

Supplementary materials

Supplementary Table 1 Search strategy

PubMed

1 "Gastrointestinal Microbiomes"[Title/Abstract]) OR 91604
"Microbiome, Gastrointestinal"[Title/Abstract] OR "Gut
Microbiome"[Title/Abstract] OR "Gut
Microbiomes"[Title/Abstract] OR "Microbiome,
Gut"[Title/Abstract] OR "Gut Microflora"[Title/Abstract]
OR "Microflora, Gut"[Title/Abstract] OR "Gut
Microbiota"[Title/Abstract] OR "Gut
Microbiotas"[Title/Abstract]OR "Microbiota,
Gut"[Title/Abstract] OR "Gastrointestinal
Flora"[Title/Abstract] OR "Flora,
Gastrointestinal"[Title/Abstract] OR "Gut
Flora"[Title/Abstract] OR "Flora, Gut"[Title/Abstract] OR
"Gastrointestinal Microbiota"[Title/Abstract] OR
"Gastrointestinal Microbiotas"[Title/Abstract] OR
"Microbiota, Gastrointestinal"[Title/Abstract] OR
"Gastrointestinal Microbial Community"[Title/Abstract] OR
"Gastrointestinal Microbial Communities"[Title/Abstract]
OR "Microbial Community,
Gastrointestinal"[Title/Abstract] OR "Gastrointestinal
Microflora"[Title/Abstract] OR "Microflora,
Gastrointestinal"[Title/Abstract] OR "Gastric
Microbiome"[Title/Abstract] OR "Gastric
Microbiomes"[Title/Abstract] OR "Microbiome,
Gastric"[Title/Abstract] OR "Intestinal
Microbiome"[Title/Abstract] OR "Intestinal
Microbiomes"[Title/Abstract] OR "Microbiome,

Gastric"[Title/Abstract] OR "Intestinal
 Microbiome"[Title/Abstract] OR "Intestinal
 Microbiomes"[Title/Abstract] OR "Microbiome,
 Intestinal"[Title/Abstract] OR "Intestinal
 Microbiota"[Title/Abstract] OR "Intestinal
 Microbiotas"[Title/Abstract] OR "Microbiota,
 Intestinal"[Title/Abstract] OR "Intestinal
 Microflora"[Title/Abstract] OR "Microflora,
 Intestinal"[Title/Abstract] OR "Intestinal
 Flora"[Title/Abstract] OR "Flora, Intestinal"[Title/Abstract]
 OR "Enteric Bacteria"[Title/Abstract] OR "Bacteria,
 Enteric"[Title/Abstract]

2 "hepatic encephalopathy"[Title/Abstract] OR 14689
 "encephalopathies hepatic"[Title/Abstract] OR "hepatic
 encephalopathies"[Title/Abstract] OR "portal systemic
 encephalopathy"[Title/Abstract] OR "portal systemic
 encephalopathy"[Title/Abstract] OR "encephalopathy portal
 systemic"[Title/Abstract] OR ("brain diseases"[MeSH
 Terms] OR ("brain"[All Fields] AND "diseases"[All Fields])
 OR "brain diseases"[All Fields] OR "Encephalopathies"[All
 Fields] OR "Encephalopathy"[All Fields]) AND
 "Portal-Systemic"[Title/Abstract]) OR "encephalopathy
 portal systemic"[Title/Abstract] OR "portal systemic
 encephalopathies"[Title/Abstract] OR "encephalopathy
 portosystemic"[Title/Abstract] OR "hepatocerebral
 encephalopathy"[Title/Abstract] OR "portosystemic
 encephalopathy"[Title/Abstract] OR ("brain
 diseases"[MeSH Terms] OR ("brain"[All Fields] AND
 "diseases"[All Fields]) OR "brain diseases"[All Fields] OR

