Impact of cirrhosis on health-related quality of life and activity among patients with metabolic dysfunction-associated steatohepatitis in Canada, France, Germany and Italy

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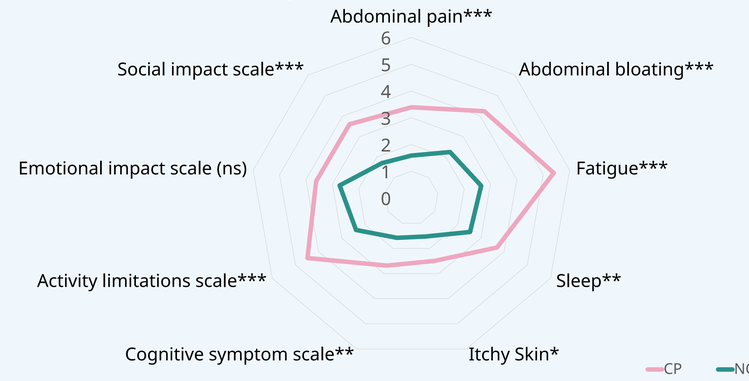
Patients with cirrhosis reported lower health-related quality of life than patients without cirrhosis

Key result

Figure 1: Difference in NASH-CHECK domains in **presence of cirrhosis (CP)** patients compared to **no presence of cirrhosis (NCP)** patients



CP and NCP Patient bases- Abdominal pain, Abdominal bloating, Fatigue, n=27 and n=588; Sleep and Activity limitations scale, n= 27 and n=590; Itchy skin, Cognitive symptom scale n=27 and n=591, Emotional impact scale n=27 and 580, Social impact scale n=27 and 585; respectively. ns = not significant .

**p<0.05, **p<0.01, ***p<0.001*

Aim

- A significant health-related quality of life (HRQoL) burden and poorer physical health has been reported in patients with metabolic dysfunction-associated steatohepatitis (MASH) which have progressed to cirrhosis, compared to those which have not[1,2]. However, there is still a limited amount of research on cirrhotic MASH patients.
- This study aims to describe the impact of liver cirrhosis on health-related HRQoL and activity among patients with MASH in Canada, France, Germany and Italy.

Methods

- Data were drawn from the Adelphi Real World MASH Disease Specific Programme (DSP)™, a cross-sectional survey of physicians and their patients with MASH in Canada, France, Germany and Italy from January – May 2024.The DSP methodology has been described,[3,4] validated,[5] and demonstrated to be representative and consistent over time.[6]
- Physicians reported patient demographics, clinical characteristics and HCRU.
- Physicians were eligible to participate if they were a primary care physicians or specialists* who were personally responsible for the clinical management of patients with MASH and saw a minimum of five (primary care physicians) or ten (specialists) patients per month.
- Patients were eligible if they were ≥18 years old, were being managed for MASH, did not have another form of liver disease** and were not participating in a clinical trial for MASH at the time of data collection.
- Patients were stratified into two subgroups: those with physician-reported presence of cirrhosis (**CP**); and those without physician-reported cirrhosis (**NCP**).

*Specialists included endocrinologist/diabetologists, gastroenterologists, hepatologists, hepato-gastroenterologist and internal medicine specialists.
** Liver disease was defined as: alcohol-related liver disease, primary biliary cholangitis, viral hepatitis, autoimmune hepatitis, Wilsons's disease, alpha-1-antitrypsin deficiency or hemochromatosis.

Methods

- Patients self-reported HRQoL via the Non-alcoholic steatohepatitis Clinical Hepatology Evaluation and Classification Key (NASH-CHECK), EQ-5D-5L (German tariff) and the Work Productivity and Impairment Questionnaire (WPAI).
- The NASH-CHECK measures HRQoL across six symptom scale scores and three HRQoL scale scores on a scale of 0-10; with higher scores indicating more severe symptoms and higher HRQoL impact.[7]
- The EQ-5D-5L assesses general health across five dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Utility scores range from 1 (full health) to less than 0 (where 0 = health state equivalent to death). Visual Analogue Scale (VAS) scores are measured on a scale of 0–100%, where 0 = worst imaginable health and 100 = best imaginable health.[8]
- The WPAI measures work and activity impairment during the past seven days, across absenteeism, presenteeism, and impairment in work and daily activities domains. Scores are expressed as impairment percentages, with higher numbers indicating greater impairment and less productivity.[9]
- Patients with physician-reported presence of cirrhosis (**CP**) were compared using pairwise statistics against patients without physician-reported cirrhosis (**NCP**) control group after entropy balancing on patient age and sex.

