



# Patients with liver cirrhosis show worse survival if decompensation occur later during course of disease than at diagnosis

E. Nilsson, H. Anderson, K. Sargenti, S. Lindgren, H. Prytz

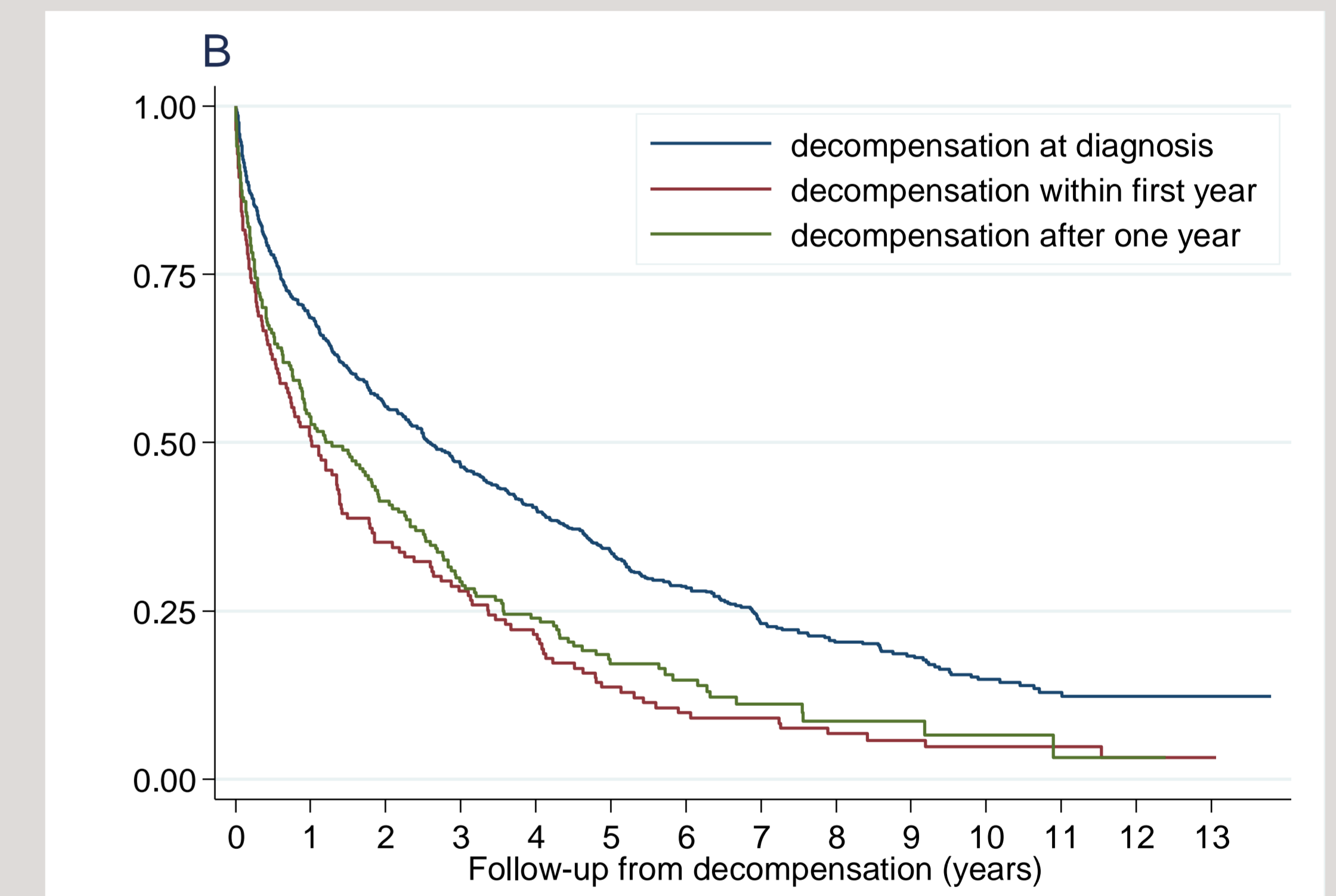
**Background and aims:** Liver cirrhosis is characterized by a silent phase until decompensation, which is defined by ascites, bleeding from esophageal varices, or encephalopathy. Although it is presumed that the survival of decompensated patients is the same regardless of when decompensation occurs, data to support this are scarce. We aimed to study the impact of time of decompensation on the clinical course and survival of patients with cirrhosis.

**Material and methods:** We used medical registries to define a 10-year cohort of 1317 patients with cirrhosis in Skåne, Sweden. The region has a population of 1,169,464 (year 2005). Medical records were reviewed. All patients were followed clinically until the end of 2011 and overall survival and transplantation were determined at the end of 2014.

Baseline characteristics	Total cohort at diagnosis	No complication at diagnosis	Any complication at diagnosis	Any complication during follow-up	ascites at diagnosis	ascites during follow-up	Variceal bleeding at diagnosis	Variceal bleeding during follow-up	HE at diagnosis	HE during follow-up
Total (N)	1317	688	629	327	505	228	44	39	15	46
Gender, male	869 (66%)	434 (63%)	435(69%)	216 (66%)	345 (68%)	146 (64%)	37 (84%)	26 (67%)	9 (60%)	35 (76%)
Age	60	59.2	61.7	61.6	62.1	61.4	60.1	60.9	61.1	63.1
MELD	12.3	11.4	15.9	16.1	15.7	16.4	12.3	12.3	20.5	17.9
HCC (at date of complication)	61	43	18	48	16	36	1	5	0	6
Porta thrombosis (at date of compli)	32	12	20	27	13	16	0	7	1	4
<b>Follow-up</b>										
Transplantation	85	64	22	30	17	25	2	2	2	2
Death	903	417	486	276	389	189	34	34	10	42

## Results

- 629 patients were decompensated at diagnosis of which 505 had ascites, 44 variceal bleeding and 15 HE only
- 228 patients developed ascites as first decompensating event during follow-up, 39 variceal bleeding and 46 HE only
- 5-year survival rate was 33% in patients decompensated at cirrhosis diagnosis
- 5-year survival rate was 15% in patients decompensating during follow-up
- Hazard ratio for death/transplantation was 1.62
- Excess risk persisted after adjustment for age, gender, MELD, comorbidities, HCC and porta thrombosis



Type of first complication	Univariate HR	HR adjusted by age and sex	HR adjusted by age, sex, MELD, HCC and portal thrombosis.
Any complication* n=954	1.62 (1.39-1.88) p<0.001	1.57 (1.35-1.83) p<0.001	1.50 (1.28-1.77) p<0.001
Ascites n=732	1.60 (1.34-1.90) p<0.001	1.54 (1.29-1.83) p<0.001	1.38 (1.15-1.67) p=0.001
Variceal Bleeding n=83	2.27 (1.34-3.86) p=0.002	2.21 (1.29-3.79) p=0.004	1.90 (0.98-3.68) p=0.06
HE n=61	1.38 (0.71-2.70) p=0.35	1.27 (0.63-2.53) p=0.50	2.62 (1.15-5.96) p=0.02

HE hepatic encephalopathy, HCC hepatocellular carcinoma, MELD Model of End Stage Liver Disease, HR Hazard ratio

**Conclusions:** Our results provide evidence for an association between transplantation-free survival after decompensation and the time of decompensation in liver cirrhosis, with worse survival when decompensation occurs during follow-up, thus challenging the generally held, view that the survival after decompensation is independent of when decompensation occurs.