic review, some interesting experiences are compiled for the present study. Guttormson 2014 reported that the patients had several memories that covered a wide range of dreams including trips, sick people and peculiar people who were out of the ordinary, which did not necessarily cause fear, referring to these dreams being perceived as real emphasizing the degree of confusion and disorientation of patients.¹⁷ Roberts and Chaboyer¹⁸ in their study reported that patients dreamed that family members represented the hospital staff. In addition, there were patients who recalled comforting or inspiring dreams with relatives or divine figures.¹⁹

Most of the dreams recalled by the patients were nightmares, in which they reported being locked up or immobilized trying to escape, nightmares involving the death of the patient himself or that the nurses tried to harm or kill them. A persistent memory, represented in all the studies, was that of disturbing hallucinations and delusions such as insects and animals in the room or things appearing through the walls.^{20,21} In most articles, patients described memories of the care they received in the ICU. They remembered the nurses around them performing procedures on them and their fellow patients; referring to reminding nurses to evoke feelings of safety and protection.²² Others described feelings of being alone and that the patients did not have time for them.²³ In addition, in some studies, patients report having memories of nurses discussing private matters while taking care of them.²⁴ Other memories that patients refer to disturbances in the environment describing it as a constant chaos of sound, light and flow of people. In addition, they remembered listening to the suffering of other patients and seeing how procedures are performed on other patients; They even describe vivid memories of unpleasant procedures, describing them as horrible.²⁵

In 2006, Badia-Castelló¹ carried out a prospective study in 169 ICU patients, the objective of which was to examine the memory of the patients one year after being discharged from the ICU and the influence of the intensive treatment received, as well as to evaluate

the incidence of post-traumatic stress and its relationship with the different types of memory. In 35 patients the 2 types of memories were associated. The most frequent objective memories expressed were memories of the family (63.4%), of faces (53.7%) and of nasal or oral tube (32.1%). 19.5% of the patients reported having suffered pain and 18.3% anxiety.

Risk factors

Experiencing high levels of physical and psychological stress in the ICU results in cognitive impairment and the development of PICS. Cognitive impairment includes impairment of memory, executive function, language, attention, and visuospatial skills. Physiological variables such as hypoglycemia, hyperglycemia, delirium, and symptoms of acute stress have been identified as risk factors for cognitive decline after critical illness.¹³ Other risk factors that can be mentioned are characteristics and intensity of the injury, the care received, length of stay in the ICU, duration of mechanical ventilation. Post-traumatic stress onset after injury reduces the likelihood of returning to pre-injury function and independence. There are genetic factors that could influence the genesis of post-traumatic stress syndrome, such as the polymorphism of the adenylate cyclase activator gene in the pituitary (ADCYAP1R1), with much research remaining in the future to be able to establish this relationship. Figure 1 shows the different factors that favor the appearance of the syndrome.²

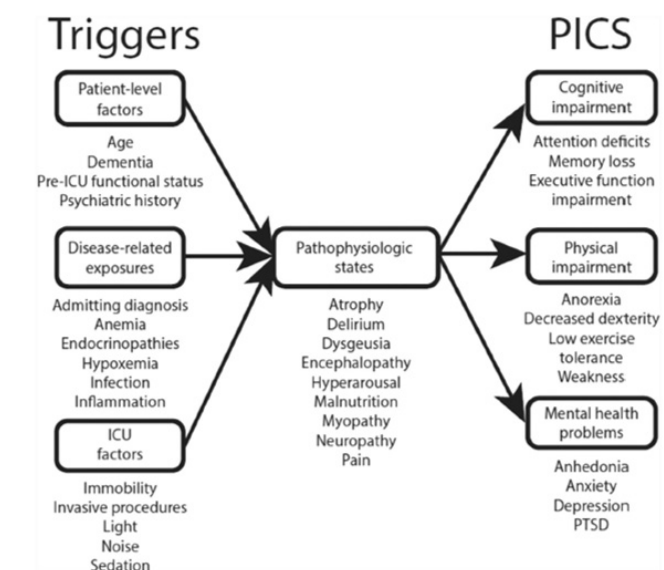


Figure 1 PICS Pathophysiologic.²

Approach and management

There are strategies to reduce the incidence and severity of PICS, however it is a reality that most interventions are provided once acute care is completed. One of the strategies is the ABCDE package traditionally used to reduce delirium in the ICU and which has recently been extended to an ABCDEFGH package to reduce the development of PICS²; This package provides care strategies which can be seen in Figure 2.

Various strategies have been proposed to manage this syndrome, all of them are an opportunity for the field of research in the Intensive Care Unit with the aim of providing early recognition and management and not just treating clinical manifestations in isolation. Table 1 lists some of the strategies to prevent the appearance of PICS.

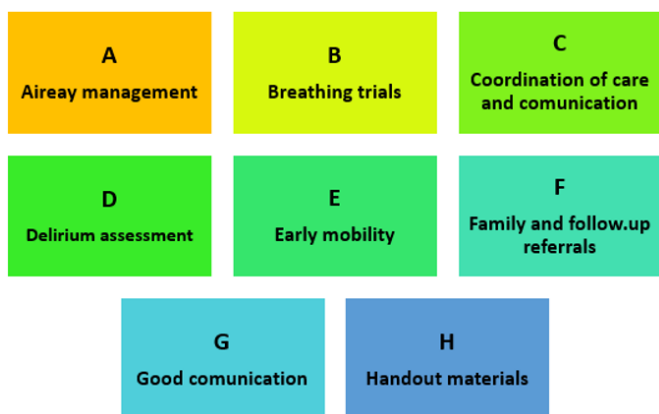


Figure 2 ABCDEFGH Bundle.

Table 1 Strategies to reduce the occurrence of PICS.¹¹

Reduction of risk factors for PICS
Early mobility programs
Postdischarge follow-up programs
Early psychologic intervention
ICU diaries
Healing environments of care
ABCDEFGH bundle
Nutrition: protein intake to promote muscle synthesis and cover catabolic debt

Conclusion

The interventions within the Intensive Care Unit are focused on providing advanced life support interventions to save the life of the patient in life-threatening conditions, however, the increase in survivors of this life support has exposed health complications mental health experienced by survivors. The first step in managing any medical condition is to know it, identify risk factors and exacerbating factors for the condition, and implement management strategies to prevent its onset. PICS, despite being a condition described a decade ago, is not always taken into account as a standard of care; however, the evidence shows us that the impact on evolution is greater than we imagined. Putting into practice recommendations such as the ABCDEFGH package, family participation, better environments for the patient, and adequate nutrition will make the ICU more humane and with better results, not only at an organic physiological level, but also in the mental health of patients.

Gratitude

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Conflicts of interest

The authors declare no conflicts of interest.

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