

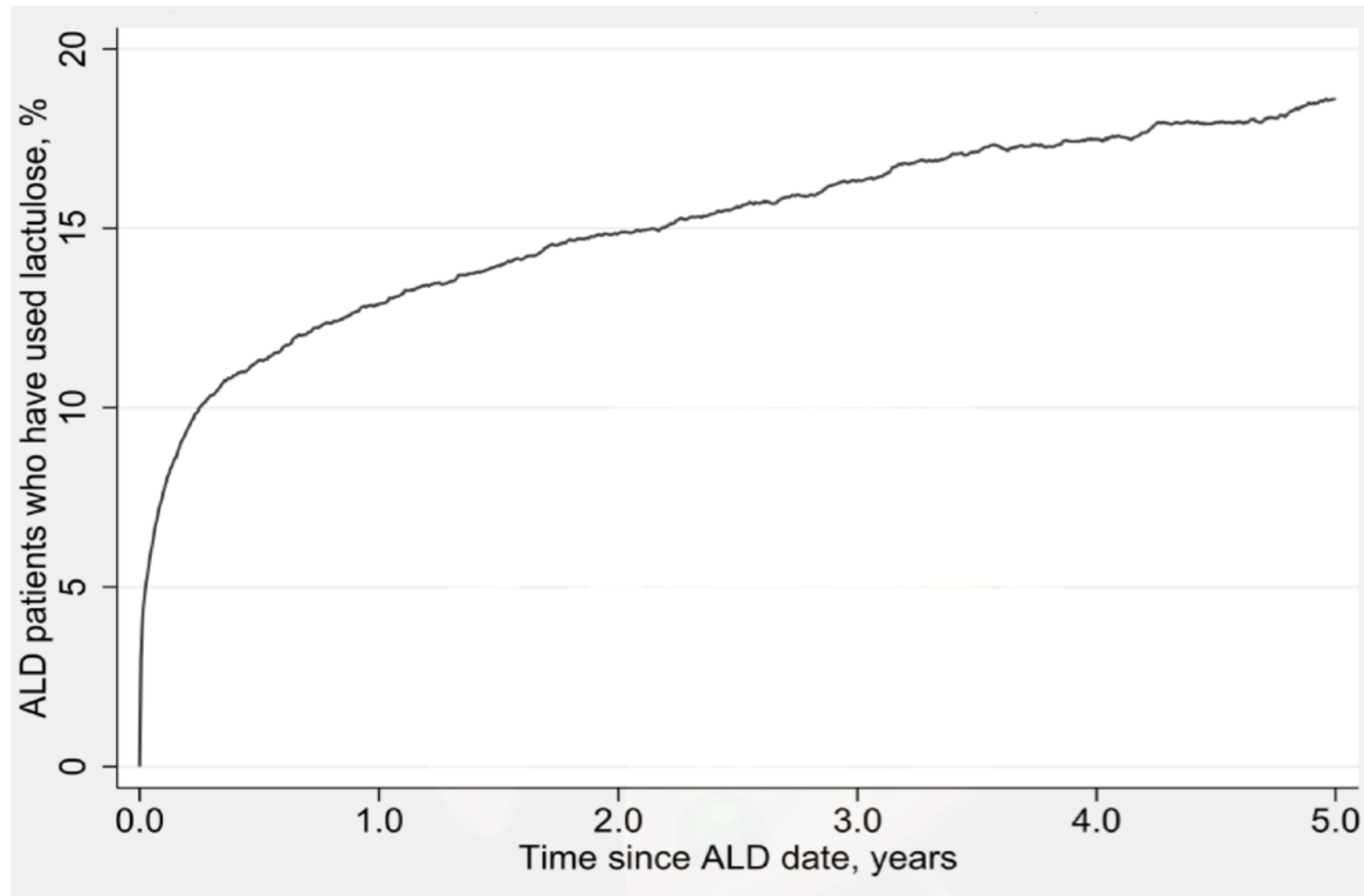
Lactulose use among patients with alcohol-related liver cirrhosis: prevalence and association with mortality - a Danish nationwide cohort study

Emma Celia Herting^{1,2}, Morten Daniel Jensen^{1,2}, Peter Jepsen^{1,2,3}

¹Department of Hepatology and Gastroenterology, Aarhus University Hospital, Aarhus, Denmark, ²Institute of Clinical Medicine, Aarhus University, Aarhus, Denmark, ³Department of Clinical Epidemiology, Aarhus University Hospital, Aarhus, Denmark

