TIPS: Indications et résultats

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Inserm

ICAN

IHU-A-ICM Paris Institute of Translational Neurosciences

crsa CENTRE DE RECHERCHE SAINT-ANTOINE | PARIS

BLIPS

Liens d’intérêt

Speaker: Gore, Abbvie, Gilead, Genfit
Travel grants: Abbvie, Gilead
Consulting: Gilead, Genfit, Alfasigma, satellite Bio

STGE

REVIEW

Liver INTERNATIONAL WILEY

French guidelines on TIPS: Indications and modalities

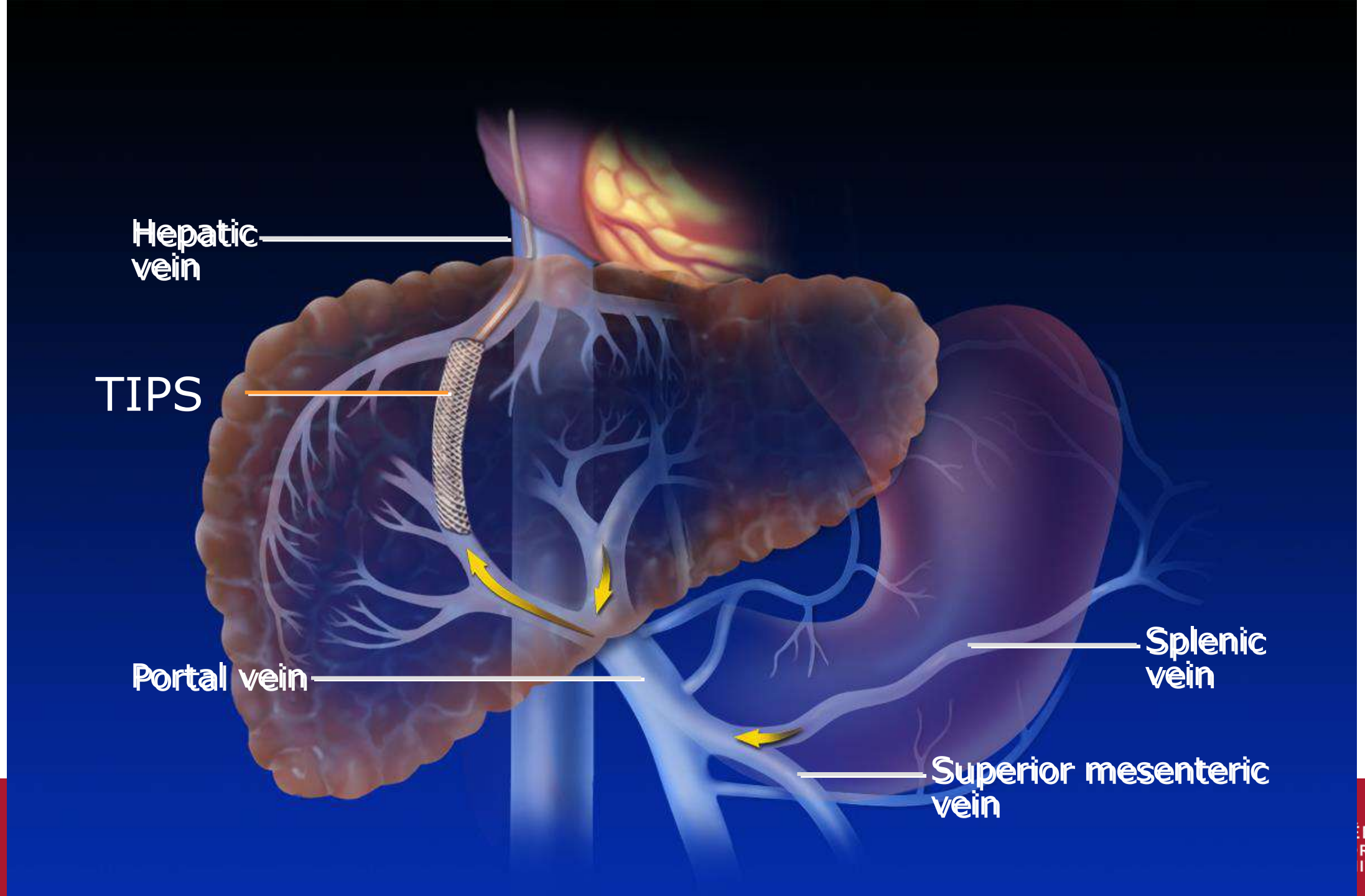
Hélène Larrue[1] | Manon Allaire[2] | Delphine Weil-Verhoeven[3,4] | Sandrine Barge[5] | Dominique Thabut[2] | Audrey Payance[6] | Lucile Moga[6] | Caroline Jézéquel[7] | Florent Artru[7] | Isabelle Archambeaud[8] | Laure Elkrief[9] | Frédéric Oberti[10] | Charles Roux[11] | Wim Laleman[12] | Marika Rudler[2] | Sébastien Dharancy[13] | Nolwenn Laborde[14] | Anne Minello[15] | Thomas Mouillot[15] | Elvire Desjonquères[16] | Line Caroll Ntandja Wandji[17] | Marc Bourlière[18] | Nathalie Ganne-Carrié[19] | Christophe Bureau[1] | for the Groupe collaboratif AFEF

Clinical Practice Guidelines

JOURNAL OF HEPATOLOGY

EASL Clinical Practice Guidelines on TIPS☆

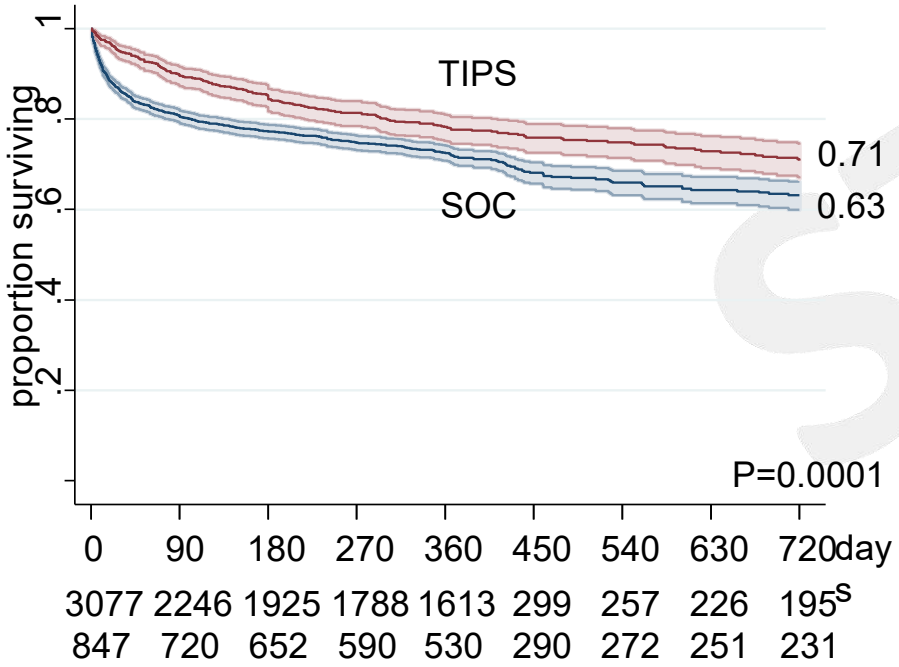
European Association for the Study of the Liver*

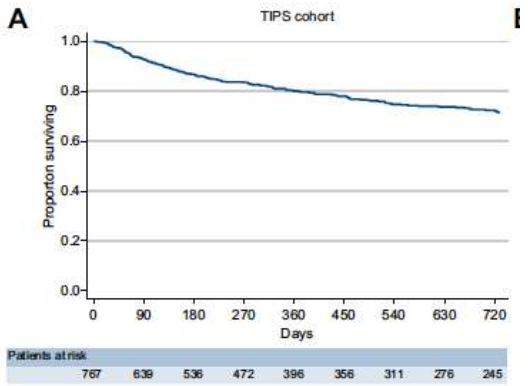

Hepatic vein
TIPS
Portal vein
Splenic vein
Superior mesenteric vein

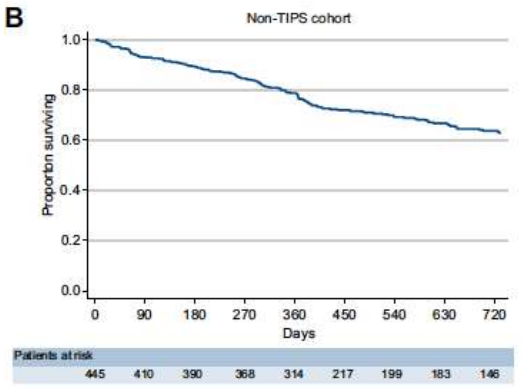
Survival after TIPS for bleeding/ascites

IPD of 2 large multicenter studies including 1614 pts (bleeding & ascites)

A **All patients: 12 studies**







- Bleeding 80%
- Ascites 60%

Larrue H et al., J Hepatol 2023

D'Amico G et al., J Hepatol 2021

STG

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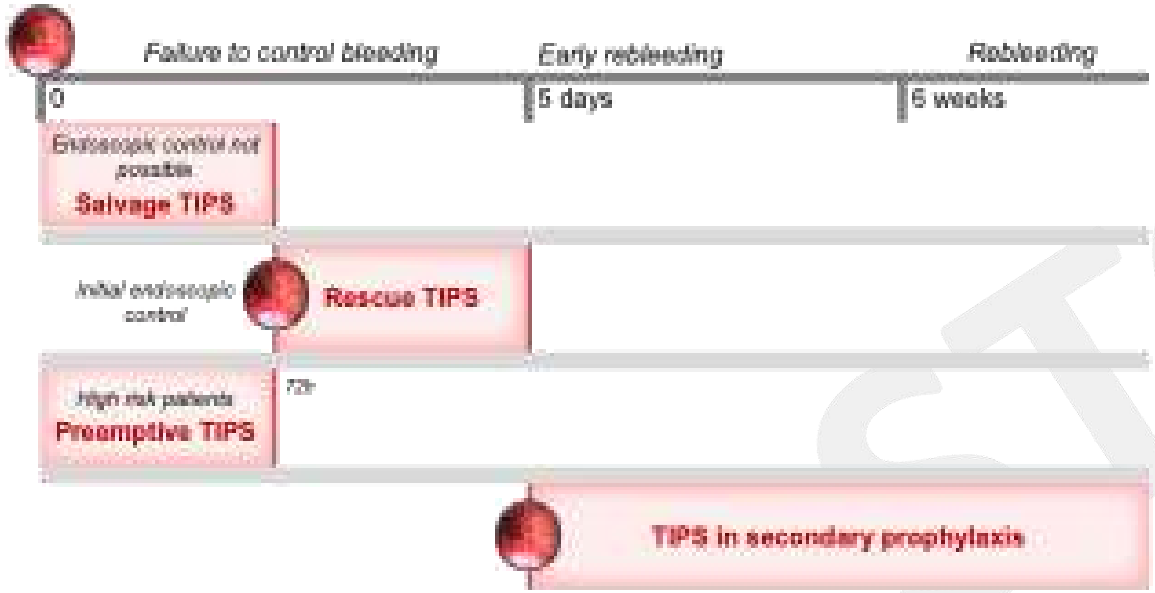
Indications of TIPS: bleeding & ascites

- Bleeding



Urgent

Elective

- Recurrent or refractory ascites

prevented by medical therapy. The International Ascites Club[152,153] defined *refractory* ascites as:

- resistant to diuretics in the absence of response or in the case of early recurrence of ascites under intensive diuretic therapy (400 mg/day spironolactone and 160 mg/day furosemide) combined with sodium restriction (less than 90 mmol/day of salt for at least 1 week), or
- intractable when a complication directly attributed to diuretics occurs, such as HE, acute renal failure, hyponatremia, or dyskalemia.

