

## Management of Adult Acute and Acute-on-Chronic Liver Failure in the ICU



Both acute liver failure (ALF) and acute on chronic liver failure (ACLF) are associated with high morbidity and mortality. Even today, medical treatment of these two disorders has limited benefits and for those who fail to respond, the only viable treatment is a liver transplant. Both ALF and ACLF rarely occur in isolation and in most cases there is multiple organ involvement. As with many critical disorders, early diagnosis and management are vital to improve patient outcomes.

A new review evaluates the current evidence-based recommendations to guide clinicians who look after ALF and ACLF. It is important to note that these recommendations are not meant to replace clinical judgment but act as supplements to currently available therapies.

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The experts defined ACLF as a syndrome characterised by acute decompensation of cirrhosis, organ dysfunction, and high short-term mortality. ALF is defined by the occurrence of encephalopathy and liver synthetic dysfunction within 26 weeks of the first symptoms of liver disease in a patient without evidence of chronic liver disease.

The current recommendations were developed by experts in the care of patients with liver failure. The standard operating procedures manual established by the Society of Critical Care were followed. The panel discussed each of the organ systems that are involved in ALF and ACLF including cardiovascular, haematology, pulmonary, renal, endocrine and nutrition, gastrointestinal, infection, perioperative, and neurology.

The committee made several recommendations on the management of ALF and ACLF. Some of these recommendations include:

- For resuscitation, one should use gelatin solutions, especially albumin; HETASStarch should be avoided.
- The mean arterial pressure target should be 65 mmHg in patients with ALF and ACLF as this results in adequate perfusion of body organs.
- An arterial catheter should be placed to monitor blood pressure as it allows for quick decisions on treatment. Further, a clinical assessment of haemodynamics should be done with a pulmonary catheter or a central line.
- If there is a need to use a vasopressor, the first choice should be epinephrine. It may be combined with low dose vasopressin.
- Thromboelastography is recommended over the measurement of INR, platelets, and fibrinogen as it allows real-time functional evaluation of the liver.
- If the haemoglobin is less than 7g/dl, transfusion should be considered.
- To prevent DVT and pulmonary emboli, LMWH should be used.
- For ventilated patients, a low tidal volume strategy is recommended. At the same time, high PEEP should be avoided in patients with ALF.
- Patients with hepatic hydrothorax should have tube thoracostomy when TIPS is not an option. Patients with hepatorenal syndrome may benefit from the use of vasopressors.
- The serum blood glucose should be maintained between 110-180 mg/dl and in patients with septic shock, a stress dose of glucocorticoid is recommended, especially if the patient is found to have adrenal insufficiency.
- Patients with ALF or ACLF should not be fed a low-protein diet but instead one should set targeted protein goals. Enteral nutrition is recommended over parenteral nutrition.

Overall, 29 recommendations have been made on the management of ALF or ACLF in the ICU. A rigorous methodological approach was used to issue these recommendations and provide a reference for clinicians.

Source: [Critical Care Medicine](#)

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Published on : Tue, 3 Mar 2020