Gastroenterol Hepatol. 2017;40(4):276–285

Gastroenterología y Hepatología

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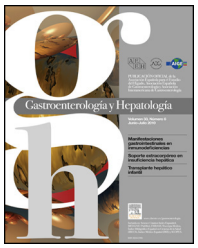

ORIGINAL ARTICLE

Comparison of the prognostic value of Chronic Liver Failure Consortium scores and traditional models for predicting mortality in patients with cirrhosis

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Received 2 September 2016; accepted 5 January 2017

KEYWORDS
Liver cirrhosis;
Mortality;
Survival;
Prognosis

Abstract
Background and aim: Recently, the European Association for the Study of the Liver – Chronic Liver Failure (CLIF) Consortium defined two new prognostic scores, according to the presence or absence of acute-on-chronic liver failure (ACLF): the CLIF Consortium ACLF score (CLIF-C ACLFs) and the CLIF-C Acute Decompensation score (CLIF-C ADs). We sought to compare their accuracy in predicting 30- and 90-day mortality with some of the existing models: Child-Turcotte-Pugh (CTP), Model for End-Stage Liver Disease (MELD), MELD-Na, integrated MELD (iMELD), MELD to serum sodium ratio index (MESO), Refit MELD and Refit MELD-Na.
Methods: Retrospective cohort study that evaluated all admissions due to decompensated cirrhosis in 2 centers between 2011 and 2014. At admission each score was assessed, and the discrimination ability was compared by measuring the area under the ROC curve (AUROC).
Results: A total of 779 hospitalizations were evaluated. Two hundred and twenty-two patients met criteria for ACLF (25.9%). The 30- and 90-day mortality were respectively 17.7 and 37.3%.

CLIF-C ACLFs presented an AUROC for predicting 30- and 90-day mortality of 0.684 (95% CI: 0.599–0.770) and 0.666 (95% CI: 0.588–0.744) respectively. No statistically significant differences were found when compared to traditional models. For patients without ACLF, CLIF-C ADs had an AUROC for predicting 30- and 90-day mortality of 0.689 (95% CI: 0.614–0.763) and 0.672 (95% CI: 0.624–0.720) respectively. When compared to other scores, it was only statistically superior to MELD for predicting 30-day mortality ($p = 0.0296$).

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Conclusions: The new CLIF-C scores were not statistically superior to the traditional models, with the exception of CLIF-C ADs for predicting 30-day mortality.
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PALABRAS CLAVE
Cirrosis hepática;
Mortalidad;
Sobrevida;
Pronóstico

Comparación del valor pronóstico de los modelos del Chronic Liver Failure Consortium y modelos tradicionales para predecir la mortalidad en pacientes con cirrosis

Resumen
Antecedente y objetivos: Recientemente The European Association for the Study of the Liver-Chronic Liver Failure Consortium estableció 2 nuevos sistemas pronósticos considerando la existencia o no de Acute-on-chronic liver failure (ACLF): el score CLIF Consortium ACLF (CLIF-C ACLF) y el CLIF-C Acute Descompensation score (CLIF-C ADs). Pretendimos comparar su fiabilidad para predecir la mortalidad a los 30 y 90 días con la de algunos de los sistemas de puntuación existentes: Child-Turcotte-Pugh, Model for End-Stage Liver Disease (MELD), MELD-Na, integrated MELD, MELD to serum sodium ratio index, Refit MELD y Refit MELD-Na.
Métodos: Estudio retrospectivo de cohortes incluyendo todos los pacientes con cirrosis ingresados en 2 centros entre 2011 y 2014 por descompensación de su enfermedad. En el momento de la admisión cada puntación fue calculada y fueron comparadas las áreas bajo la curva ROC (AUROC) para evaluar su capacidad de discriminación respecto a la mortalidad a los 30 y 90 días.
Resultados: Fueron analizadas un total de 779 hospitalizaciones. Doscientos y veintidós pacientes cumplían criterios para ACLF (25,9%). La mortalidad a los 30 y 90 días fue de 17,7% y 37,3% respectivamente.
En los pacientes con ACLF el AUROC del CLIF-C ACLF para predecir la mortalidad a los 30 y 90 días fue 0,684 (IC 95%: 0,599-0,770) y 0,666 (IC 95%: 0,588-0,744) respectivamente. No se encontraron diferencias significativas con los modelos tradicionales. En los pacientes sin ACLF, el AUROC del CLIF-C ADs para predecir la mortalidad a los 30 y 90 días fue 0,689 (IC 95%: 0,614-0,763) y 0,672 (IC 95%: 0,624-0,720) respectivamente. Únicamente fue estadísticamente superior al MELD para predecir la mortalidad a los 30 días (p = 0,0296).
Conclusiones: Los nuevos modelos CLIF-C no fueron superiores estadísticamente a los modelos tradicionales, con la excepción del CLIF-C ADs en la predicción de la mortalidad a los 30 días.
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Introduction

Cirrhosis is the late stage of hepatic fibrosis and it is characterized by the distortion of the hepatic architecture and formation of regenerative nodules. It accounts for approximately 170,000 deaths per year in Europe.[1] Patients with cirrhosis are susceptible to a variety of complications (ascites, spontaneous bacterial peritonitis, hepatic encephalopathy, hepatocellular carcinoma, hepatorenal and hepatopulmonary syndrome). When those complications appear, patients are considered to have decompensated cirrhosis and have a worse prognosis than those with compensated cirrhosis.[2]

The early use of stratification is essential as part of the initial evaluation of cirrhosis, as it provides objective information to the physician, allowing a useful guide to allocate patients according to their needs and prognosis.

Multiple studies were conducted in order to develop prognostic models for patients with cirrhosis, based on clinical and laboratory data. The two traditional used models are the Child-Turcotte-Pugh (CTP) classification and Model for End-Stage Liver Disease (MELD).[3–5] The CTP score has many limitations, namely because of its reliance on subjective interpretation of qualitative parameters and the empirical choice of its variables.[6] MELD has also been criticized for several reasons: for instance, different laboratorial methodologies to detect creatinine serum levels cause marked variations in this score, not allowing accurate comparison of scores between different centers; also, the fact that the international normalized ratio (INR) may not reflect the severity of liver disease (alterations in INR may reflect iatrogenic interventions or inherent disease state, not necessarily the severity of cirrhosis).[7,8] Several attempts to improve the predictive accuracy of MELD were made, by adding clinical or laboratory parameters, as well as optimizing the equation by multivariate analysis, which resulted in new models like MELD-Na,[9–12] MELD to serum sodium ratio index (MESO),[13] integrated MELD (iMELD),[14] Refit MELD, and Refit MELD-Na.[15]

Recently, from the Chronic Liver Failure (CLIF) Acute-on-Chronic Liver Failure in Cirrhosis (CANONIC) study,[16] two new

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