Ascites is considered *recurrent* when three large-volume paracenteses (LVPs) are required within a 12-month period.

Elective

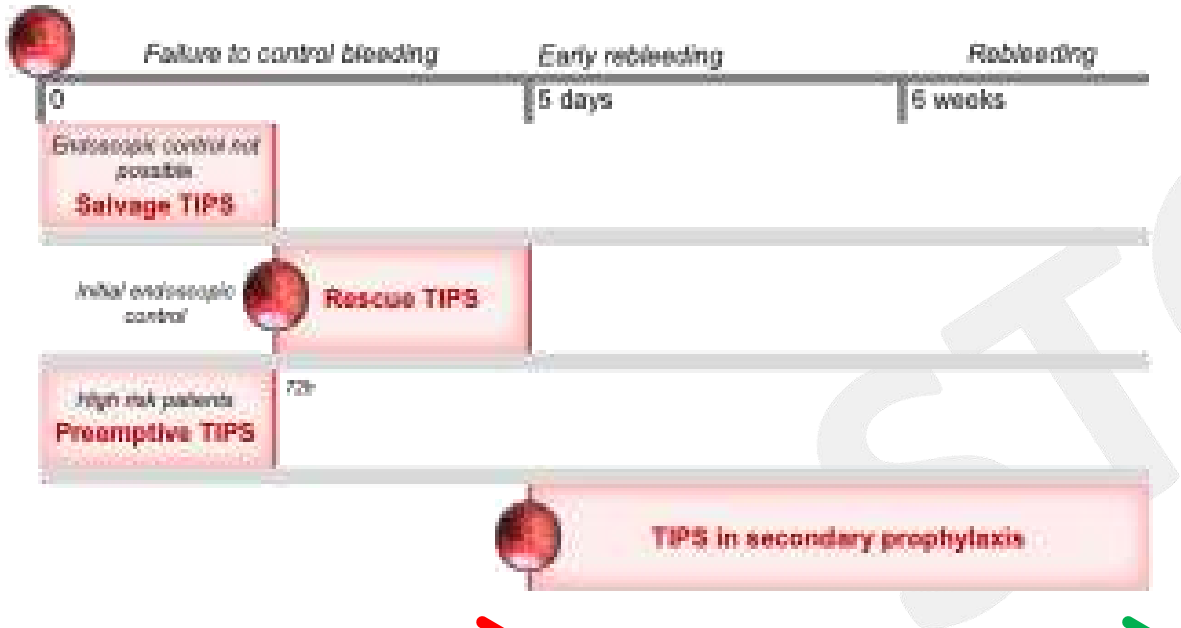
- Hydrothorax
- HRS-NAKI

- **Others**
- Pre-operative, PVT

STGI

Indications of TIPS: bleeding & ascites

➢ Bleeding



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Elective

De Franchis R et al., J Hepatol 2022
EASL CPG, J Hepatol 2025

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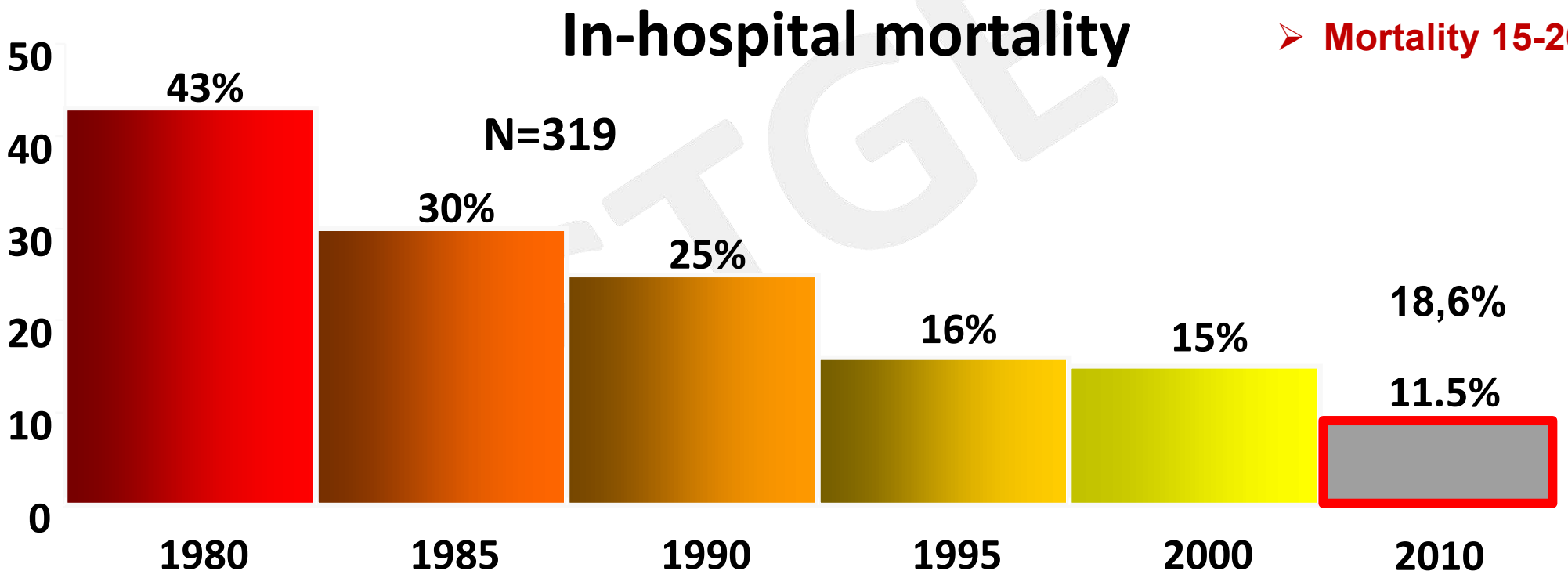
Is Variceal Bleeding Still a Severe Disease in 2026 ?



- Mortality 15-20% 6 weeks

Carbonell et al., Hepatology 2004

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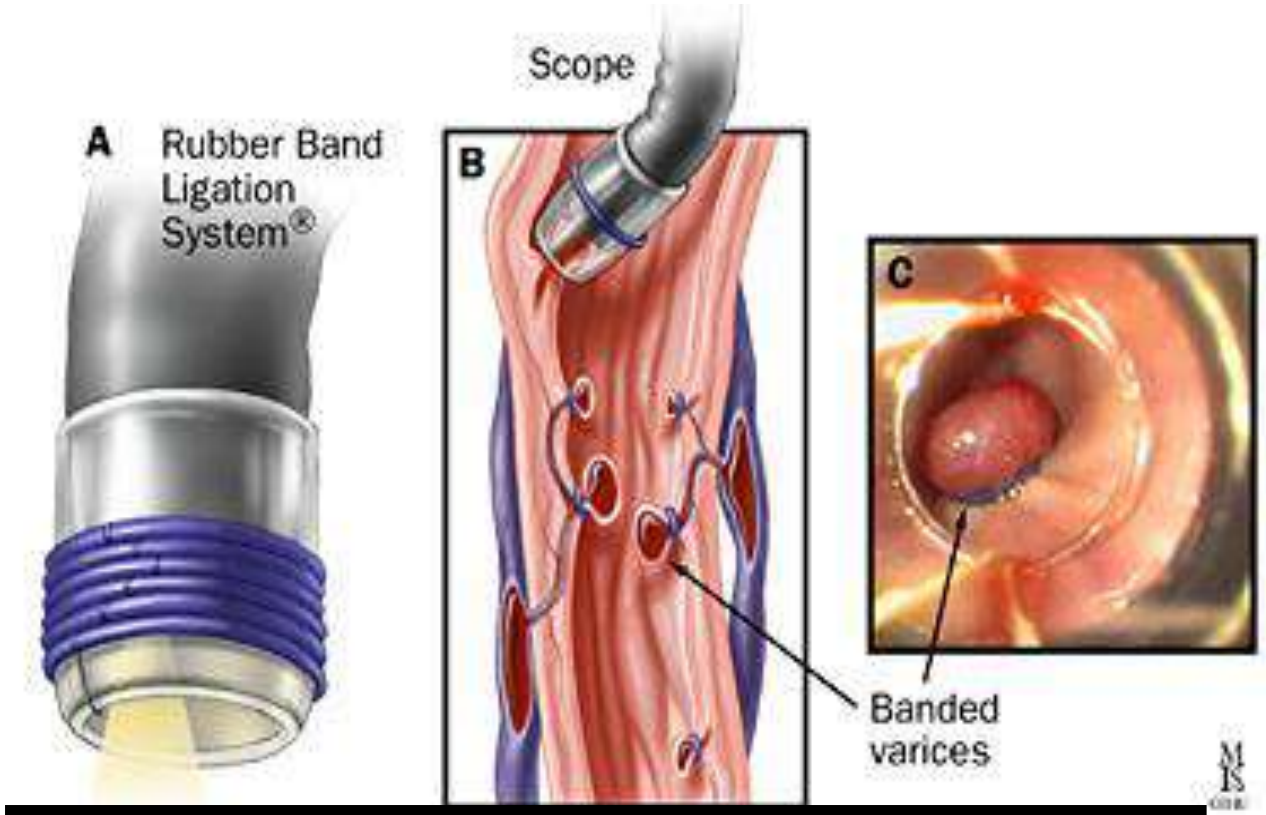
Outcome after first-line treatment

