Supplemental Methods

The process of therapy

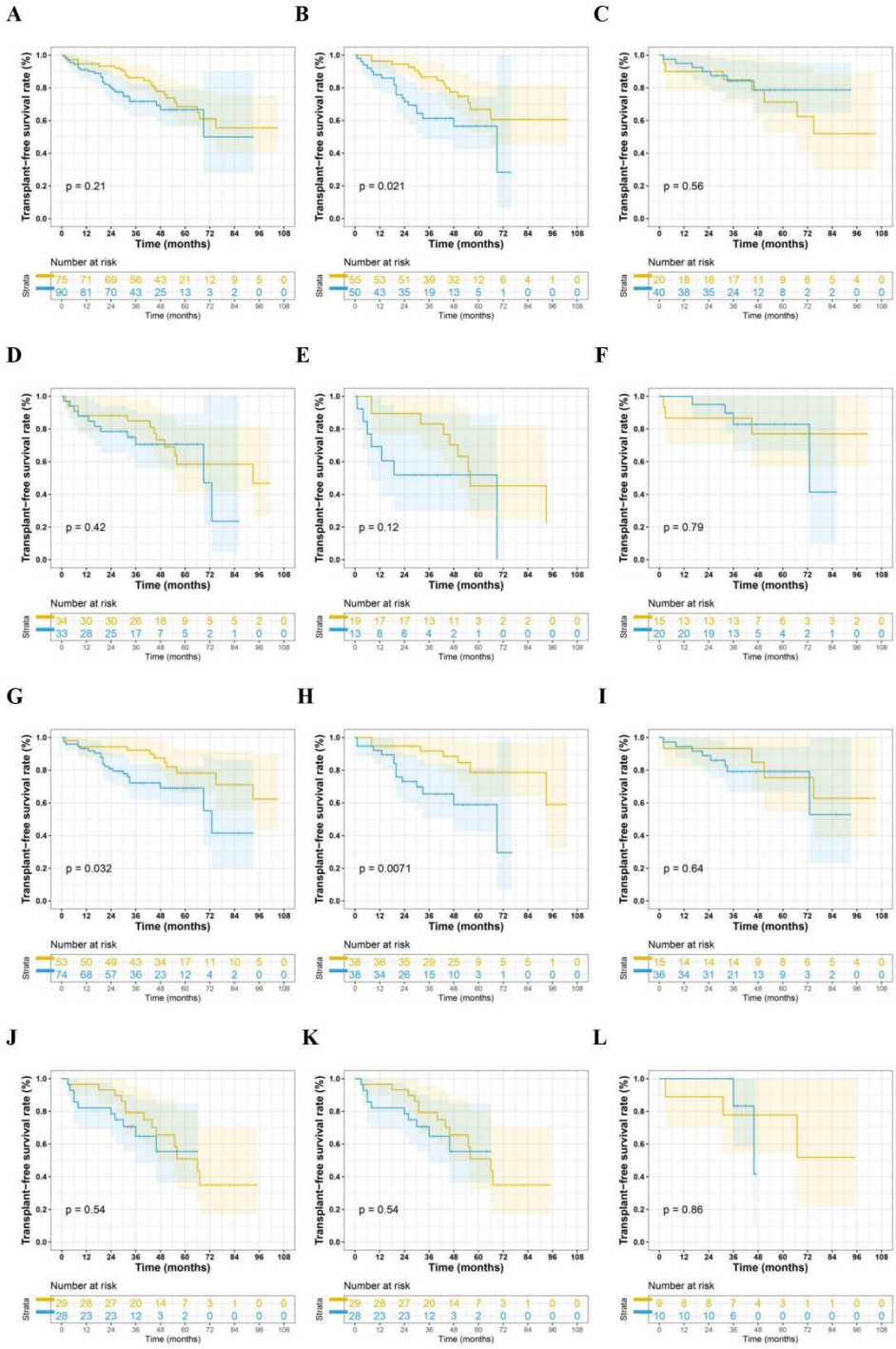
Endoscopic therapy: Endoscopic therapy included endoscopic injection sclerotherapy, N-buty-l-cyanoacrylate injection and endoscopic varices ligation. The patients had recheck endoscopies every 4-8 wk until the varices were eradicated or until they had turned into F1, and endoscopic treatment was performed again if necessary.

nonselective β-blockers uasage: Carvedilol was started at 6.25 mg every day, and propranolol was started 10 mg twice a day, and the amount was gradually increased to the maximum tolerable dose (Carvedilol mean dose: 12.5mg in the morning and 6.25 mg in the evening; propranolol mean dose: 30 mg twice a day). If adverse reactions (blood pressure less than 90/60 mmHg or heart rate less than 55 beats per minute) occurred, the dosage was reduced or discontinued.

