Research Article

# Carvedilol reduces the risk of decompensation and mortality in patients with compensated cirrhosis in a competing-risk meta-analysis

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Carvedilol-IPD-MA-group and the Baveno Cooperation: an EASL Consortium

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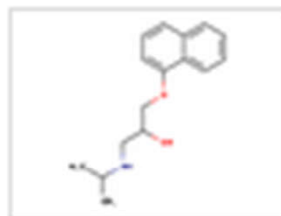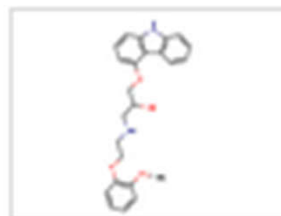
Results

Among 125 full-text studies evaluated, 4 RCTs were eligible. The 4 provided IPD and were included, comprising 352 patients with compensated cirrhosis, 181 treated with carvedilol and 171 controls (79 received EVL and 92 placebo). Baseline characteristics were similar between groups. Standardized differences were <10% by IPTW. The risk of developing decompensation of cirrhosis was lower with carvedilol than in controls (subdistribution hazard ratio [SHR] 0.506; 95% CI 0.289-0.887; p= 0.017; I^2= 0.0%, Q-statistic-p= 0.880), mainly due to a reduced risk of ascites (SHR 0.491; 95% CI 0.247-0.974; p= 0.042; I^2= 0.0%, Q-statistic-p= 0.384). The risk of death was also lower with carvedilol (SHR 0.417; 95% CI 0.194-0.896; p= 0.025; I^2= 0.0%, Q-statistic-p= 0.989).

Conclusions

Long-term carvedilol therapy reduced decompensation of cirrhosis and significantly improved survival in compensated patients with CSPH. This suggests that screening patients with compensated cirrhosis for CSPH to enable the prompt initiation of carvedilol could improve outcomes.

PROSPERO registration number

CRD42019144786.

Lay summary

The transition from compensated cirrhosis to decompensated cirrhosis is associated with markedly reduced life expectancy. Therefore, preventing decompensation in patients with compensated cirrhosis would be associated with greatly improved patient outcomes. There has been controversy regarding the use of non-selective β-blockers (portal pressure-lowering medications) in patients with cirrhosis and elevated portal blood pressure (portal hypertension). Herein, using a competing-risk meta-analysis to optimize sample size and properly investigate cirrhosis as a multistate disease and outcomes as time-dependent events, we show that carvedilol (a non-selective β-blocker) is associated with a reduced risk of decompensating events and improved survival in

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NEWS RELEASE 25-OCT-2023

People with severe mental illness at 50 per cent higher risk of death following COVID-19 infection

Peer-Reviewed Publication

KING'S COLLEGE LONDON

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More on this News Release

New research from King's College London has found that in the UK people with severe mental illness were at increased risk of death from all causes following COVID-19 infection compared to those without severe mental illness.

Published in the *British Journal of Psychiatry*, the study investigated the extent to which having severe mental illness, which includes schizophrenia and psychosis, increased the risk of death during the first two waves of the COVID-19 pandemic.

Researchers at the Institute of Psychiatry, Psychology & Neuroscience (IoPPN) and ESRC Centre for Society and Mental Health analysed data from over 660,000 UK patients between February 2020 and April 2021.

Among the 7146 people with severe mental illness, there was a 50 per cent greater risk of death from all causes following COVID-19 infection compared with those without severe mental illness.

Black Caribbean/Black African people were at a 22 per cent higher risk of death following COVID-19 infection than White people, and this was similar for people with and without severe mental illness. However, in around 30 per cent of patient data, ethnicity was not recorded.

The study revealed regional differences: on average, risk of death following COVID-19 infection was higher among Northern UK regions compared to Southern regions. Those in Northern Ireland, the East Midlands and the North-East were at between 24 – 28 per cent increased risk of death compared to those in London.

