

## Alcohol rehabilitation after alcoholic hepatitis is associated with reduced mortality: results of a 2012-2021 National retrospective study

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Alcohol rehabilitation after alcoholic hepatitis is associated with reduced mortality: results of a 2012-2021 National retrospective study

# Take home messagei

Rehab is the most critical intervention to improve outcome of patients after severe alcoholic hepatitis



## Introduction

The impact of alcohol rehabilitation programs following severe alcoholic hepatitis remains understudied, with limited available knowledge on this topic.



#### Aim

- The objective of the study was to assess the outcome of liver transplantation or death within one year after severe alcoholic hepatitis
- The main exposure was participation in alcohol rehabilitation programs within one to 12 months following the diagnosis of severe alcoholic hepatitis



#### Method

- We conducted a retrospective longitudinal study involving patients diagnosed with alcohol use disorders in French hospitals from 2012 to 2021 (N=1,438,236).
- We selected individuals recorded with hepatic failure, portal hypertension bleeding, extrahepatic organ failure or transjugular liver biopsy within 8 weeks following the diagnosis of alcoholic hepatitis
- We measured the strength of associations with multivariate Cox models stratified on age, sex, initial severity of illness, bacterial and fungal sepsis, major comorbidities, and deprivation in the complete population and in matched patients (Matchit package, exact method)



# Results

#### Table 1: Characteristics of patients with alcoholic hepatitis by 1-year liver transplantation or mortality

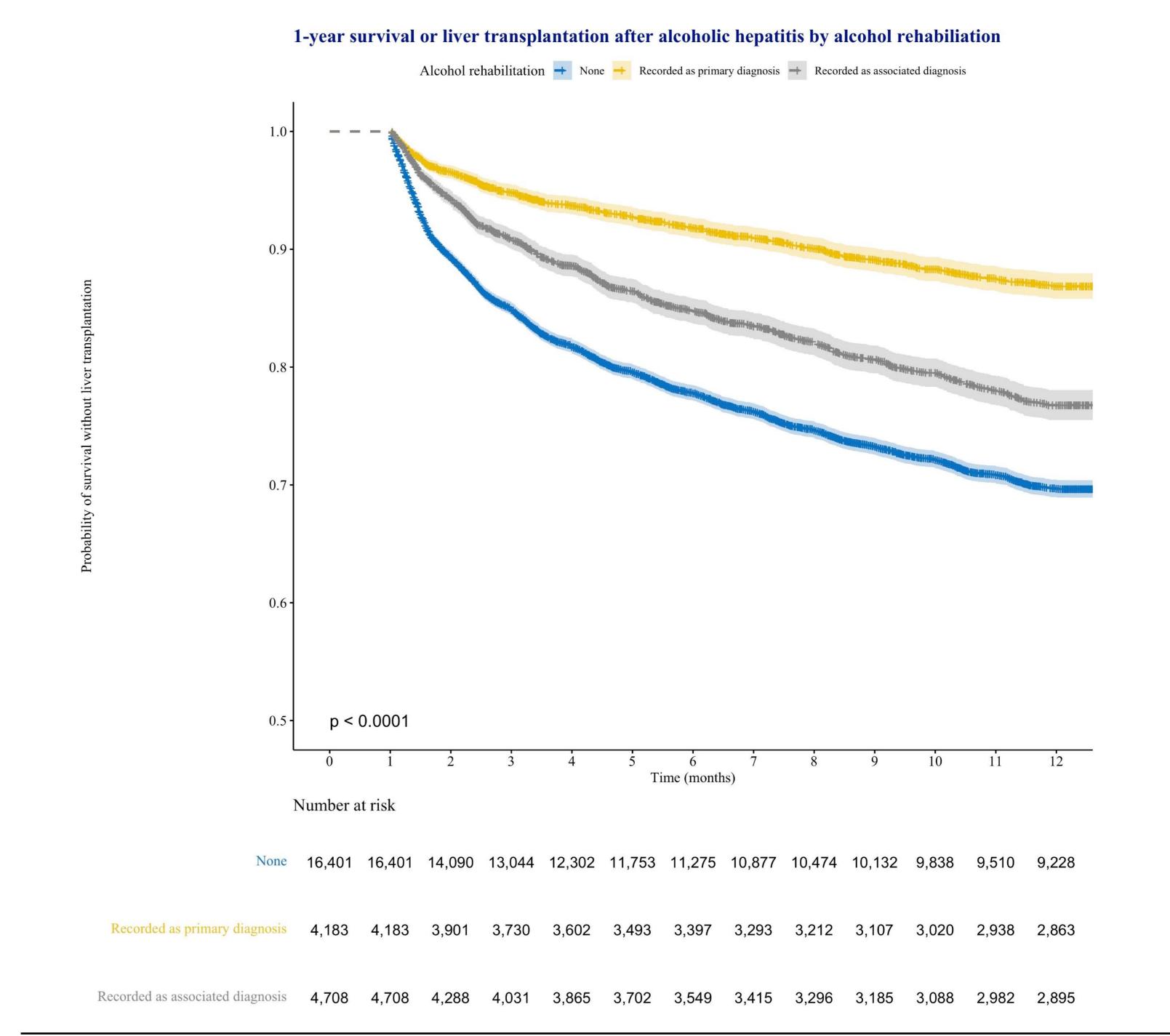
| Characteristic                      | Overall $N = 25,368^{1}$ | No death or liver transplantation n = 19,160, 76% <sup>1</sup> | 1-year mortality<br>(n=5,544) or liver<br>transplantation (n=<br>664)<br>n = 6,208, 24% <sup>1</sup> | p-value <sup>2</sup> |
|-------------------------------------|--------------------------|--|--|----------------------|
| Age at alcoholic hepatitis          | 54.0 (47.0, 61.2)        | 53.0 (46.0, 60.0)  | 58.0 (51.0, 64.0)  | <0.001               |
| Male sex                            | 18,492 (72.89%)          | 13,932 (72.71%)  | 4,560 (73.45%)   | 0.3                  |
| Smoking habits                      | 12,089 (47.65%)          | 9,850 (51.41%)   | 2,239 (36.07%)   | < 0.001              |
| Obesity                             | 5,839 (23.02%)           | 4,601 (24.01%)   | 1,238 (19.94%)   | <0.001               |
| Type-2 diabetes mellitus            | 5,816 (22.93%)           | 4,491 (23.44%)   | 1,325 (21.34%)   | <0.001               |
| Metabolic syndrome                  | 1,988 (7.84%)            | 1,567 (8.18%)  | 421 (6.78%)  | <0.001               |
| Liver risk factors                  | 2,960 (11.67%)           | 2,200 (11.48%)   | 760 (12.24%)   | 0.11                 |
| Sepsis                              | 8,907 (35.11%)           | 6,159 (32.15%)   | 2,748 (44.27%)   | < 0.001              |
| Alcohol rehabilitation              |                          |  |  | < 0.001              |
| Not recorded                        | 16,460 (65%)             | 11,772 (61%)   | 4,688 (76%)  |                      |
| Recorded as a primary diagnosis     | 4,188 (17%)              | 3,683 (19%)  | 505 (8.1%)   |                      |
| Recorded as an associated diagnosis | 4,720 (19%)              | 3,705 (19%)  | 1,015 (16%)  |                      |
| Follow-up, m                        | 18.5 (5.0, 45.5)         | 29.3 (13.4, 55.0)  | 3.1 (1.6, 6.5)   | <0.001               |