Variceal Bleeding

1st line Ttt:
Vasoactive drugs + antibioprophylaxis + Endoscopic therapy

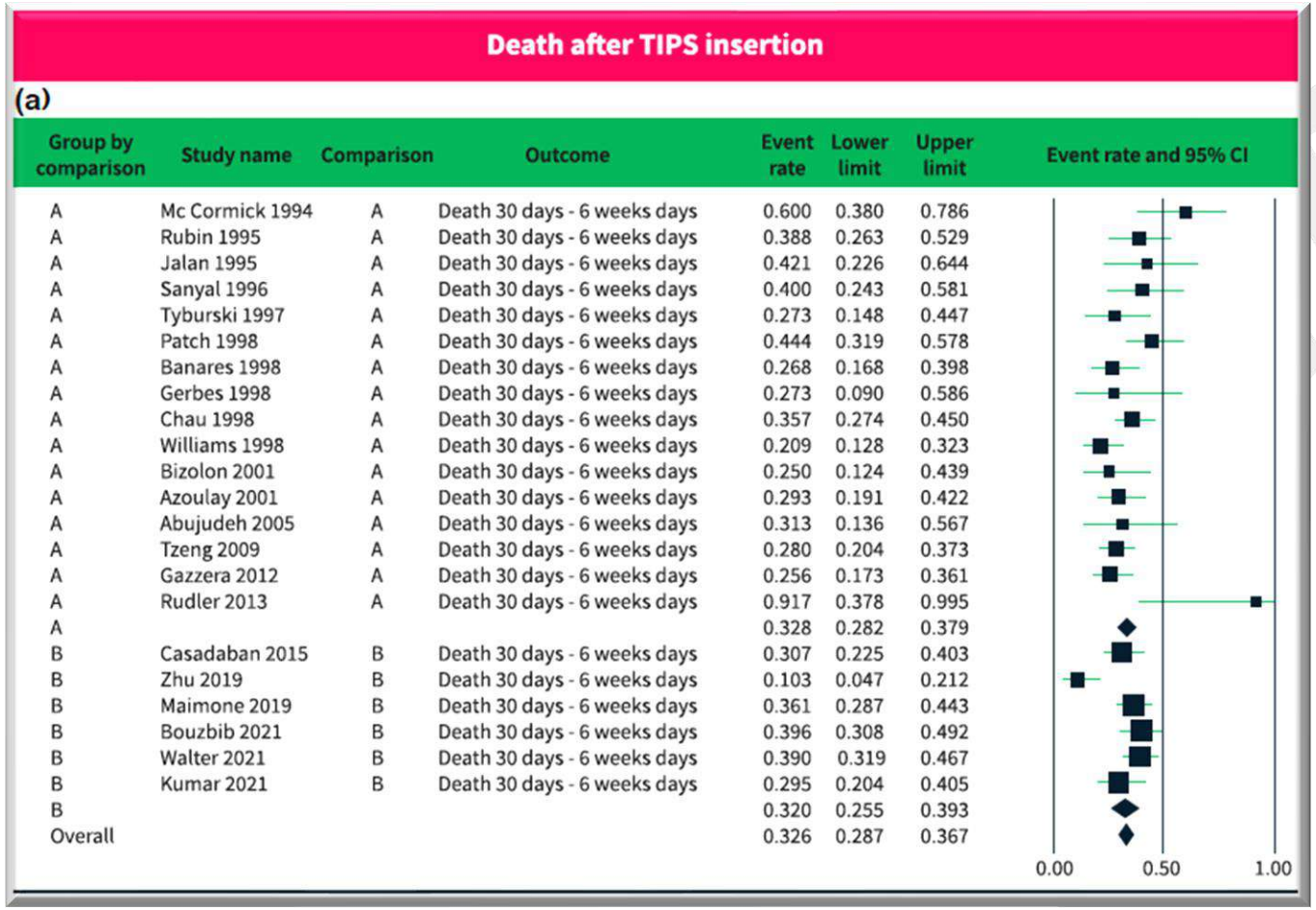
- **Success: 80-90%**
- **6w-survival: 90%**



- **Failure: 10-20%**
- **Severe liver disease: Child-Pugh C, updated MELD**
- **Active bleeding at endoscopy**
- **HVPG > 20 mmHg**

Salvage/rescue TIPS

- After Blakemore/SEMS, death at 6 weeks



Death after TIPS insertion

(a)

Group by comparison	Study name	Comparison	Outcome	Event rate	Lower limit	Upper limit
A	Mc Cormick 1994	A	Death 30 days - 6 weeks days	0.600	0.380	0.786
A	Rubin 1995	A	Death 30 days - 6 weeks days	0.388	0.263	0.529
A	Jalan 1995	A	Death 30 days - 6 weeks days	0.421	0.226	0.644
A	Sanyal 1996	A	Death 30 days - 6 weeks days	0.400	0.243	0.581
A	Tyburski 1997	A	Death 30 days - 6 weeks days	0.273	0.148	0.447
A	Patch 1998	A	Death 30 days - 6 weeks days	0.444	0.319	0.578
A	Banares 1998	A	Death 30 days - 6 weeks days	0.268	0.168	0.398
A	Gerbes 1998	A	Death 30 days - 6 weeks days	0.273	0.090	0.586
A	Chau 1998	A	Death 30 days - 6 weeks days	0.357	0.274	0.450
A	Williams 1998	A	Death 30 days - 6 weeks days	0.209	0.128	0.323
A	Bizolon 2001	A	Death 30 days - 6 weeks days	0.250	0.124	0.439
A	Azoulay 2001	A	Death 30 days - 6 weeks days	0.293	0.191	0.422
A	Abujudeh 2005	A	Death 30 days - 6 weeks days	0.313	0.136	0.567
A	Tzeng 2009	A	Death 30 days - 6 weeks days	0.280	0.204	0.373
A	Gazzera 2012	A	Death 30 days - 6 weeks days	0.256	0.173	0.361
A	Rudler 2013	A	Death 30 days - 6 weeks days	0.917	0.378	0.995
A				0.328	0.282	0.379
B	Casadaban 2015	B	Death 30 days - 6 weeks days	0.307	0.225	0.403
B	Zhu 2019	B	Death 30 days - 6 weeks days	0.103	0.047	0.212
B	Maimone 2019	B	Death 30 days - 6 weeks days	0.361	0.287	0.443
B	Bouzbib 2021	B	Death 30 days - 6 weeks days	0.396	0.308	0.492
B	Walter 2021	B	Death 30 days - 6 weeks days	0.390	0.319	0.467
B	Kumar 2021	B	Death 30 days - 6 weeks days	0.295	0.204	0.405
B				0.320	0.255	0.393
Overall				0.326	0.287	0.367

Event rate and 95% CI

0.00 0.50 1.00

- n = 1430
- Bleeding control 90 %
- Mortality ≃ 33 %

Weichselbaum L et al., UEG journal 2022

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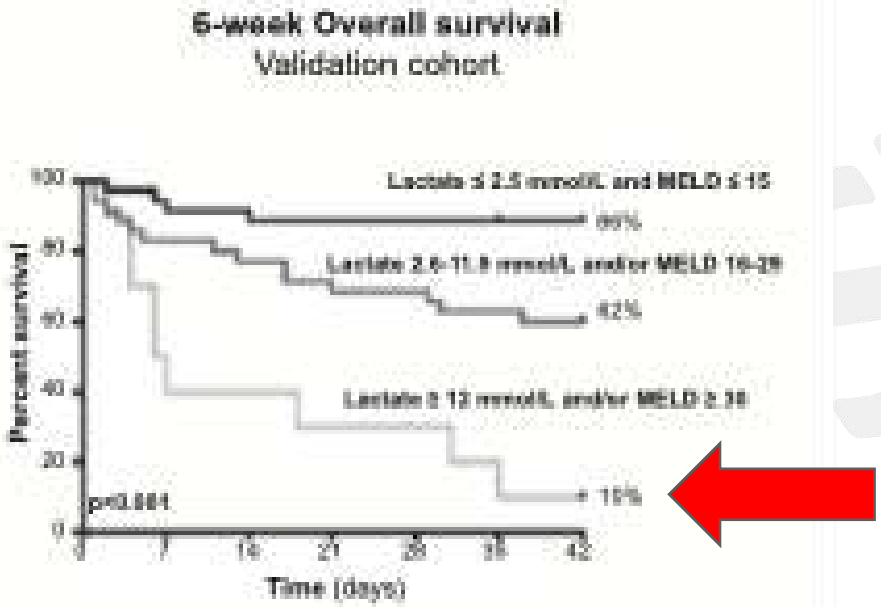
Salvage/rescue TIPS

- Retrospective study, n=164



Futility criteria (2025)

In patients with cirrhosis and failure to control PH-related AVB, when should a salvage/rescue TIPS not be used as it may not improve outcomes compared to alternative treatments?

Recommendation

- A salvage/rescue TIPS cannot be recommended in patients with cirrhosis and failure to control PH-related AVB if they have a MELD score ≥30 or lactate ≥12 mmol/L or ACLF grade 3b, which may indicate a poor prognosis even after the procedure. This is particularly true for patients who are not suitable candidates for LT **(LoE 3, weak recommendation, strong consensus).**

EASL CPG, J Hepatol 2025
Walter A et al., Hepatology 2021

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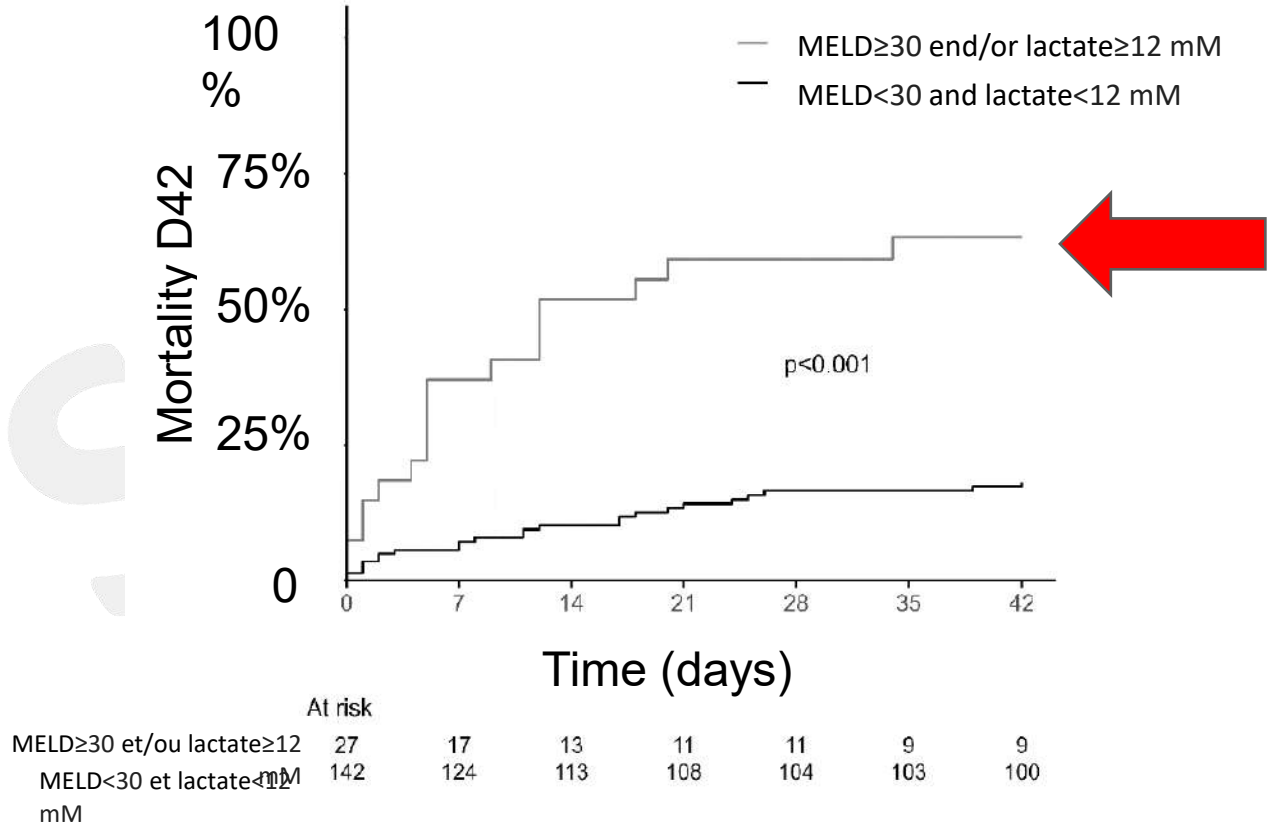
Salvage/rescue TIPS

- 177 pts
- EUROTIPS prospective cohort
- 79% refractory bleeding

- **Expansion of criteria ?**
- **Pas de contre-indication absolue au TIPS de sauvetage**