Dr Alex Dregan, senior author and Senior Lecturer in psychiatric epidemiology at King's IoPPN said: "We are the first group to use the Clinical Practice Research Datalink to understand the

People with severe mental illness at 50 per cent higher risk of death following COVID-19 infection

KING'S COLLEGE LONDON

KEYWORDS

COVID 19   MENTAL HEALTH   LIFE SCIENCES
INEQUALITIES   ETHNICITY   SCHIZOPHRENIA
PSYCHOSIS   DATA ANALYSIS   MORBIDITY

perspectives on using hepatocellular carcinoma
models to inform surveillance decisions

Nahon[4,5,6]

Summary

More than 50,000 people are diagnosed with hepatocellular carcinoma (HCC) every year in Europe. Many cases are known to specialist liver centres years before they present with HCC. Despite this, HCC is usually detected at a late stage, when prognosis is very poor. For more than two decades, clinical guidelines have recommended uniform surveillance for all patients with cirrhosis. However, studies continue to show that this broad-based approach is inefficient and poorly implemented in practice. A "personalised" approach, where the surveillance regimen is customised to the needs of the patient, is gaining growing support in the clinical community. The cornerstone of personalised surveillance is the HCC risk model – a mathematical equation predicting a patient's individualised probability of developing HCC within a specific time window. However, although numerous risk models have now been published, few are being used in routine care to inform HCC surveillance decisions. In this article, we discuss methodological issues stymieing the use of HCC risk models in routine practice - highlighting biases, evidence gaps and misconceptions that future research must address.
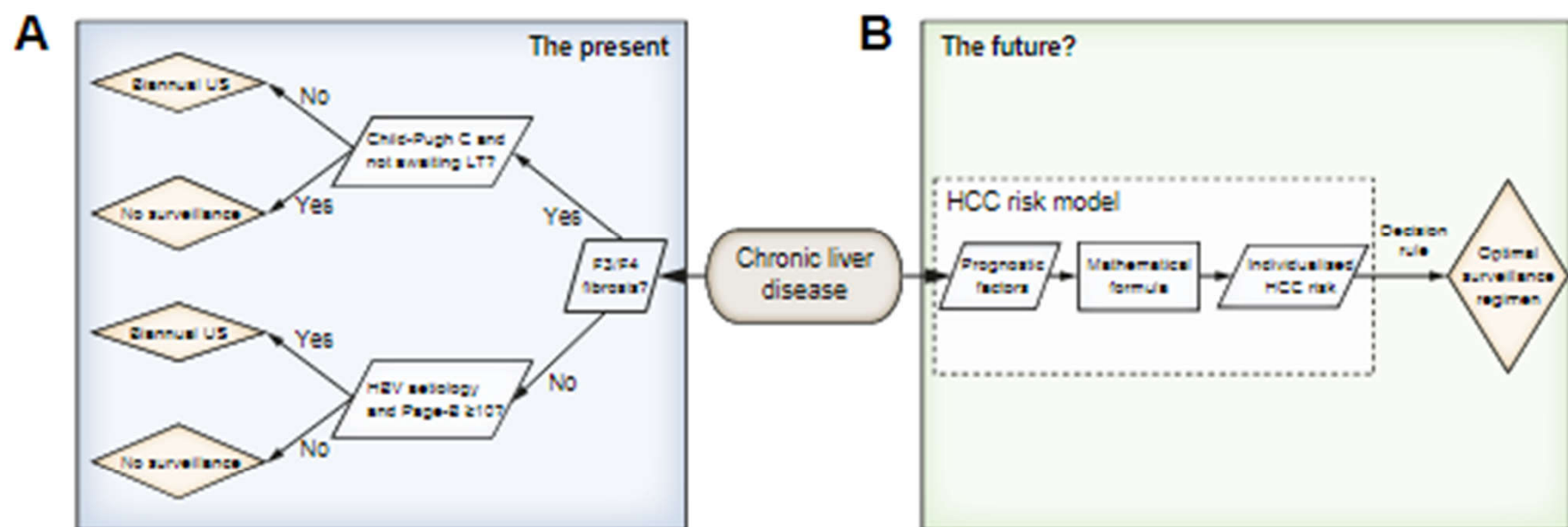
Fig. 1. Current and future approaches to HCC surveillance. Currently, surveillance decisions recommended in guidelines are centred on fibrosis stage (A), even though this is difficult to measure and is just one of many risk factors influencing HCC risk. As new surveillance modalities emerge beyond ultrasound, an alternative approach will be to base screening decisions directly on individualised HCC risk (B). However, despite growing support, there are several methodological challenges with this approach which are not widely recognised and are not being addressed. HCC, hepatocellular carcinoma; LT, liver transplantation; US, ultrasound.

