ICU Delirium:
Unavoidable and transient, or iatrogenic and with long lasting consequences?
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Key Points

1. Delirium is common in ICU patients – most have a hypoactive form of delirium which may not be obvious.
2. The incidence of delirium can be reduced with judicious sedative use, mobilization protocols, and possibly with emphasis on better sleep in the ICU.
3. Survivors of critical illness face emotional, cognitive and physical challenges. In particular, cognitive decline is correlated with development and duration of ICU delirium.
4. Post-ICU clinics may have a role in ameliorating some of the effects of ICU delirium.
5. All providers should have a high index of suspicion for Post-Intensive Care Syndrome and track and refer high-risk patients.

Since their introduction in the 1950s, Intensive Care Units (ICUs) have saved millions of lives, and mortality for a variety of illnesses is decreasing. However, this success has been tempered by “ICU delirium” - a syndrome of inattention, fluctuating level of consciousness and disorganized thinking that occurs in up to 50% of ICU patients (1). Given that over 55,000 patients are treated in US ICUs each day (with increases expected given the aging of the US population), ICU delirium is an important problem.

ICU delirium – preventable?
Traditionally, development of ICU delirium has been thought to reflect either severity of illness, or poor cognitive reserve. While these are certainly important risk factors, some ICU delirium begins even as other organ dysfunction is improving or resolved – suggesting that severity of illness alone is not the only explanation. Moreover, several recent studies have suggested that interventions can reduce delirium rates. These interventions include avoidance of continuous benzodiazepine infusions (2) for sedation, an early exercise and mobility program (3), and possibly an emphasis on allowing adequate time and conditions for sleep (4). Coupled with few data that suggest successful treatment of delirium, emphasis is now placed on ICU delirium prevention.

Long-term consequences of delirium and the ICU
Development of delirium is also important because it is associated with worse short-term (increased morbidity, mortality, and increased length of stay) and long-term outcomes,
including cognitive dysfunction and reduced quality of life in ICU survivors. An emerging literature is focused on survivors of critical illness and the Post-Intensive Care Syndrome (PICS). Features of the syndrome include: weakness and functional disability lasting years; psychological consequences including anxiety, depression and post-traumatic stress disorder (PTSD); and neurocognitive impairment. For example, almost half of all ARDS survivors have neurocognitive impairment 1 year after discharge, and in one quarter these deficits will persist six years after illness. These impairments include deficits in attention, memory and executive function and duration of delirium is independently associated with the degree of cognitive dysfunction (5). We now realize that for survivors of critical illness, alive is not the same as alive and well.

What can be done?
First, adequate screening for ICU delirium is necessary to understand the magnitude of the problem. Physicians and staff routinely under-diagnose delirium, particularly patients with hypoactive delirium. The Confusion Assessment Method for the Intensive Care Unit (CAM-ICU), a bedside screening tool, is quick and easy to perform, even in patients on mechanical ventilation. Second, recognition of the high prevalence of delirium should lead to state of the art practices that can reduce incident delirium, as above. Finally, critical care physicians (in addition to psychiatry, physiatry, physical therapy, pharmacy and others) should consider starting and staffing ICU recovery clinics. Such clinics (as we recently started at UC San Diego) are designed to identify symptoms of PICS early through a series of validated screening tools. Patients who screen positive for any one element of PICS can then be counseled, monitored, and referred/treated as needed. These clinics also perform a variety of other services targeted at optimizing recovery and improving quality of life after the ICU. If necessary, patients are asked to follow-up in the clinic until they are sufficiently treated or deemed no longer at risk for PICS.

How can outpatient providers help?
For those physicians who don’t have the benefit of referring patients to a nearby ICU recovery clinic, the key when evaluating ICU survivors and their family members is to keep PICS and other effects of delirium on the differential, especially when assessing barriers to recovery. If the patient feels they have hit a plateau during the recovery process that cannot otherwise be explained, the physician should strive to find out why – this may be a sign of PICS. Any physician can help identify patients and family members at high risk for PICS just by posing a few questions regarding general mood, anxiety, and the development of stressful or traumatic memories after the ICU stay. Asking if new obstacles or stresses have arisen since hospital discharge may also enable patients and families to report psychologic, cognitive, physical, or other unexpected deficits.

If PICS is suspected, first reassure the patient and/or family member (as PICS can also affect families and caregivers) that emotional, physical, or cognitive issues are commonly encountered in survivors of critical illness, and many such issues improve with time alone.
It is also important to identify the specific deficit(s), track the patient’s progress with close follow-up, and refer as needed if the patient is not improving as expected.

Referral options include psychiatry, psychology, neuropsychology (for cognitive deficits), and physical therapy (for physical ailments). For patients in Southern California or those willing to travel, the newly established UC San Diego ICU Recovery Program is also accepting referrals. The ICU Recovery Program, started in July 2015, is comprised of the multidisciplinary ICU Recovery Clinic and the Critical Illness Survivor Support Group – both of which are open to patients and families/caregivers.

Available resources for providers, patients, and family members:
www.icudelirium.org
www.myicucare.org/Adult-Support/Pages/Post-intensive-Care-Syndrome.aspx

For more information regarding the UC San Diego ICU Recovery Program:
- Patients and providers may contact Dr. Bates or Dr. Owens at: posticu@ucsd.edu

References:

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