Results

- Overall, 247 physicians: 62 primary care physicians, 103 gastroenterologists, 6 hepatologists, 27 hepato-gastroenterologists, 41 endocrinologist/diabetologists and 8 internal medicine specialists reported data for 1,928 questionnaires patients with MASH. Of these patients 105 were **CP** and 1,823 were **NCP.**
- Patient demographics are detailed in **Table 1**.
- **CP** patients had a higher mean body mass index than **NCP** patients.

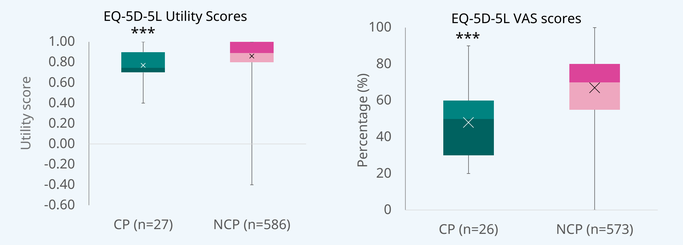
Table 1: Physician-reported demographics

	CP (n=105)	NCP (n=1823)
Mean (SD) age, years	63.5 (10.3)	55.3 (11.3)
Female, n (%)	42 (40.0)	718 (39.4)
Mean (SD) BMI, kg/m^2	34.6 (8.4)	32.4 (6.5)

Results

- **CP** patients reported higher scores in eight of the nine NASH-CHECK domains than **NCP** (Figure 1).
- This difference was seen the most in the Activity Limitations Scale (4.5 [2.1] vs 2.4 [1.9]; p<0.001), Social Impact Scale (3.6 [2.7] vs 1.7 [1.7]; p<0.001), Fatigue (5.4 [2.9] vs 2.6 [2.4]; p<0.001) and Abdominal Bloating (4.2 [2.3] vs 2.2 [2.2]; p<0.001) domains.
- Mean EQ-5D-5L utility scores were lower for **CP** patients (0.77 [0.14]) than **NCP** patients (0.86 [0.16]; p<0.001; **Figure 2**).
- VAS scores were also lower (48.2% [20.3%] vs 67.5% [18.8%]; p<0.001; **Figure 2**).

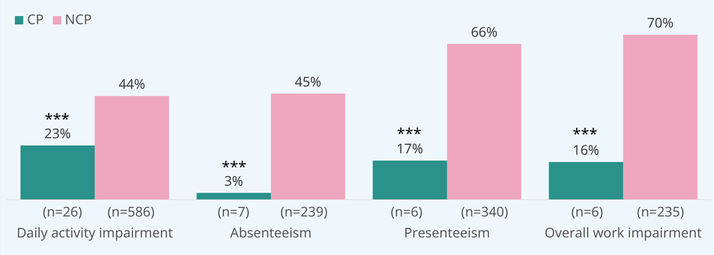
Figure 2: Median (IQR) EQ-5D-5L utility scores and VAS scores in **CP** and **NCP** patients



****p<0.001, x indicates mean score*

- **CP** patients reported a lower work impairment, presenteeism, absenteeism and daily activity impairment score than **NCP** patients via the WPAI (all p<0.005; **Figure 3**).

Figure 3: Mean WPAI Scores in **CP** and **NCP** patients



****p<0.001*

Summary and Conclusions

- **CP** patients reported a lower HRQoL than **NCP** patients, as demonstrated by lower EQ-5D-5L utility and visual analogue scores and significantly higher NASH-CHECK scores in eight of the nine domains: Abdominal Pain, Abdominal Bloating, Fatigue, Sleep, Itchy Skin, Cognitive Symptoms, Activity Limitations and Social Impact.
- Presence of cirrhosis also impacted daily activities and work productivity, particularly absenteeism.
- These findings highlight the need for improved management strategies in MASH patients with cirrhosis.
- These findings also highlight the importance of preventative measures to slow down and prevent the progression of MASH, especially for cirrhosis.

Limitations

- While minimal inclusion criteria governed the selection of participating physicians, participation was influenced by willingness to complete the survey.
- Participating patients may not reflect the general MASH population as the DSP only includes patients who are consulting with their physician.
- Patient diagnosis of MASH was based on the judgement of the respondent physician and not a formalised diagnostic check. This is representative of real-world physician classification of patients.
- Completion of the patient survey was voluntary. Missing data were not imputed and therefore the base could vary between variables and are reported as appropriate.

Disclosures

- ES, HW, KT, EQ are all employees of Adelphi Real World, Bollington, UK.
- RO is an employee and shareholder of Novo Nordisk A/S.

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Novo Nordisk was one of multiple subscribers to the DSP.
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