37% survival

Bouzbib C et al., AFEF 2025

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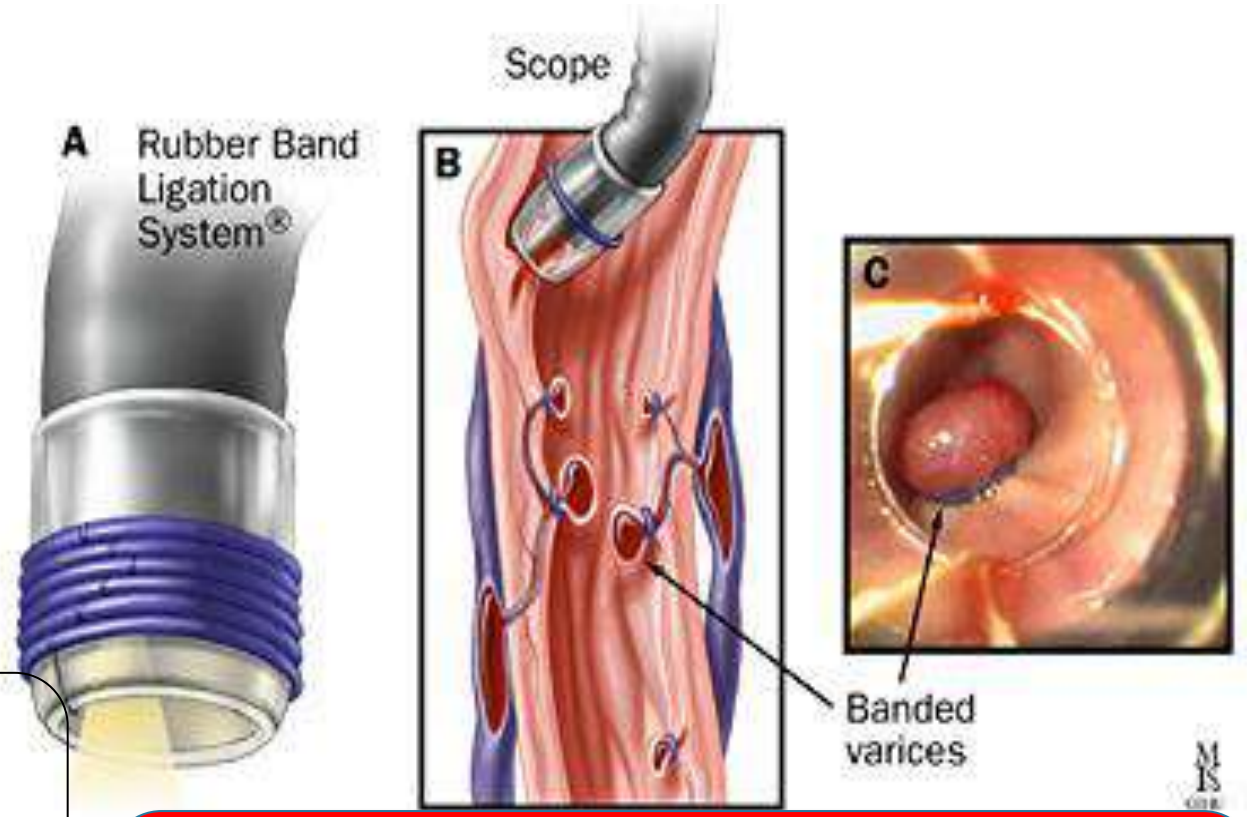
Outcome after first-line treatment

Variceal Bleeding

1st line Ttt:
Vasoactive drugs + antibioprophylaxis
+ Endoscopic therapy

2nd line:
Blakemore/stents
TIPS



➢ **6w-mortality: 30%**

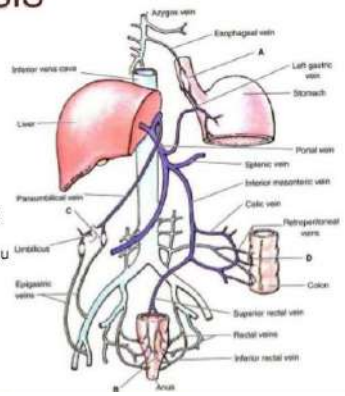
Proof of concept for preemptive TIPS

Emergency Portacaval Shunt: A Comparative Study of Shunt, Varix Ligation and Nonsurgical Treatment of Bleeding Esophageal Varices in Unselected Patients with Cirrhosis

MARSHALL J. ORLOFF, M.D.*

From the Departments of Surgery, Harbor General Hospital, and the UCLA School of Medicine, Torrance, California

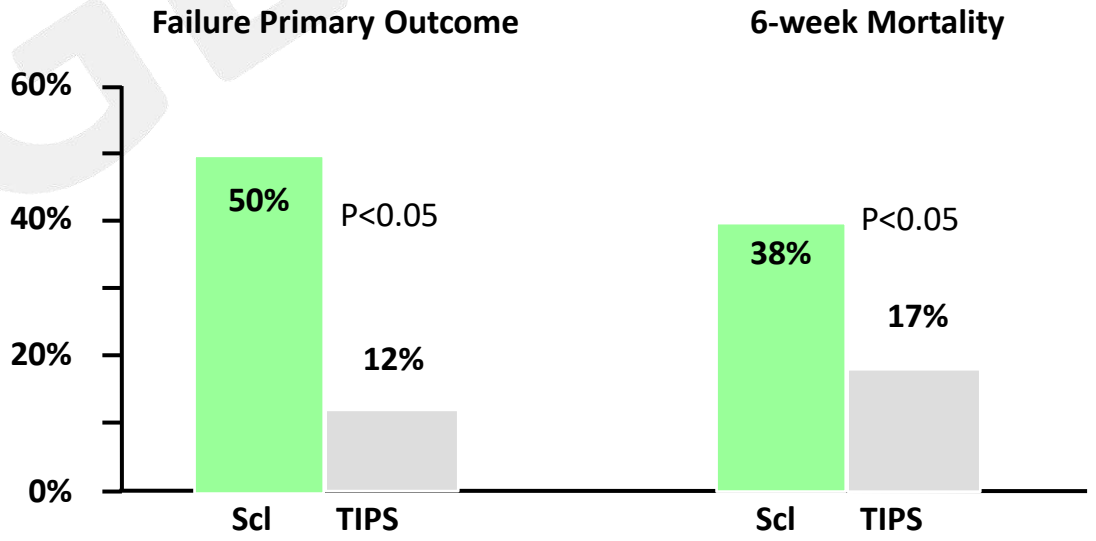
SITES OF PORTACAVAL ANASTOMOSIS



Five sites of portal/systemic circulation :
1. Lower third of the Esophagu
2. Paraumbilical Area
3. Upper end of Anal canal
4. Retroperitonial
5. Bare area of liver

HVPG>20 mmHg

52 patients



Orloff, Br J Surgery 1967

Monescillo et al., Hepatology 2004

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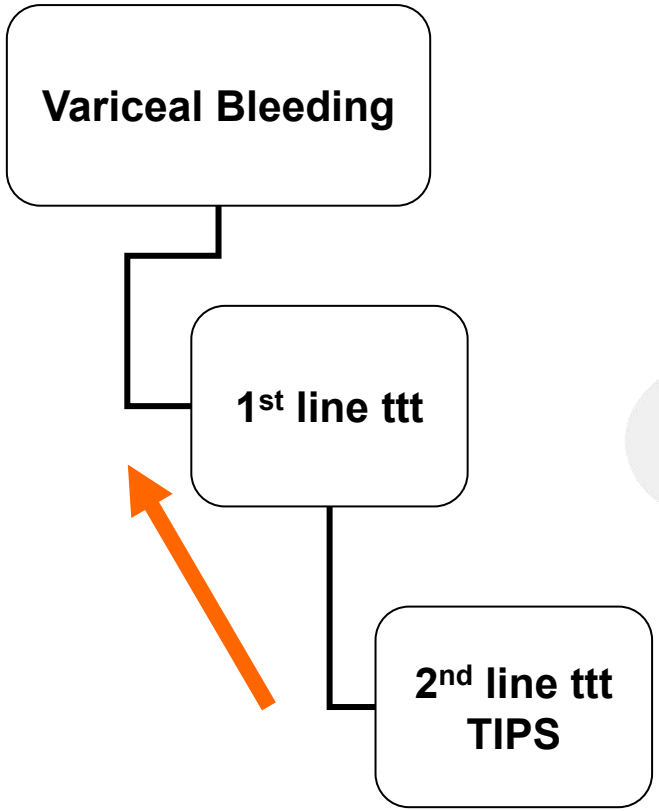
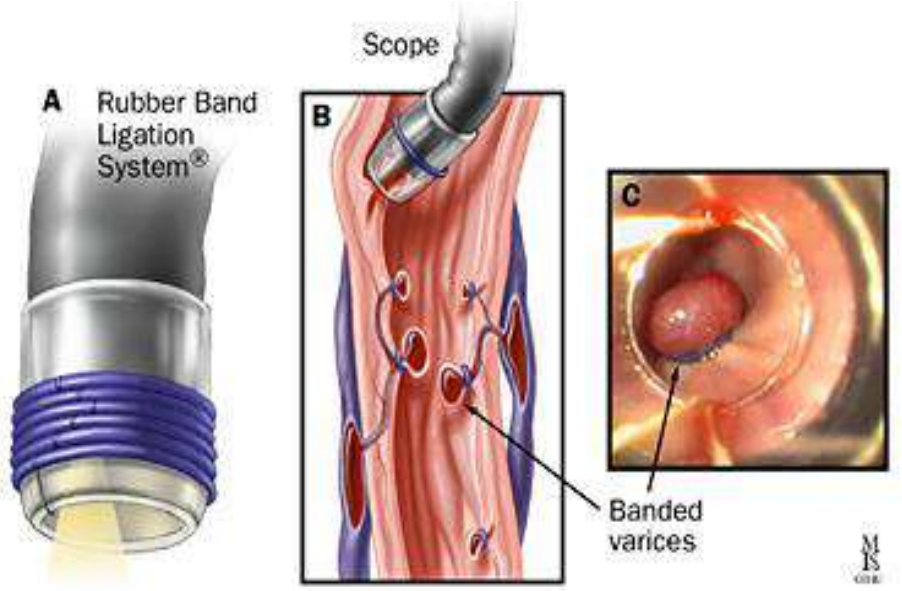
Preemptive TIPS: the concept





- In high-risk patients
- AFTER stopping bleeding
- Within 24-72 hrs

- **Preemptive TIPS (and not early) is the preferred term**

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Preemptive TIPS: the concept

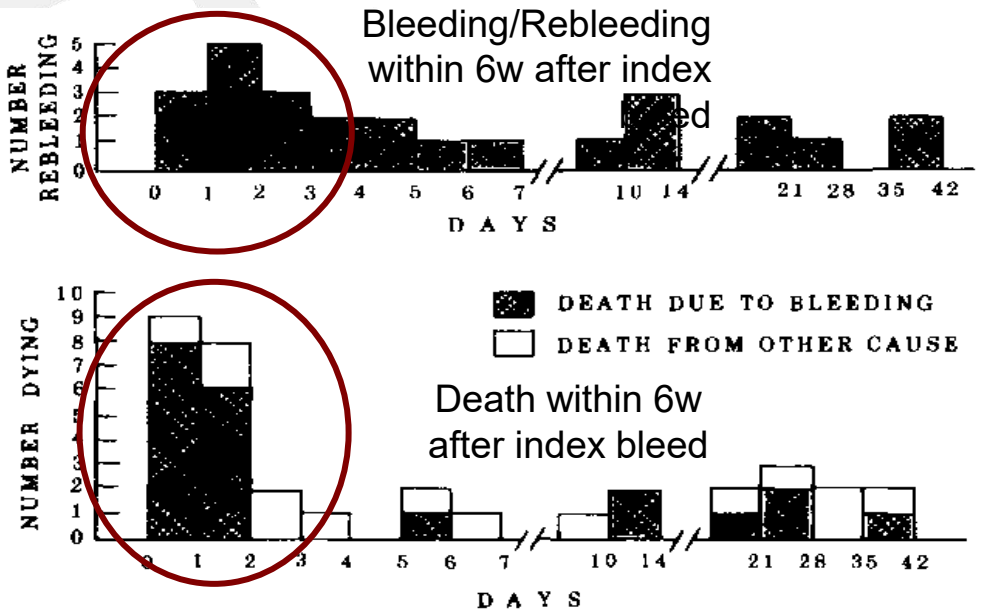
P-TIPS: As early as possible!

