A-E Assessment of Post-ICU COVID-19 Recovery

The COVID-19 pandemic has caused significant strain on healthcare and critical care services worldwide. While most resources have focused on acutely ill patients, the burden of patients who have been chronically affected by COVID-19 will remain.

From what we know of COVID-19 so far, a significant number of patients show symptoms that last more than eight weeks. Hence, several of these patients will suffer from post-intensive care syndrome (PICS) and require follow-up assessment, diagnosis and treatment.

In this review, the authors propose an A to E approach while considering the long-term effects of COVID-19 following admission to the ICU. This approach is based on addressing the following:

Anxiety and other mental health diagnoses: Anxiety, depression and PTSD are frequently seen in patients following ICU admission. As per data from pre-pandemic studies, 35-45% of patients met diagnostic criteria for anxiety 12 months after discharge, and 18% met diagnostic criteria for all three diagnoses. Primary risk factors for developing mental health issues following ICU admission include long-term mechanical ventilation and delirium. COVID-19 patients, in particular, require long periods of mechanical ventilation and sedation. They are also predisposed to high rates of delirium and subsequent mental health disorders. Social isolation can also take its toll. There are also reports that the SARS-CoV-2 virus has a direct neurological effect. A study from Wuhan reports high rates of neurological outcomes in patients with severe COVID-19. Hence, patients should be followed-up for screening for mental health disorders during the post-critical care period.

Breathlessness: This is another common issue observed in COVID-19 patients, along with reduced exercise tolerance and impaired pulmonary function. Anaemia, respiratory muscle dysfunction, reconditioning, pulmonary embolism, and anxiety could contribute to post-critical care breathlessness. Pulmonary rehabilitation can help increase functional capacity and reduce symptoms. During social distancing, virtual PR has also shown promise, and remote assessments with a 6-min walk test using a mobile application and home pulse oximetry can also be used.

Central nervous system impairment: Another common symptom of COVDI-19 is impairment of central nervous system and chemosensory disturbance. Olfactory dysfunction and taste dysfunction was found in 38.5% and 30.4% of COVID-19 patients. Olfactory training can also be completed remotely and has shown to be effective for sensorineural olfactory loss.

Dietary insufficiency and malnutrition: There has been significant debate regarding nasogastric tube insertion in COVID-19 critically ill patients. There have also been challenges of enteral feeding in proned patients. Many patients with severe COVID-19 have required a prolonged length of stay in the ICU. These patients are at a higher risk of malnutrition and subsequent complications. A nutritional plan with regular assessment and progressive physical exercise can help facilitate recovery and improve patient quality of life.

Embolic events: Embolic and thrombotic events have been prevalent in COVID-19 patients. The disease can cause profound hypercoagulability, complement activation and cytokine storm, which can lead to embolic events in the arterial and venous systems. Long periods of immobility, staffing constraints and social isolation can further increase the risk of clots. Early therapeutic anticoagulation can help and risk stratification for further thrombosis, and haemorrhagic risk and longer treatment or empirical anticoagulation can be considered.

Overall, the authors propose that strategies to mitigate these issues during admission and follow-up, assessment and treatment of persistent multiple organ dysfunction are important to improve morbidity, mortality and patient quality of life.