Conclusions

The rise of the HCC risk model represents a major step towards personalising HCC surveillance. At the same time, our article draws attention to factors that will hinder their implementation in routine practice. Many of these challenges are statistical issues as much as clinical ones and they tend to be under-recognised or misunderstood by the liver community. Box 1 lists recommendations for future research; by channelling our efforts strategically into these areas today, we will be better placed to harness the opportunities of personalised surveillance tomorrow.

Optical Coherence Tomography–Guided versus Angiography-Guided PCI

Ziad A. Ali, M.D., D.Phil., Ulf Landmesser, M.D., Akiko Maehara, M.D., Mitsuaki Matsumura, B.S., Richard A. Shlofmitz, M.D., Giulio Guagliumi, M.D., Matthew J. Price, M.D., Jonathan M. Hill, M.D., Takashi Akasaka, M.D., Francesco Prati, M.D., Hiram G. Bezerra, M.D., William Wijns, M.D., Ph.D., et al., for the ILUMIEN IV Investigators*

RESULTS The trial was conducted at 80 sites in 18 countries. A total of 2487 patients underwent randomization: 1233 patients were assigned to undergo OCT-guided PCI, and 1254 to undergo angiography-guided PCI. The minimum stent area after PCI was 5.72±2.04 mm^2 in the OCT group and 5.36±1.87 mm^2 in the angiography group (mean difference, 0.36 mm^2; 95% confidence interval [CI], 0.21 to 0.51; P<0.001). Target-vessel failure within 2 years occurred in 88 patients in the OCT group and in 99 patients in the angiography group (Kaplan–Meier estimates, 7.4% and 8.2%, respectively; hazard ratio, 0.90; 95% CI, 0.67 to 1.19; P=0.45). OCT-related adverse events occurred in 1 patient in the OCT group and in 2 patients in the angiography group. Stent thrombosis within 2 years occurred in 6 patients (0.5%) in the OCT group and in 17 patients (1.4%) in the angiography group.

CONCLUSIONS Among patients undergoing PCI, OCT guidance resulted in a larger minimum stent area than angiography guidance, but there was no apparent between-group difference in the percentage of patients with target-vessel failure at 2 years. (Funded by Abbott; ILUMIEN IV: OPTIMAL PCI ClinicalTrials.gov number, NCT03507777.)