PreemptiveTIPS

- TIPS placed in a high-risk patient
- After stabilizing the patient
- After hemostatic treatment with vasoactive drugs + EBL
- Before failure arises
- Early **As earliest as possible!!**

The Course of Patients After Variceal Hemorrhage

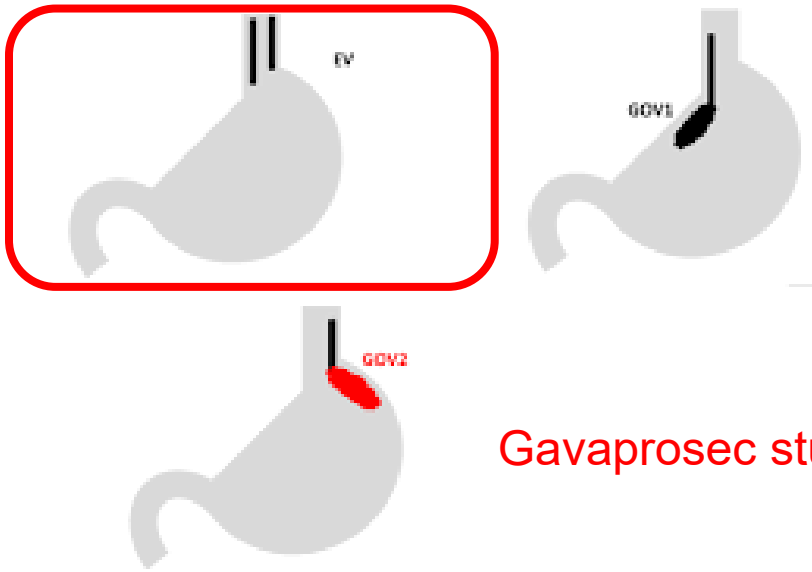
DAVID Y. GRAHAM and J. LACEY SMITH GASTROENTEROLOGY 1981;80:800–9



STOP

Preemptive TIPS: indications

EV, GOV1, GOV2



- High-risk patients

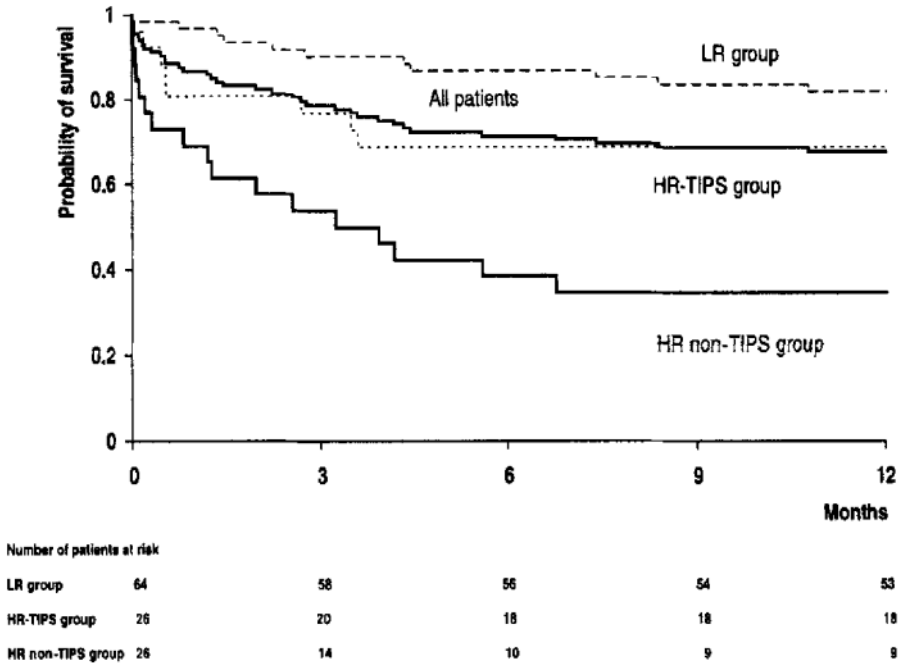
Gavaprosec study

STGE

Preemptive TIPS: High-Risk Definition-historical criteria (EV and GOV 1)

Hemodynamic criteria

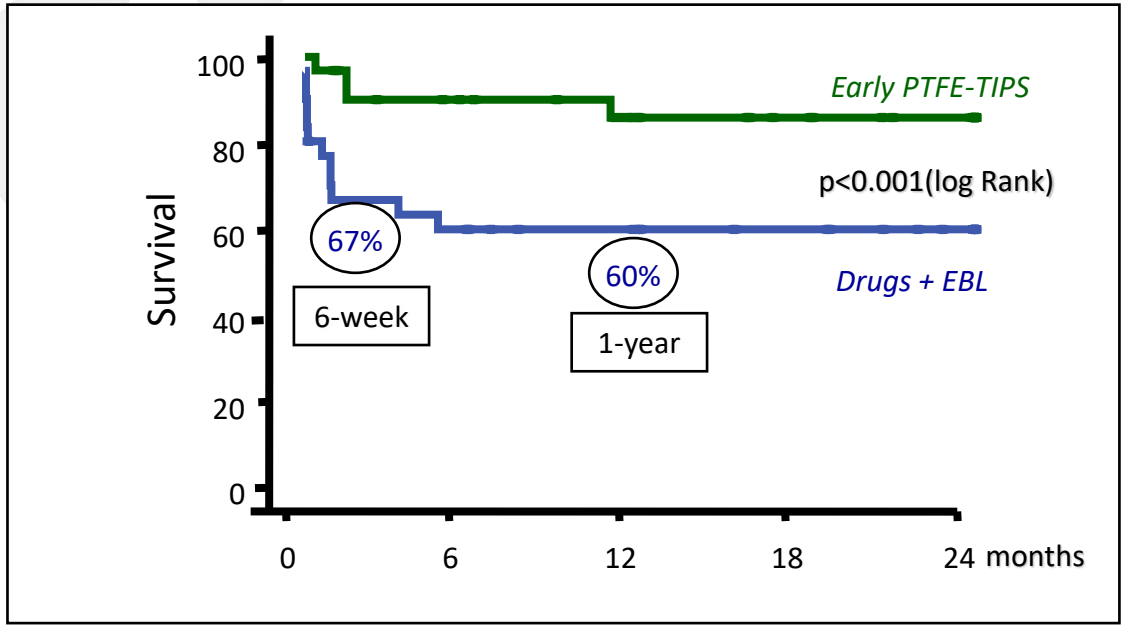
HVPG ≥20mmHg



Monescillo et al, Hepatology 2004

Clinical criteria

Child B+AB / Child C<14



Garcia-Pagan et al, NEJM 2010

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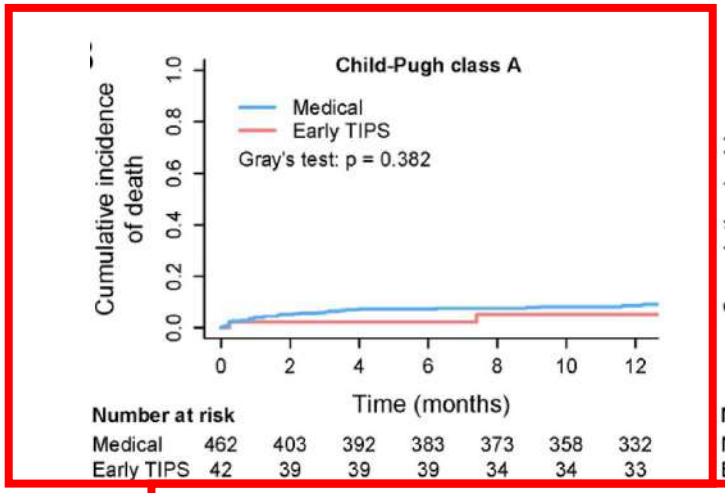
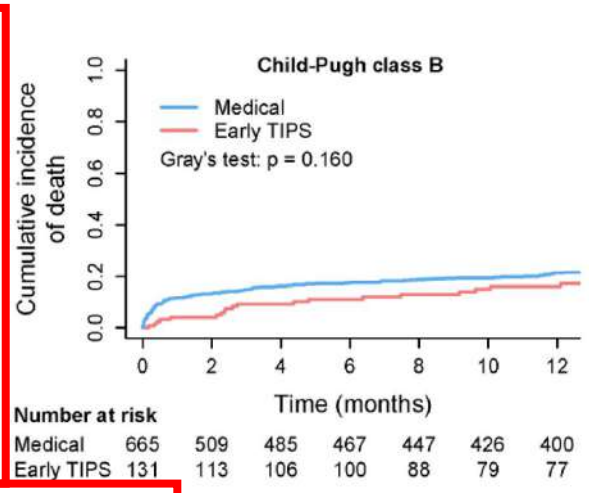
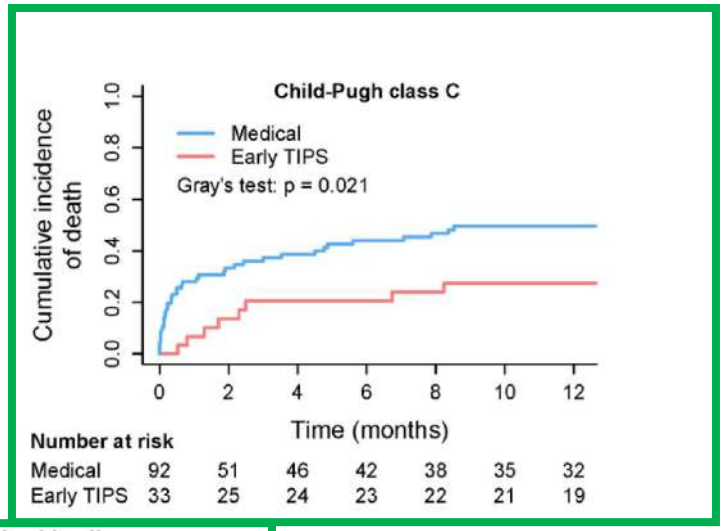
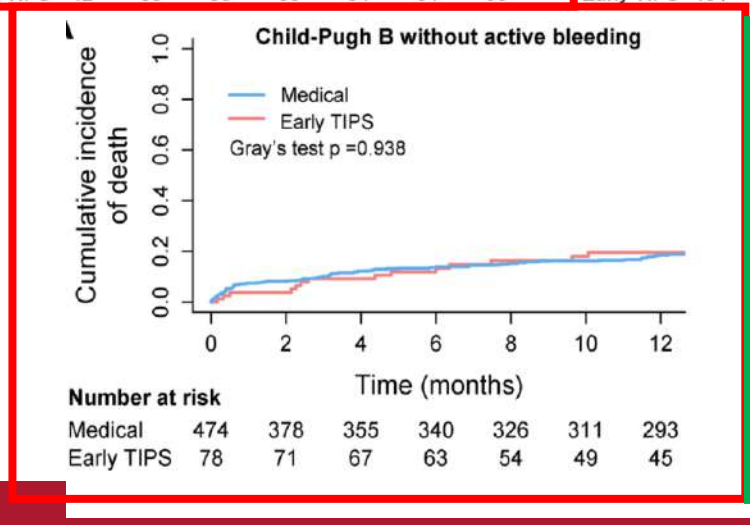
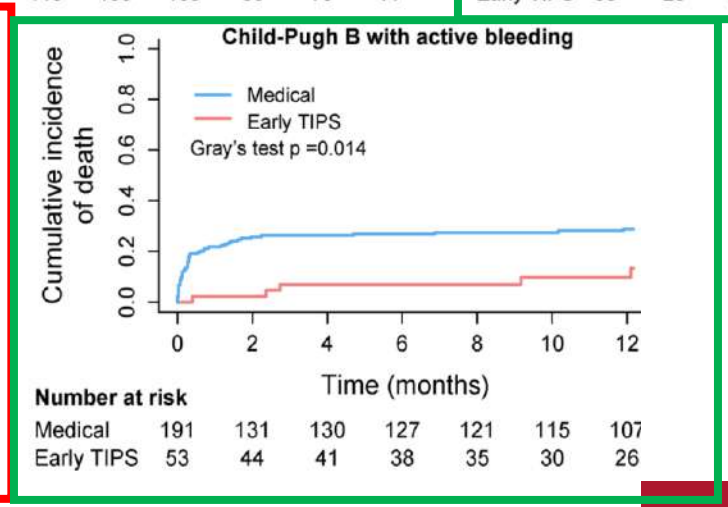
The question of « low » Child, and no AB at endoscopy (EV and GOV 1)