Patients were included one month after alcoholic hepatitis. Severe alcoholic hepatitis was alcoholic hepatitis with any of hepatic failure, extrahepatic organ failure, portal hypertension bleeding, or transjugular liver biopsy within 4 weeks after alcoholic hepatitis. Sepsis was bacterial pneumonia, urinary tract infection, bacteremia, peritonitis, or invasive fungal disease. The Charlson comorbodity index predicts 1-year survival in patients with comorbidities, and ranges from low (<3), intermediate (3-5) and high (>5), with higher scores indicating higher frailty. The ecological deprivation index used to describe spatial socioeconomic and health inequalities was the French deprivation index Fdep, and was categorized in

<sup>1</sup> Median (IQR); n (%); <sup>2</sup> Wilcoxon rank sum test; Pearson's Chi-squared test

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#### Multivariate risks for 1-year liver transplantation or mortality

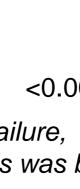
| maintainate risks for a year liver transplantation of mortality |                  |         |                  |         |  |  |  |
|---|------------------|---------|------------------|---------|--|--|--|
|   | Complete sample  |         | Matched sample   |         |  |  |  |
| Characteristic  | HR <sup>1</sup>  | p-value | HR <sup>1</sup>  | p-value |  |  |  |
| Alcohol rehabilitation  |                  |         |                  |         |  |  |  |
| None  |                  |         |                  |         |  |  |  |
| Recorded as primary diagnosis                                   | 0.51 (0.45-0.58) | <0.001  | 0.44 (0.39-0.49) | <0.001  |  |  |  |
| Recorded as associated  | 0.74 (0.68-0.81) | <0.001  | 0.72 (0.66-0.78) | <0.001  |  |  |  |

Risks were computed with Cox proportional hazards models stratified on age category, organ failure, sepsis, Charlson comorbidity index, and deprivation in the complete population (N=25,292) and in matched patients (N=20,483). Severe alcoholic hepatitis was alcoholic hepatitis with any of hepatic failure, extrahepatic organ failure, portal hypertension bleeding, or transjugular liver biopsy within 4 weeks after alcoholic hepatitis. Patients censored before 4 weeks were excluded from the analysis HR = Hazard Ratio, CI = Confidence Interval



## Conclusions

- Alcohol rehabilitation programs are the most critical clinical interventions to reduce mortality or liver transplantation within one year after severe alcoholic hepatitis.
- Currently, less than 40% of patients have access to this treatment in France.





Contact information