Covered transjugular intrahepatic portosystemic shunt: the Rups100 catheter sheath was routinely delivered into the hepatic vein. Indirect portal vein angiography was performed via the superior mesenteric artery. The Rups100 catheter sheath was delivered to the main portal vein through puncture of the intrahepatic portal vein branch from the hepatic vein and direct portal vein angiography was performed. A covered stent (8 mm) (Fluency; Bard, Murray Hill, NJ, United States) was inserted to the appropriate position in the liver with an additional bare-metal stent (Luminexx; Bard) when necessary to achieve optimal positioning of the covered stent or a 8-mm viatorr stent (Viatorr; Gore, CA, United States) was used. The balloon stent was expanded, portal vein angiography was performed again.

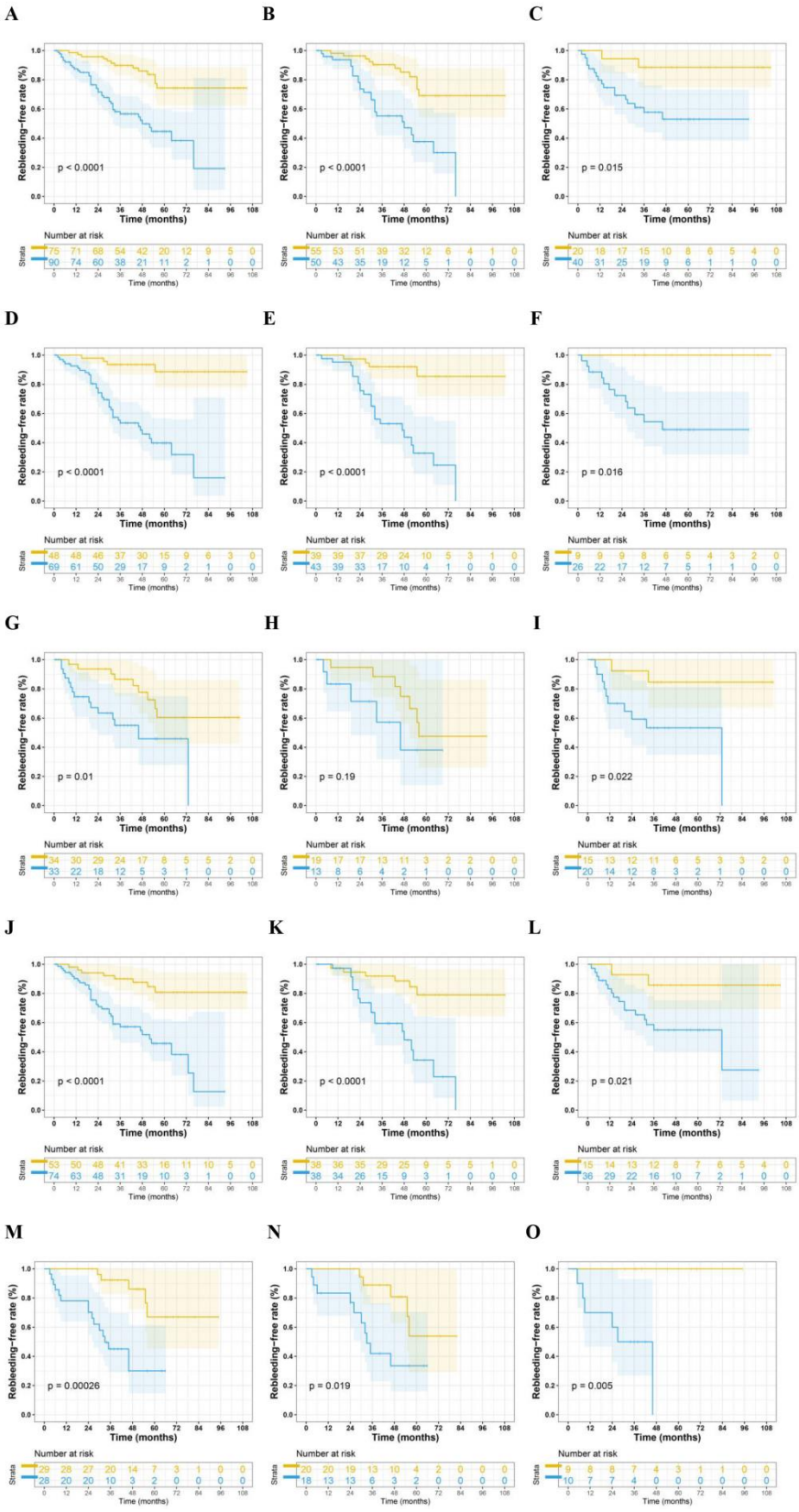
Patients accepting transjugular intrahepatic portosystemic shunt (TIPS) in our center took lactulose orally for 1 mo after TIPS, and were told to maintain