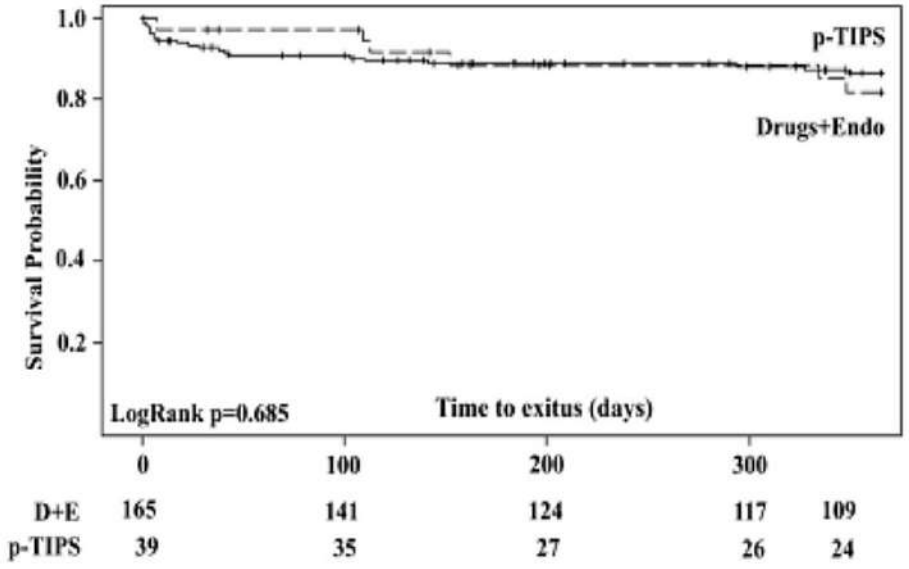


Lv et al., Gut 2018

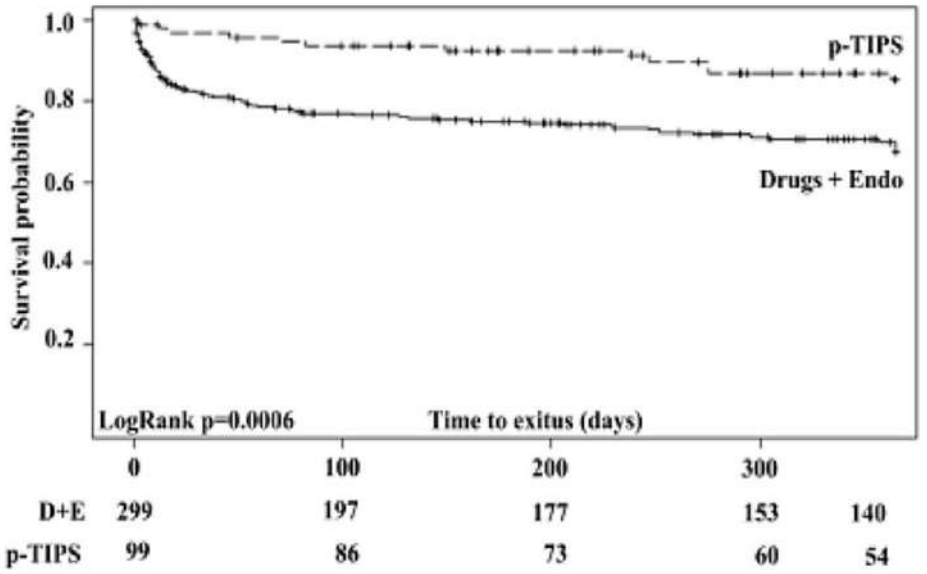
pTIPS: only for Child B8-9 pts (EV and GOV 1)

Meta-analysis individual data
(**ONLY CP-B+AB / CP-C /HVPG ≥20mmHg**)

CP-B+AB=7 points



CP-B+AB>7 points



Nicoară-Farcău O et al. Gastroenterology 2021

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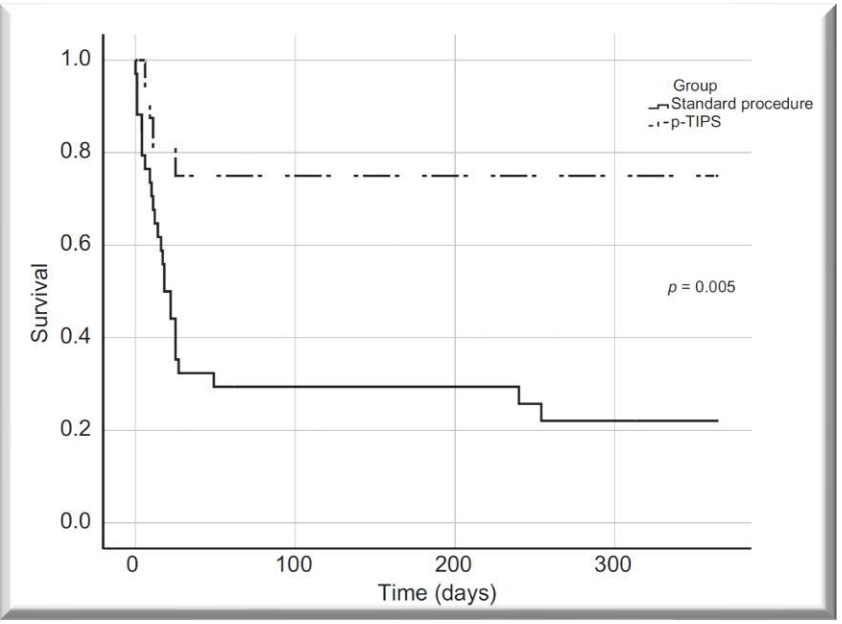
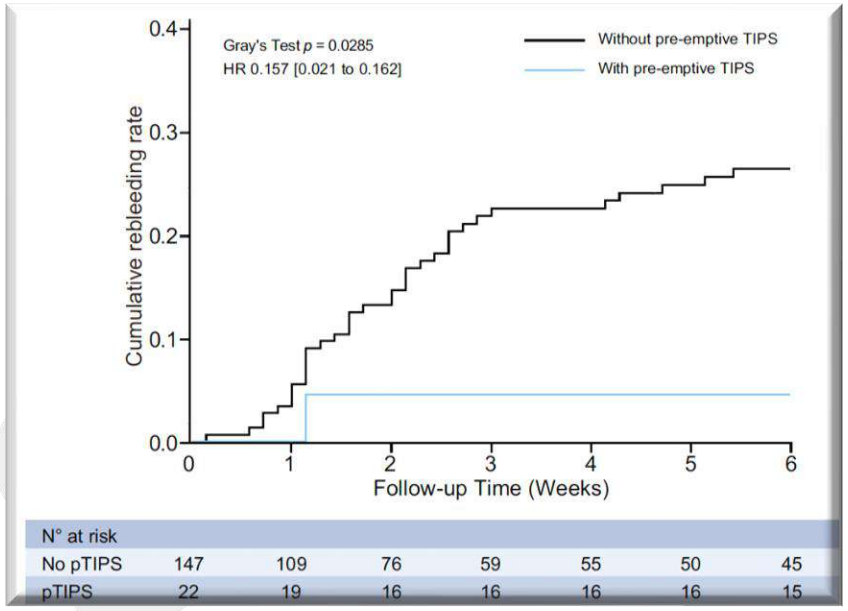
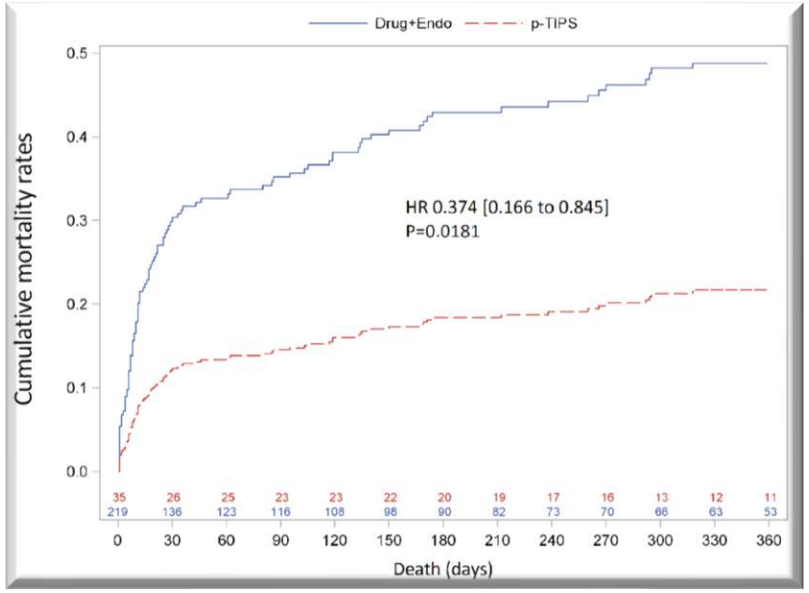
Preemptive TIPS: no futility criteria



Child-Pugh C
Bili > 100 µmol/l and PT < 35



ACLF



HE

Depaire M et al., J Hepatol 2021
Trebicka J et al., J Hepatol 2021
Rudler M et al., Gut 2023