"Encephalopathies"[All Fields] OR "Encephalopathy"[All Fields]) AND "Portosystemic"[Title/Abstract] OR "portosystemic encephalopathies"[Title/Abstract] OR "encephalopathy hepatocerebral"[Title/Abstract] OR (("brain diseases"[MeSH Terms] OR ("brain"[All Fields] AND "diseases"[All Fields]) OR "brain diseases"[All Fields] OR "Encephalopathies"[All Fields] OR "Encephalopathy"[All Fields]) AND "Hepatocerebral"[Title/Abstract]) OR ("Hepatocerebral"[All Fields] AND "Encephalopathies"[Title/Abstract]) OR "hepatic coma"[Title/Abstract] OR "coma hepatic"[Title/Abstract] OR (("Coma"[MeSH Terms] OR "Coma"[All Fields] OR "Comas"[All Fields]) AND "Hepatic"[Title/Abstract]) OR "hepatic comas"[Title/Abstract] OR "hepatic stupor"[Title/Abstract] OR (("Hepatic"[All Fields] OR "hepatophyta"[MeSH Terms] OR "hepatophyta"[All Fields] OR "hepatics"[All Fields]) AND "Stupors"[Title/Abstract]) OR (("Stupor"[MeSH Terms] OR "Stupor"[All Fields] OR "stuporous"[All Fields] OR "lethargy"[MeSH Terms] OR "lethargy"[All Fields]) AND "Hepatic"[Title/Abstract]) OR ("Stupors"[All Fields] AND "Hepatic"[Title/Abstract]) OR (("liver failure, acute"[MeSH Terms] OR ("liver"[All Fields] AND "failure"[All Fields] AND "acute"[All Fields]) OR "acute liver failure"[All Fields] OR ("fulminant"[All Fields] AND "Hepatic"[All Fields] AND "failure"[All Fields]) OR "fulminant hepatic failure"[All Fields]) AND "cerebral edema"[Title/Abstract])

Embase

1	microbiomes:ti,ab,kw	OR	'gastrointestinal	136499
	microbiomes':ti,ab,kw	OR	'microbiome,	
	gastrointestinal':ti,ab,kw	OR	'gut microbiome':ti,ab,kw	
	OR 'gut microbiomes':ti,ab,kw	OR	'microbiome, gut':ti,ab,kw	
	OR 'gut microflora':ti,ab,kw	OR	'microflora, gut':ti,ab,kw	
	OR 'gut microbiota':ti,ab,kw	OR	'gut microbiotas':ti,ab,kw	
	OR 'microbiota, gut':ti,ab,kw	OR	'gastrointestinal	
	flora':ti,ab,kw	OR	'flora, gastrointestinal':ti,ab,kw	
	OR 'flora, gut':ti,ab,kw	OR	'gastrointestinal	
	microbiota':ti,ab,kw	OR	'gastrointestinal	
	microbiotat':ti,ab,kw	OR	'microbiota,	
	gastrointestinal':ti,ab,kw	OR	'gastrointestinal microbial	
	community':ti,ab,kw	OR	'gastrointestinal microbial	
	communities':ti,ab,kw	OR	'microbial community,	
	gastrointestinal':ti,ab,kw	OR	'gastrointestinal	
	microflora':ti,ab,kw	OR	'microflora, gastrointestinal':ti,ab,kw	
	OR 'gastric microbiome':ti,ab,kw	OR	'gastric	
	microbiomes':ti,ab,kw	OR	'microbiome, gastric':ti,ab,kw	
	OR 'intestinal microbiome':ti,ab,kw	OR	'intestinal	
	microbiomes':ti,ab,kw	OR	'microbiome, intestinal':ti,ab,kw	
	OR 'intestinal microbiota':ti,ab,kw	OR	'intestinal	
	microbiotat':ti,ab,kw	OR	'microbiota, intestinal':ti,ab,kw	
	OR 'intestinal microflora':ti,ab,kw	OR	'microflora,	
	intestinal':ti,ab,kw	OR	'intestinal flora':ti,ab,kw	
	OR 'flora,		intestinal':ti,ab,kw	
	OR enterobacteriaceae:ti,ab,kw			
	OR 'bacteria, enteric':ti,ab,kw			
2	'hepatic encephalopathy':ti,ab,kw	OR	'encephalopathies,	21203
	hepatic':ti,ab,kw	OR	'hepatic encephalopathies':ti,ab,kw	