bowel movements 2-3 times a day and take lactulose orally as needed at the follow-up site. Rifaximin was evaluated on the basis of plasma ammonia results on the first day after TIPS. If plasma ammonia was higher than the upper limit of normal on the first day after TIPS, rifaximin was usually 200 mg twice a day, and rifaximin usage was adjusted according to the plasma ammonia level at each follow-up site.



Supplementary Figure 1 Comparison of transplant-free survival rates between the patients with endoscopic therapy+nonselective β-blockers and covered transjugular intrahepatic portosystemic shunt during the whole follow-up period. A: Comparison of transplant-free survival rates between the patients with endoscopic therapy+nonselective β-blockers (NSBBs) and covered transjugular intrahepatic portosystemic shunt (TIPS) for the patients

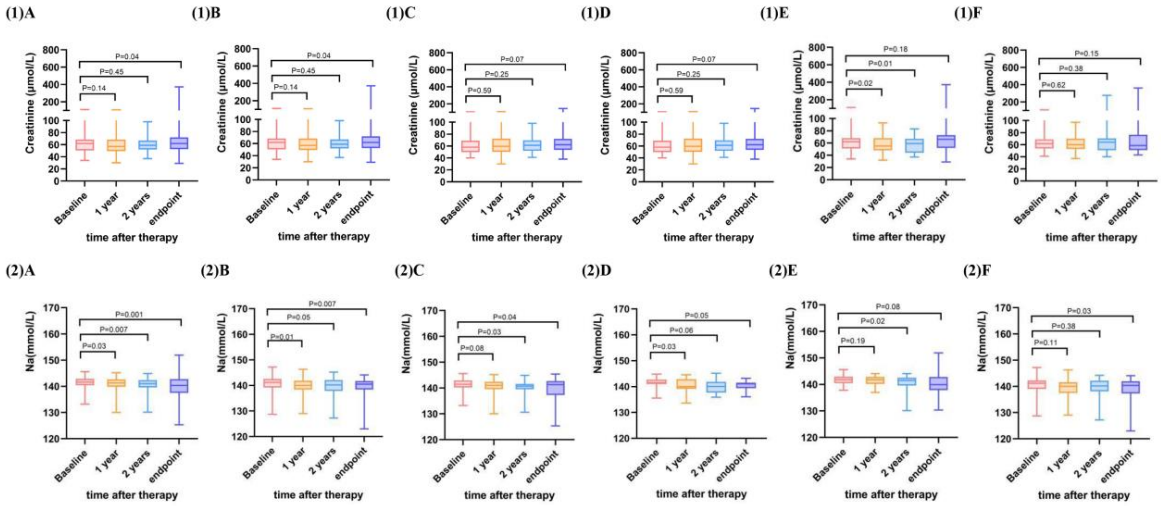
without stents; B: Comparison of transplant-free survival rates between the patients with endoscopic therapy+NSBBs and covered TIPS on high-hepatic-venous-pressure-gradient (HVPG) for the patients without stents; C: Comparison of transplant-free survival rates between the patients with endoscopic therapy+NSBBs and covered TIPS on low-HVPG for the patients without stents; D: Comparison of transplant-free survival rates between the patients with endoscopic therapy+NSBBs and covered TIPS for PH unrelated to viral cirrhosis and alcoholic cirrhosis; E: Comparison of transplant-free survival rates between the patients with endoscopic therapy+NSBBs and covered TIPS on high-HVPG for PH unrelated to viral cirrhosis and alcoholic cirrhosis; F: Comparison of transplant-free survival rates between the patients with endoscopic therapy+NSBBs and covered TIPS on low-HVPG for PH unrelated to viral cirrhosis and alcoholic cirrhosis; G: Comparison of transplant-free survival rates between the patients with endoscopic therapy+NSBBs and covered TIPS for the patients without type 2 gastroesophageal varices (GOV2) or isolated gastric varices (IGV); H: Comparison of transplant-free survival rates between the patients with endoscopic therapy+NSBBs and covered TIPS on high-HVPG for the patients without GOV2 or IGV; I: Comparison of transplant-free survival rates between the patients with endoscopic therapy+NSBBs and covered TIPS on low-HVPG for the patients without GOV2 or IGV; J: Comparison of transplant-free survival rates between the patients with endoscopic therapy+NSBBs and covered TIPS for the patients with GOV2 and/or IGV; K: Comparison of transplant-free survival rates between the patients with endoscopic therapy+NSBBs and covered TIPS on high-HVPG for the patients with GOV2 and/or IGV; L: Comparison of transplant-free survival rates between the patients with endoscopic therapy+NSBBs and covered TIPS on low-HVPG for the patients with GOV2 and/or IGV.