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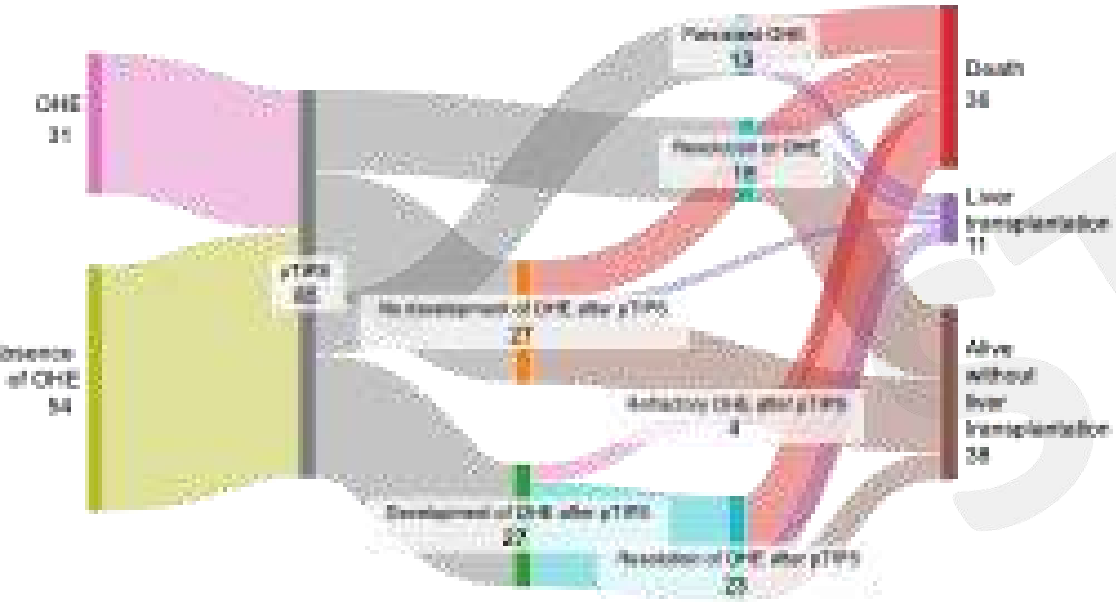
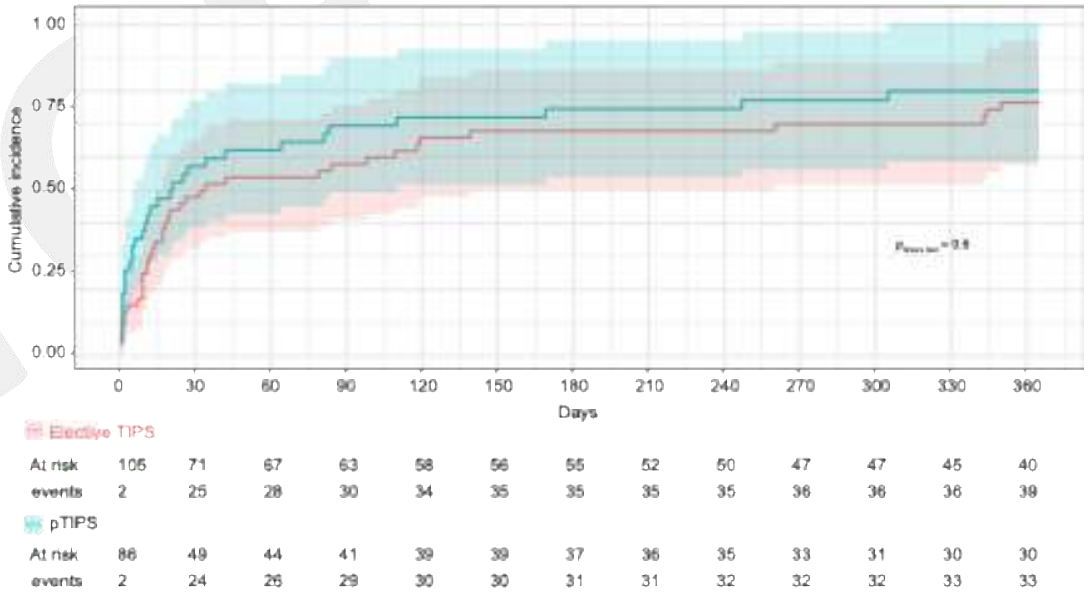
HE and pTIPS



Incidence of HE after pTIPS



FDR: sarcopénie, FDR cardiovasculaires

Rudler M et al., JHEP Reports 2025

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Preemptive TIPS: indications in 2026

Indications

Recommendation

- In patients with cirrhosis and bleeding from oesophageal varices or type 1 gastro-oesophageal varices, Child-Pugh class B >7 with active bleeding during initial endoscopy despite vasoactive drug use, or Child-Pugh class C <14, or documented HVPG ≥20 mmHg at the time of bleeding, should be used to define high-risk patients who may obtain a survival benefit from a pre-emptive TIPS **(LoE 1, strong recommendation, strong consensus)**.

- EV or GOV1
- Child B8-9 + AB, C10-13

- No futility criteria
- Child C>13 never included in the studies

Recommendation

- In candidates for a pre-emptive TIPS, essential preliminary evaluations may encompass parameters of liver function and cross-sectional multiphasic imaging or Doppler ultrasound **(LoE 5, weak recommendation, strong consensus)**.

De Franchis R et al., J Hepatol 2022
EASL CPG, J Hepatol 2025

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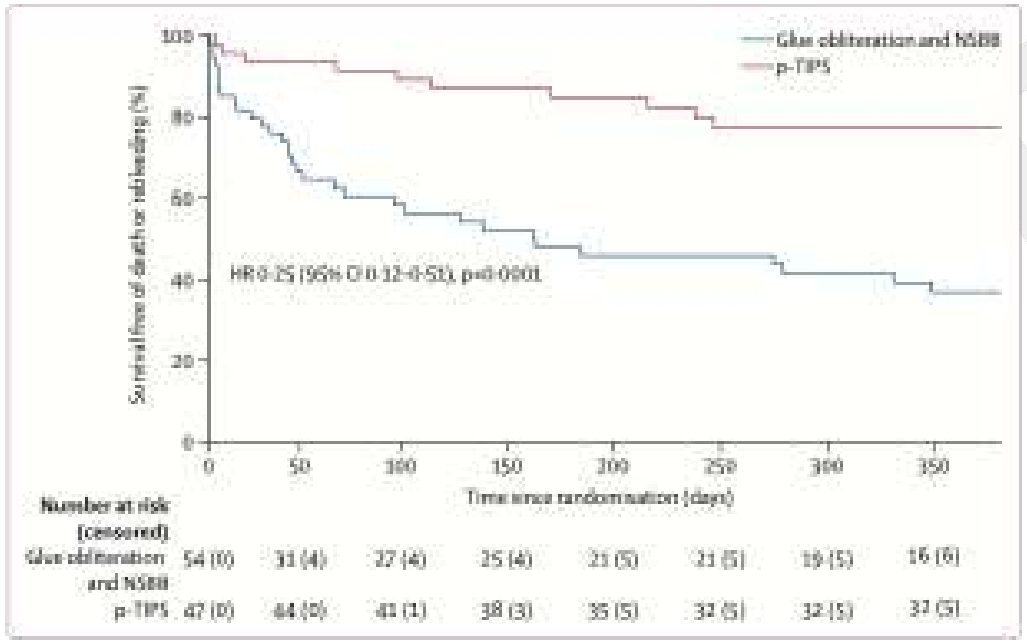
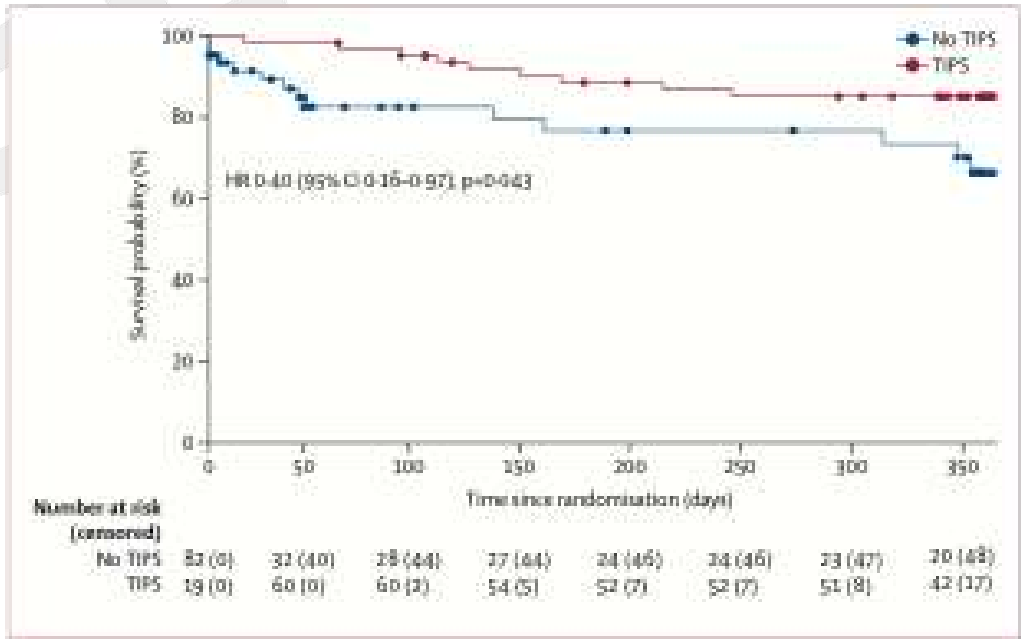
Preemptive TIPS: expanding indications to gastric varices

GAVAPROSEC study

- Non GOV 1 bleeding from GV, ANY Child
- Stabilized 12 hours after control of bleeding, TIPS within 72 hours

➢ **Expansion of criteria**

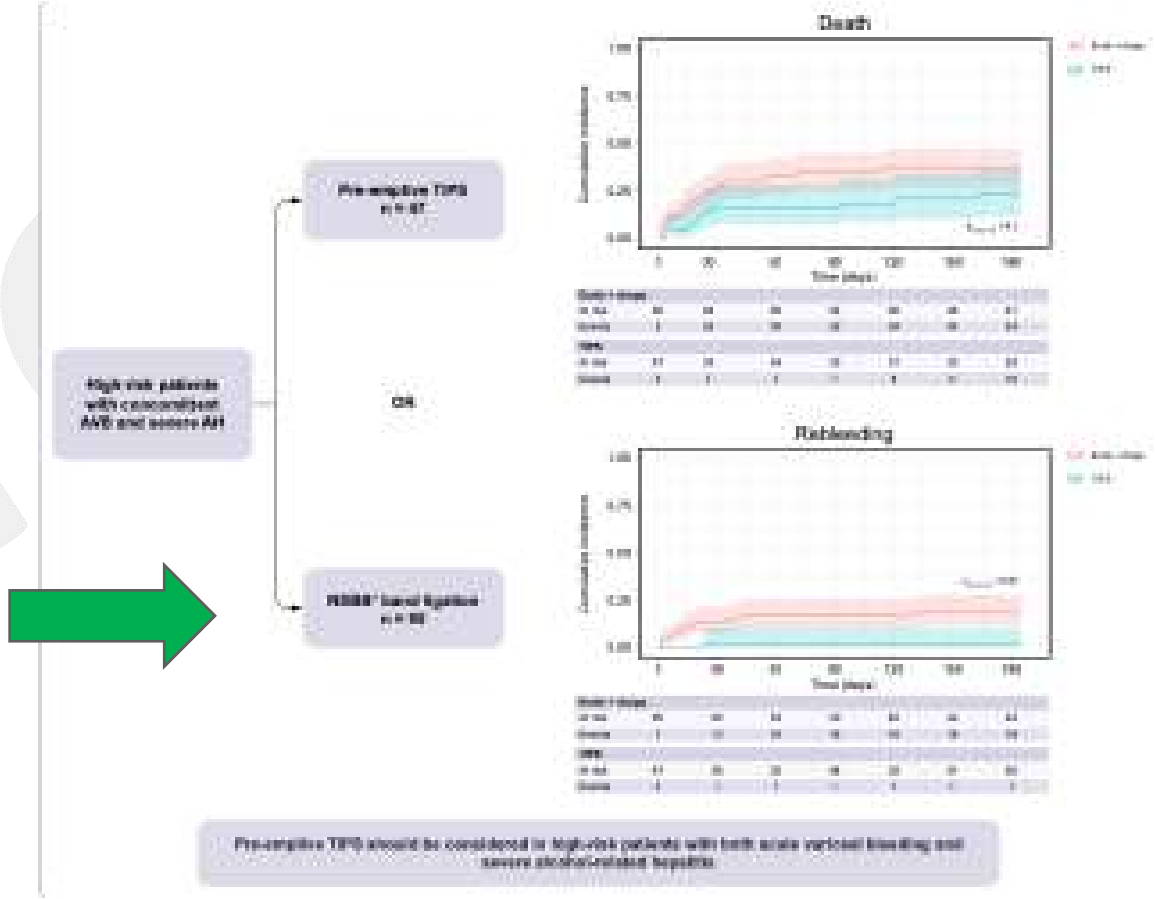




Cervoni JP et al., Lancet Gastroenterol Hepatol 2025

Preemptive TIPS: expanding indications to alcoholic hepatitis

N=142
Patients with severe AH
Multicentric retrospective study (EuroTIPS)
TIPS vs NSBB + drugs