OR'encephalopathy, hepatic':ti,ab,kw OR 'portal-systemic
encephalopathy':ti,ab,kw OR 'portal
systemicencephalopathy':ti,ab,kw OR 'encephalopathy,
portal-systemic':ti,ab,kw OR 'encephalopathies,
portal-systemic':ti,ab,kw OR 'encephalopathy, portal
systemic':ti,ab,kw OR 'portal-systemic
encephalopathies':ti,ab,kw OR
'encephalopathy,portosystemic':ti,ab,kw OR'hepatocerebral
encephalopathy':ti,ab,kw OR 'portosystemic
encephalopathy':ti,ab,kw OR'encephalopathies,
portosystemic':ti,ab,kw OR 'portosystemic
encephalopathies':ti,ab,kw OR
`encephalopathy,hepatocerebral':ti,ab,kw
OR'encephalopathies, hepatocerebral':ti,ab,kw OR
'hepatocerebral encephalopathies':ti,ab,kw OR'hepatic
coma':ti,ab,kw OR 'coma, hepatic':ti,ab,kw OR 'comas,
hepatic':ti,ab,kw OR 'hepatic comas':ti,ab,kw OR'hepatic
stupor':ti,ab,kw OR 'hepatic stupors':ti,ab,kw OR 'stupor,
hepatic':ti,ab,kw OR 'stupors, hepatic':ti,ab,kw OR'fulminant
hepatic failure with cerebral edema':ti,ab,kw

3	1 and 2	452
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Cochrane

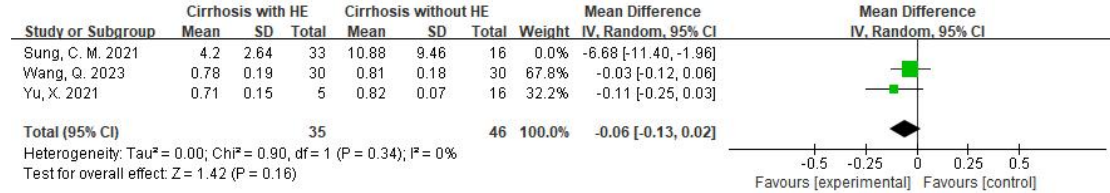
1	microbiomes:ti,ab,kw OR 'gastrointestinal microbiomes':ti,ab,kw OR 'microbiome, gastrointestinal':ti,ab,kw OR 'gut microbiome':ti,ab,kw OR 'gut microbiomes':ti,ab,kw OR 'microbiome, gut':ti,ab,kw OR 'gut microflora':ti,ab,kw OR 'microflora, gut':ti,ab,kw OR 'gut microbiota':ti,ab,kw OR 'gut microbiotas':ti,ab,kw OR	11840
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'microbiota, gut':ti,ab,kw OR 'gastrointestinal flora':ti,ab,kw
OR 'flora, gastrointestinal':ti,ab,kw OR 'gut flora':ti,ab,kw OR
'flora, gut':ti,ab,kw OR 'gastrointestinal microbiota':ti,ab,kw
OR 'gastrointestinal microbiotas':ti,ab,kw OR 'microbiota,
gastrointestinal':ti,ab,kw OR 'gastrointestinal microbial
community':ti,ab,kw OR 'gastrointestinal microbial
communities':ti,ab,kw OR 'microbial community,
gastrointestinal':ti,ab,kw OR 'gastrointestinal
microflora':ti,ab,kw OR 'microflora, gastrointestinal':ti,ab,kw
OR 'gastric microbiome':ti,ab,kw OR 'gastric
microbiomes':ti,ab,kw OR 'microbiome, gastric':ti,ab,kw OR
'intestinal microbiome':ti,ab,kw OR 'intestinal
microbiomes':ti,ab,kw OR 'microbiome, intestinal':ti,ab,kw
OR 'intestinal microbiota':ti,ab,kw OR 'intestinal
microbiotas':ti,ab,kw OR 'microbiota, intestinal':ti,ab,kw OR
'intestinal microflora':ti,ab,kw OR 'microflora,
intestinal':ti,ab,kw OR 'intestinal flora':ti,ab,kw OR 'flora,
intestinal':ti,ab,kw OR enterobacteriaceae:ti,ab,kw OR
'bacteria, enteric':ti,ab,kw

