Background:
Measurement of liver stiffness is an established technique to assess significant fibrosis in patients with chronic liver disease. Moreover, it might be a useful surrogate marker to diagnose or rule out clinically significant portal hypertension. However, the value of 2-dimensional shear wave elastography (2D-SWE) to predict mortality in cirrhotic patients is unknown. The aim of this multicentre retrospective study was to assess the value of 2D-SWE using Aixplorer to predict mortality in chronic liver disease patients.

Methods:
Inclusion criteria were presence of chronic liver disease, valid 2D-SWE at baseline, no previous events of decompensation at baseline and at least one year of clinical follow up after the index 2D-SWE measurement. Clinical and laboratory parameters were assessed at baseline. The primary outcome was overall mortality of the patients. For the selection of cutoff values, receiver operating characteristics (ROC) analysis with survival as endpoint was calculated. Kaplan-Meier curves were used to compare the survival rates of patients above versus below each cut-off value. Univariate time-to-event analysis and multivariate Cox regression analysis was performed to identify independent predictors of survival.

Results:
2084 patients from 15 centres were screened and 1434 patients fulfilled the inclusion criteria and were included in the analysis with a median follow up of 34.8 months. The median age of the population was 55 (range: 15-85) years, with 58% male patients. The main aetiology was viral hepatitis (27%), while 21% suffered from chronic alcoholic liver disease. The median of liver 2D-SWE was 11kPa (range: 6.9-19.89 kPa) and the 2D-SWE predicted survival in advanced chronic liver disease.

Conclusions:
This study shows for the first time that liver stiffness measured by 2D-SWE predicts mortality in patients with chronic liver disease. 2D-SWE of more than 20.6 kPa might be helpful to stratify risk and guide patient management.