

**Supplementary information for**  
**Real-world evidence of long-term survival and healthcare resource use in patients with hepatic encephalopathy receiving rifaximin- $\alpha$  treatment: a retrospective observational extension study with long term follow-up (IMPRESS II)**

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**Supplementary Table 1: Liver-related ICD-10 diagnosis codes**

Hospitalisations with the diagnosis codes listed here were classified as liver-related for the purpose of this study.

Primary ICD-10 code	Description
K70	Alcoholic liver disease
K70.0	Alcoholic fatty liver
K70.1	Alcoholic hepatitis
K70.2	Alcoholic fibrosis and sclerosis of liver
K70.3	Alcoholic cirrhosis of liver
K70.4	Alcoholic hepatic failure
K70.9	Alcoholic liver disease, unspecified
K71.8	Toxic liver disease with other disorders of liver
K72	Hepatic failure, not elsewhere classified
K72.0	Acute and subacute hepatic failure
K72.1	Chronic hepatic failure
K72.9	Hepatic failure, unspecified
K74.6	Other and unspecified cirrhosis of liver
K75.8	Other specified inflammatory liver diseases
K76.0	Fatty (change of) liver, not elsewhere classified
K76.5	Hepatic veno-occlusive disease
K76.6	Portal hypertension
K76.7	Hepato-renal syndrome
K76.9	Liver disease, unspecified
C22.0	Malignant neoplasm: Liver cell carcinoma
I85	Oesophageal varices
I85.0	Oesophageal varices with bleeding
I85.9	Oesophageal varices without bleeding
I86.4	Gastric varices

**Supplementary Table 2. Number of patients previously receiving a liver transplant prior to initiating treatment with rifaximin**

<b>Received a liver transplant pre-rifaximin initiation</b>	<b>n (%=125)</b>
Yes	2 (2%)
No	123 (98%)
Not recorded	11

**Supplementary Table 3. Summary of treatment discontinuations**

<b>Reasons for treatment discontinuation</b>	<b>1-5 years (n, %=60)</b>	<b>All patients surviving at 5 years without liver transplant (n, %=25)</b>
Death	48 (80%)	-
Encephalopathy resolved	1 (2%)	6 (24%)
Moved to end of life care	1 (2%)	4 (16%)
Clinical improvement	3 (5%)	4 (16%)
Liver Transplant	3 (5%)	-
Course completed	1 (2%)	3 (12%)
GP decision	1 (2%)	3 (12%)
Alcohol abuse	-	1 (4%)
No improvement in symptoms	-	1 (4%)
Prescribing issue	1 (2%)	1 (4%)
Rash	-	1 (4%)
Treatment interruption	1 (2%)	1 (4%)
Not recorded	6	12

Key: GP – general practitioner.

**Supplementary Table 4. Concomitant administration of laxatives and enemas between 1–5 years post-index**

<b>Medications**</b>	<b>number of patients (%=98*)</b>	<b>N courses prescribed</b>
Lactulose	42 (43%)	45
Movicol	4 (4%)	4
Senna	7 (7%)	7
Macrogol	2 (2%)	2
Sodium picosulphate	1 (1%)	1
Docusate	6 (6%)	6
Laxido	2 (2%)	3
Other laxative	1 (1%)	1
Phosphate enema	5 (5%)	12
Not recorded	53 (54%)	

\*total n is the number of patients that survived past 12 months  
\*\*categories are not mutually exclusive

Supplementary Table 5. Hospital resource use 1–2 and 2–5 years post-RFX initiation

	Resource timeline	
	1-2 years	2-5 years
<b>Total liver-related admissions/visits recorded</b>		
ED visits	44	40
Inpatient admissions	79	115
ICU admissions	3	0
Outpatient visits	265	444
<b>Total all-cause admissions/visits recorded</b>		
ED visits	69	87
Inpatient admissions	134	176
ICU admissions	4	2
Outpatient visits	381	742
<b>Liver-related resource use per patient per year - median (range)</b>	n=100	n=80
ED visits	0 (0–25.6)	0 (0–82.5)
Inpatient admissions	0 (0–32.7)	0 (0–82.5)
ICU admissions	0 (0–1.0)	0 (0–0.0)
Outpatient visits	2.0 (0–26.1)	1.7 (0–18.7)
<b>All-cause resource use per patient per year - median (range)</b>		
ED visits	0 (0–26.1)	0 (0–82.5)
Inpatient admissions	0 (0–68.5)	0.3 (0–82.5)
ICU admissions	0 (0–2.0)	0 (0–0.8)
Outpatient visits	3.0 (0–65.2)	2.3 (0–23.9)
<b>ED – discharge/transfer destination after admission (liver-related admissions)</b>	(n, % n=44)	(n, % n=40)
Inpatient admission	34 (77%)	38 (95%)
ICU admission	1 (2%)	0 (0%)
Discharged home	9 (20%)	2 (5%)
<b>ED – discharge/transfer destination after admission (all-cause admissions)</b>	(n events, % n=69)	(n events, % n=87)
Inpatient admission	49 (71%)	57 (66%)
ICU admission	1 (1%)	1 (1%)
Discharged home	19 (28%)	29 (33%)
<b>Inpatient admission – discharge/transfer destination (liver-related admissions)</b>	(n events, % n=79)	(n events, % n=115)
Discharged home	75 (95%)	108 (94%)
ICU admission	1 (1%)	0 (0%)
Patient died	3 (4%)	7 (6%)
<b>Inpatient admission – discharge/transfer destination (all-cause admissions)</b>	(n events, % n=134)	(n events, % n=176)
Discharged home	125 (93%)	167 (95%)
ICU admission	2 (1%)	1 (1%)
Patient died	7 (5%)	8 (5%)

Key: ED – emergency department, ICU – intensive care unit.