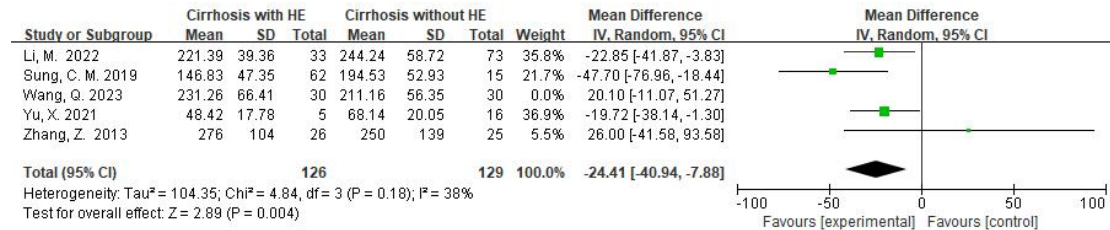
2 'hepatic encephalopathy':ti,ab,kw OR 'encephalopathies, 2503
hepatic':ti,ab,kw OR 'hepatic encephalopathies':ti,ab,kw
OR 'encephalopathy, hepatic':ti,ab,kw OR 'portal-systemic
encephalopathy':ti,ab,kw OR 'portal
systemicencephalopathy':ti,ab,kw OR 'encephalopathy,
portal-systemic':ti,ab,kw OR 'encephalopathies,
portal-systemic':ti,ab,kw OR 'encephalopathy, portal
systemic':ti,ab,kw OR 'portal-systemic
encephalopathies':ti,ab,kw OR
'encephalopathy,portosystemic':ti,ab,kw OR 'hepatocerebral

gastrointestinal)) OR AB=(gastric microbiome)) OR
AB=(gastric microbiomes)) OR AB=(microbiome, gastric))
OR AB=(intestinal microbiome)) OR AB=(intestinal
microbiomes)) OR AB=(microbiome, intestinal)) OR
AB=(intestinal microbiota)) OR AB=(intestinal
microbiotas)) OR AB=(microbiota, intestinal)) OR
AB=(intestinal microflora)) OR AB=(microflora, intestinal))
OR AB=(intestinal flora)) OR AB=(flora, intestinal)) OR
AB=(enterobacteriaceae)) OR AB=(bacteria, enteric)

2 (((((((((((((((((((((((((((((AB=(Hepatic Encephalopathy)) OR 14151
AB=(Encephalopathies, Hepatic)) OR AB=(Hepatic
Encephalopathies)) OR AB=(Encephalopathy, Hepatic)) OR
AB=(Portal-Systemic Encephalopathy)) OR AB=(Portal
Systemic Encephalopathy)) OR AB=(Encephalopathy,
Portal-Systemic)) OR AB=(Encephalopathies,
Portal-Systemic)) OR AB=(Encephalopathy, Portal Systemic))
OR AB=(Portal-Systemic Encephalopathies)) OR
AB=(Encephalopathy, Portosystemic)) OR
AB=(Hepatocerebral Encephalopathy)) OR
AB=(Portosystemic Encephalopathy)) OR
AB=(Encephalopathies, Portosystemic)) OR
AB=(Portosystemic Encephalopathies)) OR
AB=(Encephalopathy, Hepatocerebral)) OR
AB=(Encephalopathies, Hepatocerebral)) OR
AB=(Hepatocerebral Encephalopathies)) OR AB=(Hepatic
Coma)) OR AB=(Coma, Hepatic)) OR AB=(Comas, Hepatic))
OR AB=(Hepatic Comas)) OR AB=(Hepatic Stupor)) OR
AB=(Hepatic Stupors)) OR AB=(Stupor, Hepatic)) OR
AB=(Stupors, Hepatic)) OR AB=(Fulminant Hepatic Failure



Supplementary Figure 1 Alpha diversity index (Simpson) of liver cirrhosis with and without hepatic encephalopathy.



Supplementary Figure 2 Alpha diversity index (Chao 1) of liver cirrhosis with and without hepatic encephalopathy.