Review

Role of Ultrasound Methods for the Assessment of NAFLD

Golo Petzold

Abstract: Nonalcoholic fatty liver disease (NAFLD) is the most common liver disease worldwide. The prevalence in patients with type 2 diabetes mellitus is between 55–80%. The spectrum of NALFD ranges from simple steatosis to aggressive steatohepatitis with potentially progressive liver fibrosis up to cirrhosis and hepatocellular carcinoma. In clinical practice, there are two important aims: First to make the diagnosis of NAFLD, and second, to identify patients with advanced fibrosis, because extent of fibrosis is strongly associated with overall mortality, cardiovascular disease, hepatocellular carcinoma, and extrahepatic malignancy. Histology by liver biopsy can deliver this information, but it is an invasive procedure with rare, but potentially severe, complications. Therefore, non-invasive techniques were developed to stage fibrosis. Ultrasound is the primary imaging modality in the assessment of patients with confirmed or suspected NAFLD. This narrative review focus on different ultrasound methods to detect and graduate hepatic steatosis and to determine grade of fibrosis using elastography-methods, such as transient elastography and 2-dimensional shear wave elastography in patients with NAFLD. Particular attention is paid to the application and limitations in overweight patients in clinical practice. Finally, the role of B-mode ultrasound in NAFLD patients to screen for hepatocellular carcinoma is outlined.
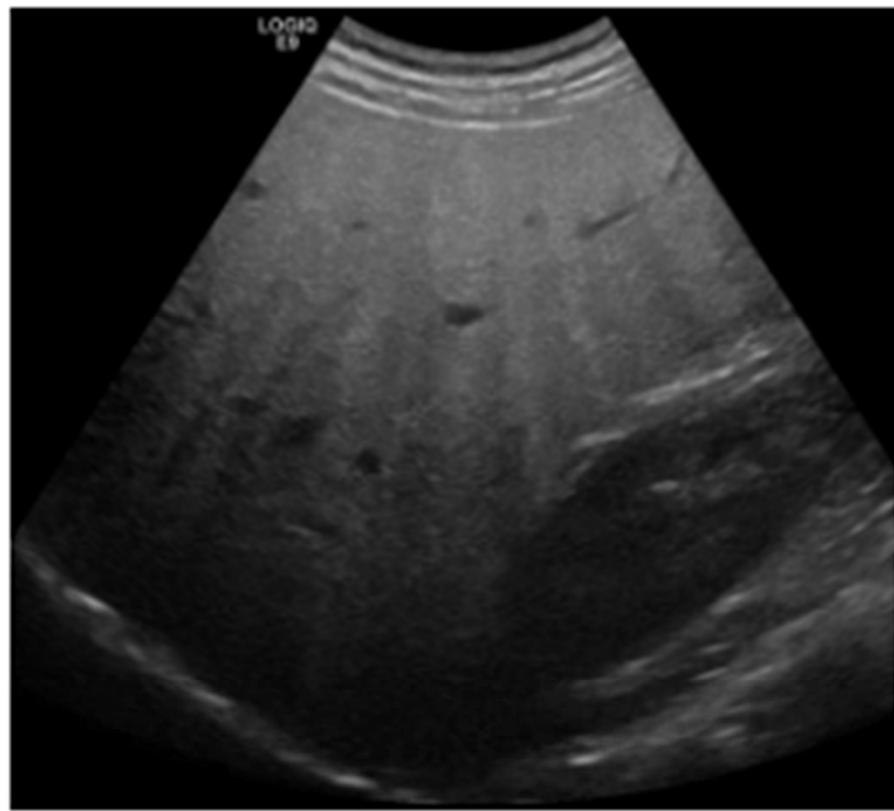
Figure 1. B-Mode sonography with marked increase in fine echoes with poor or non-visualization of the intrahepatic vessel borders, diaphragm, and posterior right lobe of the liver. This finding is pathognomonic for steatosis.
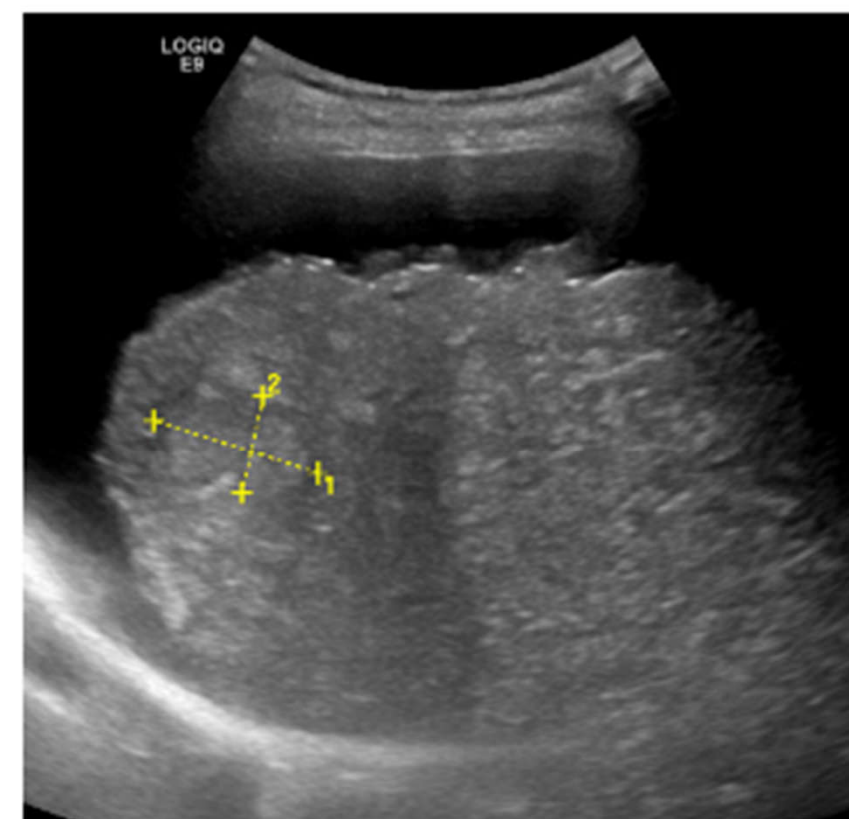
Figure 2. Characteristic changes in the liver. It shows nodular liver surface, perihepatic ascites, and inhomogeneous parenchyma in a NAFLD patient. These findings are pathognom Titanic-Ultimate
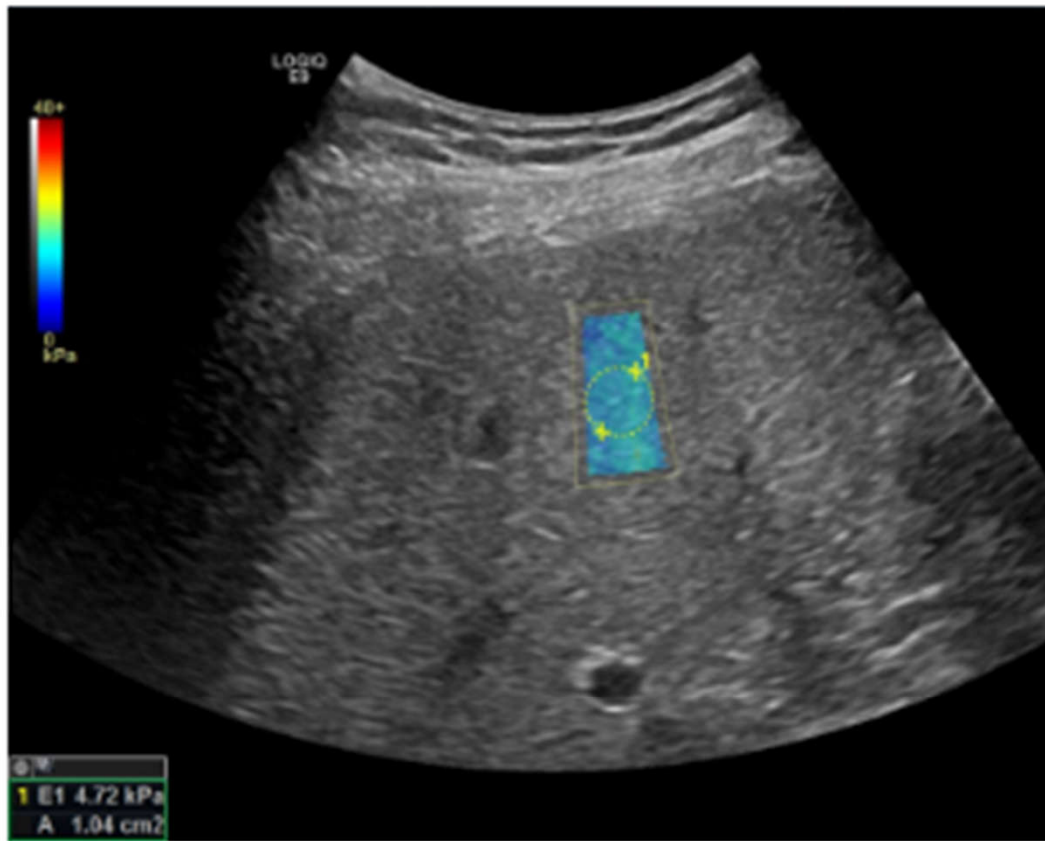
Figure 3. Representative liver stiffness measurement in a NAFLD patient with only simple steatosis. The elastogram fulfilled the quality criteria.