Supplementary Figure 2 Comparison of the rebleeding-free rate between the patients with endoscopic therapy+nonselective β-blockers and covered transjugular intrahepatic portosystemic shunt. A: Comparison of the

rebleeding-free rates between the patients with endoscopic therapy+nonselective β-blockers (NSBBs) and covered transjugular intrahepatic portosystemic shunt (TIPS) for the patients without shunt in hepatic vein; B: Comparison of the rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS on high-hepatic-venous-pressure-gradient (HVPG) for the patients without shunt in hepatic vein; C: Comparison of the rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS on low-HVPG for the patients without shunt in hepatic vein; D: Comparison of rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS for the patients with viral cirrhosis and alcoholic cirrhosis; E: Comparison of rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS on high-HVPG for the patients with viral cirrhosis and alcoholic cirrhosis; F: Comparison of rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS on low-HVPG for the patients with viral cirrhosis and alcoholic cirrhosis; G: Comparison of the rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS for portal hypertension (PH) unrelated to viral cirrhosis and alcoholic cirrhosis; H: Comparison of the rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS on high-HVPG for PH unrelated to viral cirrhosis and alcoholic cirrhosis; I: Comparison of the rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS on low-HVPG for PH unrelated to viral cirrhosis and alcoholic cirrhosis; J: Comparison of the rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS for the patients without type 2 gastroesophageal varices (GOV2) or isolated gastric varices (IGV); K: Comparison of rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS on high-HVPG for the patients without GOV2 or IGV; L: Comparison of rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS on

low-HVPG for the patients without GOV2 or IGV; M: Comparison of the rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS for the patients with GOV2 and/or IGV; N: Comparison of rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS on high-HVPG for the patients with GOV2 and/or IGV; O: Comparison of rebleeding-free rates between the patients with endoscopic therapy+NSBBs and covered TIPS on low-HVPG for the patients with GOV2 and/or IGV.



Supplementary Figure 3 Changes in creatine and serum Na^+ after therapy at baseline, 1-year follow-up, 2-year follow-up and the endpoint of follow-up. 1A: Changes in creatine after endoscopy therapy at baseline, 1-year follow-up, 2-year follow-up and the endpoint of follow-up in total; 1B: Changes in creatine after covered transjugular intrahepatic portosystemic shunt (TIPS) at baseline, 1-year follow-up, 2-year follow-up and the endpoint of follow-up in total; 1C: Changes in creatine after endoscopy therapy at baseline, 1-year follow-up, 2-year follow-up and the endpoint of follow-up in the low-hepatic-venous-pressure-gradient (HVPG) tier; 1D: Changes in creatine after covered TIPS at baseline, 1-year follow-up, 2-year follow-up and the endpoint of follow-up in the low-HVPG tier; 1E: Changes in creatine after endoscopy therapy at baseline, 1-year follow-up, 2-year follow-up and the endpoint of follow-up in the high-HVPG tier; 1F: Changes in creatine after covered TIPS at baseline, 1-year follow-up, 2-year follow-up and the endpoint of follow-up in the high-HVPG tier; 2A: Changes in Na^+ after endoscopy therapy at baseline, 1-year follow-up, 2-year follow-up and the endpoint of follow-up in total; 2B: Changes in Na^+ after the covered TIPS at baseline, 1-year follow-up, 2-year follow-up and endpoint of follow-up in total; 2C: Changes in Na^+ after endoscopy therapy at baseline, 1-year follow-up, 2-year follow-up and the endpoint of follow-up in the low-HVPG tier; 2D: Changes in Na^+ after the covered TIPS at baseline, 1-year follow-up, 2-year follow-up and endpoint of

follow-up in the low-HVPG tier; 2E: Changes in Na^+ after endoscopy therapy at baseline, 1-year follow-up, 2-year follow-up and the endpoint of follow-up in the high-HVPG tier; 2F: Changes in Na^+ after the covered TIPS at baseline, 1-year follow-up, 2-year follow-up and endpoint of follow-up in the high-HVPG tier.