



# REVISTA DE GASTROENTEROLOGÍA DE MÉXICO

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## EDITORIAL

### Hospital mortality in cirrhotic patients at a tertiary care center in Latin America<sup>☆,☆☆</sup>



### Mortalidad hospitalaria en pacientes cirróticos en un centro de tercer nivel de Latinoamérica

Cirrhosis of the liver continues to be a frequent cause of mortality worldwide, and is the twelfth cause of death in North America.<sup>1</sup> However, establishing prognosis in patients with cirrhosis of the liver is still a clinical challenge, due to its great variability and its dependence on many factors, such as etiology, liver function status, the presence and severity of portal hypertension, the possibility of treatment, and the potential development of hepatocellular carcinoma.<sup>2</sup>

From a practical viewpoint, we know that patients with decompensated cirrhosis have a worse outcome (median 2-year survival), compared with patients with compensated disease (median 9 to 12-year survival).<sup>3</sup> The conventional Child-Pugh<sup>4</sup> or MELD score<sup>5</sup> scales are also available to us and aid in establishing prognosis and prioritizing liver transplantation patients.

Nevertheless, when patients with cirrhosis of the liver are hospitalized, mortality increases significantly, ranging from 44 to 74%.<sup>6</sup> This variability is determined more by the degree of organ failure than by the severity of the liver disease. There are several models for predicting mortality in patients with acute-on-chronic liver failure (ACLF). The Chronic Liver Failure in Cirrhosis (CANONIC) study developed one such model. It is a prospective and multicenter study conducted by the European Consortium for the Study of Chronic Liver Failure (CLIF). Its aims were to develop a clinical definition for ACLF and establish a model for evaluating the short-term risk of mortality in those patients.<sup>7</sup> The

CLIF model has better predictive values for mortality than the classic MELD and MELD-Na models.<sup>8</sup>

A study conducted in Barcelona, Spain, evaluated 12,671 hospital admissions of patients with cirrhosis of the liver within the time frame of 2003 to 2010. The study showed there was an overall hospital mortality rate in patients with ACLF of 11.6%<sup>9</sup> and a 27% decrease in hospital mortality during the period of 2006-2010, compared with the period of 2003-2005. The authors concluded that there has been a significantly reduced hospital mortality rate in recent years.<sup>9</sup> That reduction appears to be due to earlier detection of cirrhosis through noninvasive diagnostic methods and improved management of the associated complications. The study also demonstrated that the most frequent cause of mortality was hepatorenal syndrome, followed by spontaneous bacterial peritonitis, hepatic encephalopathy, and pneumonia. Another significant risk factor for mortality was admission to the intensive care unit.<sup>9</sup>

A similar study from the United Kingdom<sup>10</sup> showed that mortality at 30 days in patients with cirrhosis and organ failure, in accordance with the modified Sepsis Organ Failure Assessment (SOFA), was significantly higher compared with patients without organ failure (58 vs 8%). In addition, the progression of organ failure was associated with advanced liver disease and systemic inflammation. Mortality at 3 years was practically universal in the patients that recovered from organ failure.<sup>10</sup>

There are few studies conducted in Latin America that evaluate mortality in patients with cirrhosis, underlining the importance of this issue of the *Revista de Gastroenterología de México*. The article by Zubieta-Rodríguez et al.<sup>11</sup> determined the mortality rate and clinical characteristics of patients with ACLF at a tertiary care hospital in Bucaramanga, Santander, Colombia. The authors evaluated ACLF detected within the time frame of March 2015 and February 2016 and included a total of 81 patients. Alcoholism was the main etiology of cirrhosis of the liver and hospital

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mortality was 24%. Sepsis, at 68% (30% from urinary tract infection), was the main cause of mortality, followed by hypovolemic shock in 11%, hepatocellular carcinoma in 11%, and acute kidney failure in 5%. The results of the study by Zubieta-Rodríguez et al.<sup>11</sup> are similar to those reported in studies conducted in Peru and Ecuador.<sup>12,13</sup> However, they differ from the results of studies carried out in North America and Europe, in which hepatorenal syndrome was the main cause of mortality.