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ARTICLE: LIVER

A Reappraisal of the Diagnostic Performance of B-Mode Ultrasonography for Mild Liver Steatosis

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We performed a retrospective, multinational, multicenter, cross-sectional, observational study (6 referral centers from 3 nations). We included 5,056 participants who underwent both B-USG and magnetic resonance proton density fat fraction (MRI-PDFF) within a 6-month period. The diagnostic performance of B-USG was compared with that of MRI-PDFF as a reference standard for fatty liver diagnosis, using sensitivity, specificity, positive and negative predictive values, diagnostic accuracy, and area under the receiver operating characteristic curve (AUC).

RESULTS:

B-USG showed a sensitivity of 83.4%, specificity of 81.0%, and AUC of 0.822 in diagnosing mild liver steatosis (6.5% ≤MRI-PDFF ≤14%). The sensitivity, specificity, and AUC in diagnosing the presence of fatty liver disease (MRI-PDFF ≥6.5%) were 83.4%, 81.0%, and 0.822, respectively. The mean PDFF of B-USG–diagnosed nonfatty liver differed significantly from that of diagnosed mild liver steatosis (3.5% ± 2.8% vs 8.5% ± 5.0%, $P < 0.001$). The interinstitutional variability of B-USG in diagnosing fatty liver was similar in diagnostic accuracy among the 6 centers (range, 82.8%–88.6%, $P = 0.416$).

DISCUSSION:

B-USG was an effective, objective method to detect mild liver steatosis using MRI-PDFF as comparison, regardless

THE END