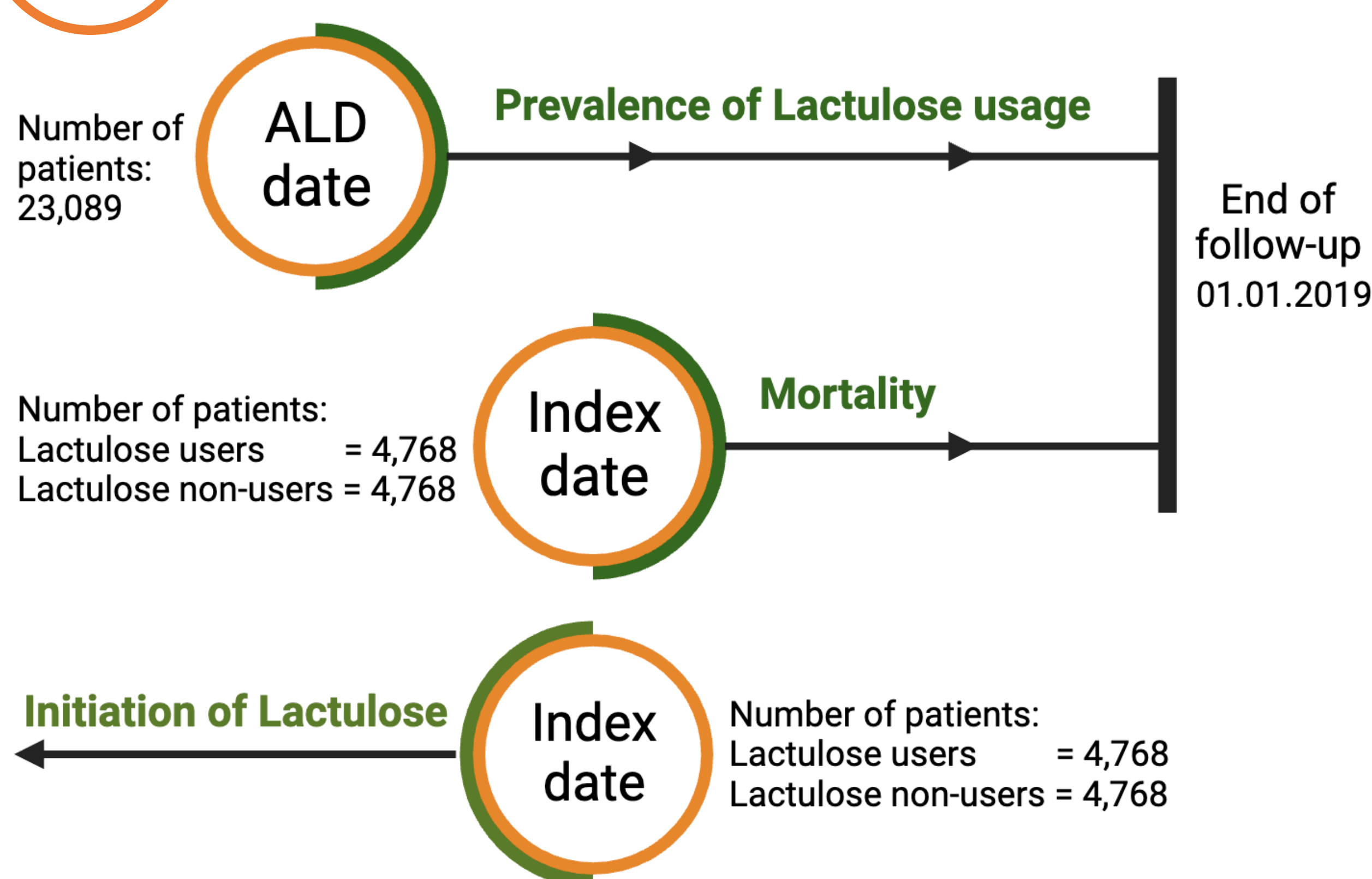
1 What is the issue?

- Hepatic encephalopathy(HE): prognostic factor in alcohol-related liver cirrhosis (ALD cirrhosis)
 - Not recorded in Danish healthcare registries
- Lactulose, first-line treatment, is easily identified through data on filled prescriptions
- Aim: **Can lactulose be used as a surrogate marker of HE ?**



- Figure 1: Prevalence of new lactulose users after diagnosis of ALD cirrhosis rose rapidly to 11% and then climbed slowly to reach 19% within five years

2 How did we investigate?



- All Danish patients diagnosed with ALD cirrhosis 2000-2018
 - ALD date: diagnosis date of ALD cirrhosis

3 What did we find?

Table 2: Predictors of initiation lactulose use among patients with ALD cirrhosis

	Adjusted OR	95% CI
Sex, male	1.05	0.96 - 1.15
Age, per 10 years	1.11	1.06 - 1.16
Diabetes	1.12	1.01 - 1.25
Cardiovascular disease	1.09	0.99 - 1.20
Chronic obstructive pulmonary disease	1.22	1.07 - 1.38
Severe liver disease	2.00	1.83 - 2.18
Hepatocellular carcinoma	1.73	1.32 - 2.27
Cancer, others	1.13	0.99 - 1.29

Table 3: Hazard ratios for mortality in patients with ALD cirrhosis

	Adjusted HR	95% CI
Lactulose usage versus non-use	1.61	1.53 – 1.69
Sex, male	1.20	1.13 - 1.27
Age, per 10 years	1.23	1.19 - 1.26
Diabetes	1.09	1.02 - 1.16
Cardiovascular disease	1.03	0.98 - 1.10
Chronic obstructive pulmonary disease	1.22	1.13 - 1.32
Severe liver disease	1.17	1.11 - 1.24
Hepatocellular carcinoma	2.46	2.14 - 2.83
Cancer, others	1.32	1.22 – 1.43

4 What is the key message?

- Lactulose is used by 10-20 % of patients with ALD cirrhosis and is used to treat patients with severe liver disease
- **Lactulose users have higher mortality than nonusers**
- The prevalence of lactulose usage reflects the prevalence of patients with HE