Likewise, the study by Zubieta-Rodríguez et al.<sup>11</sup> identified variables independently related to in-hospital mortality, such as a MELD score  $\geq 18$  (OR 7.4,  $p < 0.05$ ), albumin value  $< 2.5$  g/dl (OR 6.7,  $p < 0.05$ ), and leukocyte count  $> 12 \times 10^9$ /l. (OR 11.6,  $p < 0.05$ ). Their study results are similar to those of previous reports in which patients with ACLF with a MELD score  $\geq 18$  and/or a high CLIF-C score (with organ failure) have a significantly greater mortality rate.

The work by Zubieta-Rodríguez et al.<sup>11</sup> emphasizes the importance of studies conducted on different populations, because the causes of mortality and the risk factors associated with worse outcomes are heterogeneous. Their study should stimulate the elaboration of studies in other Latin American countries that aim to more objectively determine the risk factors for mortality and to implement strategies for reducing morbidity and mortality in patients with cirrhosis of the liver.

## Conflict of interest

The authors declare that there is no conflict of interest.

## References

- Albillos A, Rossi I, Iborra J, et al. Octreotide prevents postprandial splanchnic hyperemia in patients with portal hypertension. *J Hepatol.* 1994;21:88–94.
- Durand F, Valla D. Assessment of prognosis of cirrhosis. *Semin Liver Dis.* 2008;28:110–22.
- D'Amico G, Garcia-Tsao G, Pagliaro L. Natural history and prognostic indicators of survival in cirrhosis: A systematic review of 118 studies. *J Hepatol.* 2006;44:217–31.
- Pugh RN, Murray-Lyon IM, Dawson JL, et al. Transection of the oesophagus for bleeding oesophageal varices. *Br J Surg.* 1973;60:646–9.
- Malinchoc M, Kamath PS, Gordon FD, et al. A model to predict poor survival in patients undergoing transjugular intrahepatic portosystemic shunts. *Hepatology.* 2000;31:864–71.
- Cholongitas E, Senzolo M, Patch D, et al. Risk factors, sequential organ failure assessment and model for end-stage liver disease scores for predicting short term mortality in cirrhotic patients admitted to intensive care unit. *Aliment Pharmacol Ther.* 2006;23:883–93.
- Moreau R, Jalan R, Gines P, et al. Acute-on-chronic liver failure is a distinct syndrome that develops in patients with acute decompensation of cirrhosis. *Gastroenterology.* 2013;144, 1426–U189.
- Jalan R, Saliba F, Pavesi M, et al. Development and validation of a prognostic score to predict mortality in patients with acute-on-chronic liver failure. *J Hepatol.* 2014;61:1038–47.
- Vergara M, Cleries M, Vela E, et al. Hospital mortality over time in patients with specific complications of cirrhosis. *Liver International.* 2013;33:828–33.
- Jalan R, Stadlbauer V, Sen S, et al. Role of predisposition, injury, response and organ failure in the prognosis of patients with acute-on-chronic liver failure: A prospective cohort study. *Crit Care.* 2012;16:R227.
- Zubieta-Rodríguez R, Gómez-Correa J, Rodríguez-Amaya R, et al. Hospital mortality in cirrhotic patients at a tertiary care center. *Rev Gastroenterol Mex.* 2017;82:203–9.
- Malpica-Castillo A, Ticse R, Salazar-Quinones M, et al. [Mortality and readmission in hospitalized cirrhotic patients in a General Hospital from Lima, Peru]. *Rev Gastroenterol Peru.* 2013;33:301–5.
- Abarca-Ruiz JPV, Garcés C, Rodríguez P. Etiología, complicaciones y mortalidad en cirrosis hepática, hospital «Carlos Andrade Marín»; evaluación retrospectiva de 15 años, 1989–2003. *Revista Oficial de la Facultad de Ciencias Médicas Ecuador.* 2005;11:294–8.

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