Rudler M et al., JHEP Reports 2025

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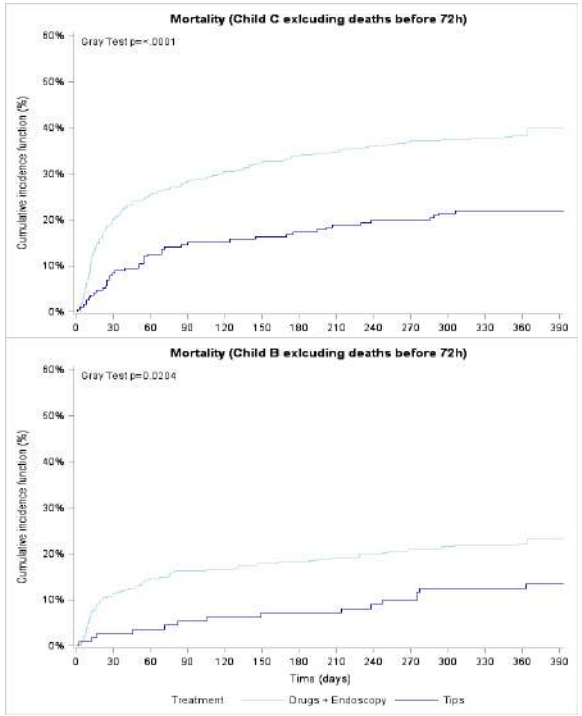
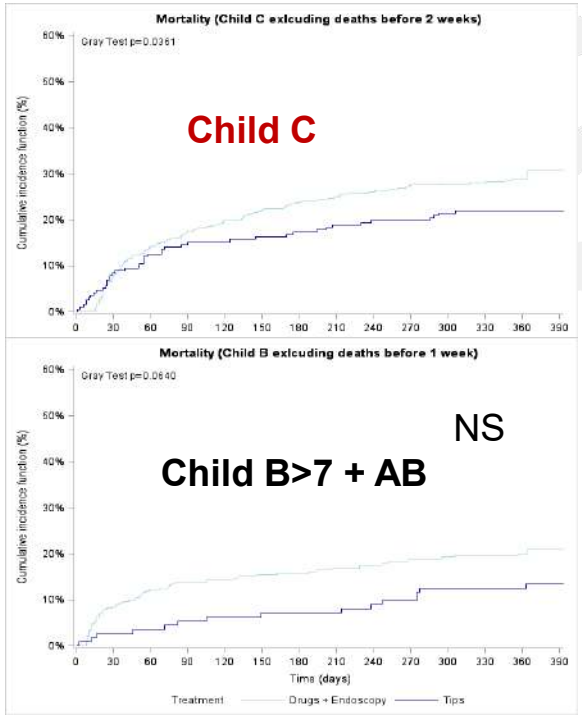
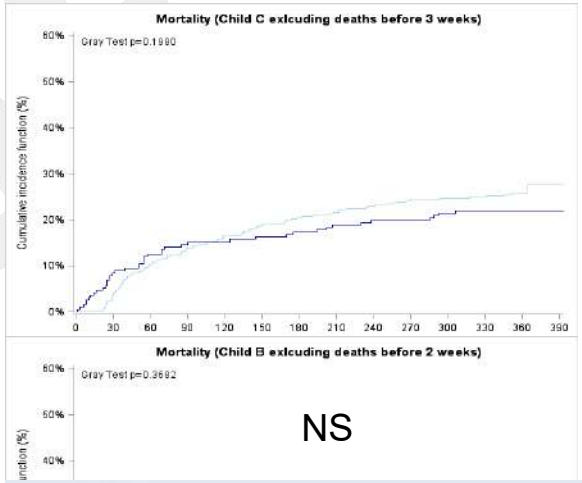
Preemptive TIPS: Can we extend the delay ?

- IPD meta-analysis of 8 studies of pTIPS
- 1389 patients (342 p-TIPS and 1047 Drugs+Endoscopy)
- Exclusion of pts of control group dying within 72 hrs







- After the 72-hour window, selected patients may still benefit from a p-TIPS, and referral to an expert centre may be considered **(LoE 4, weak recommendation, strong consensus)**.

Nicoară-Farcău O et al. Hepatology 2024

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Preemptive TIPS in high-risk patients: feasibility

Research Article
Cirrhosis

JOURNAL
OF HEPATOLOGY

Cirrhotic patients with portal hypertension-related bleeding and an indication for early-TIPS: A large multicentre audit with real-life results

Dominique Thabut[1,*], Arnaud Pauwels[2], Nicolas Carbonell[3], Andre Jean Remy[4], Pierre Nahon[5], Xavier Causse[6], Jean-Paul Cervoni[7], Jean-François Cadranel[8], Isabelle Archambeaud[9], Slim Bramli[10], Florent Ehrhard[11], Philippe Ah-Soune[12], Florian Rostain[13], Alexandre Pariente[14], Julien Vergniol[15], Jean-Pierre Dupuychaffray[16], Anne-Laure Pelletier[17], Florence Skinazi[18], Anne Guillygomarc'h[19], René-Louis Vitte[20], Jean Henrion[21], Stéphanie Combet[1], Marika Rudler[1], Christophe Bureau[22], For the Club Francophone pour l'Etude de l'Hypertension Portale (CFETHTP) and Association des Hépato-Gastroentérologues des Hôpitaux Généraux (ANGH)[1]

326 PTS, 22 EARLY TIPS
7% OF HIGH-RISK PTS

HEPATOLOGY
AASLD
HEPATOLOGY, VOL. 69, NO. 1, 2019

Preemptive-TIPS Improves Outcome in High-Risk Variceal Bleeding: An Observational Study

Virginia Hernández-Gea[1,2,*], Bogdan Procopet[3], Álvaro Giráldez[4], Lucio Amitrano[5], Candid Villanueva[2,6], Dominique Thabut[7], Luis Ibañez-Samaniego[8], Gilberto Silva-Junior[1], Javier Martinez[9], Joan Genescà[2,10], Christophe Bureau[11], Jonel Trebicka[12,13,14,15], Elba Llop[2,16], Wim Laleman[17], Jose Maria Palazon[18], Jose Castellote[19], Susana Rodrigues[20], Lise L. Gluud[21], Carlos Noronha Ferreira[22], Rafael Barcelo[23], Nuria Cañete[24], Manuel Rodríguez[25], Arnulf Ferlitsch[26], Jose Luis Mundi[27], Henning Gronbaek[28], Manuel Hernández-Guerra[29], Romano Sassatelli[30], Alessandra Dell'Era[31], Marco Senzolo[32], Juan G. Abraldes[33], Manuel Romero-Gómez[2,34], Alexander Zipprich[35], Meritxell Casas[36], Helena Masnou[37], Massimo Primignani[38], Aleksander Krag[15], Frederik Nevens[17], Jose Luis Calleja[2,16], Christian Jansen[12], Marie Angèle Robic[11], Irene Conejo[10,2], Maria-Vega Catalina[2,8], Agustin Albillos[2,9], Marika Rudler[7], Edilmar Alvarado[2,6], Maria Anna Guardascione[5], Marcel Tantau[3], Jaime Bosch[1,2,39], Ferran Torres[23,40] and Juan Carlos Garcia-Pagán[1,2,*] for the International Variceal Bleeding Observational Study Group and Baveno Cooperation

671 PTS, 66 EARLY TIPS
9,8% OF HIGH-RISK PTS

ORIGINAL ARTICLE

Identifying optimal candidates for early TIPS among patients with cirrhosis and acute variceal bleeding: a multicentre observational study

Yong Lv,[1] Luo Zuo,[1] Xuan Zhu,[2] Jianbo Zhao,[3] Hui Xue,[4] Zaibo Jiang,[5] Yuzheng Zhuge,[6] Chunqing Zhang,[7] Junhui Sun,[8] Pengxu Ding,[9] Weixin Ren,[10] Yingchun Li,[11] Kewei Zhang,[12] Wenguang Zhang,[13] Chuangye He,[1] Jiawei Zhong,[2] Qifeng Peng,[3] Fuquan Ma,[4] Junyang Luo,[5] Ming Zhang,[6] Guangchuan Wang,[7] Minhuang Sun,[11] Junjiao Dong,[12] Wei Bai,[1] Wengang Guo,[1] Qiuhe Wang,[1] Xulong Yuan,[1] Zhengyu Wang,[1] Tianlei Yu,[1] Bohan Luo,[1] Xiaomei Li,[1] Jie Yuan,[1] Na Han,[1] Ying Zhu,[1] Jing Niu,[1] Kai Li,[1] Zhanxin Yin,[1] Yongzhan Nie,[14] Daiming Fan,[14] Guohong Han[1]

1425 PTS, 206 EARLY TIPS
23,3% OF HIGH-RISK PTS

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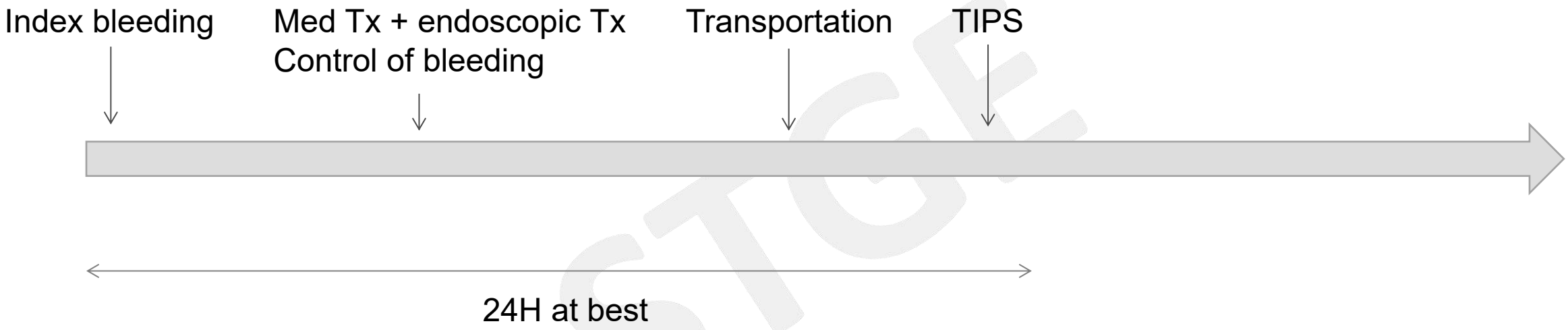
Preemptive TIPS in high-risk patients: Think of TIPS !



Think of TIPS

Think of TIPS

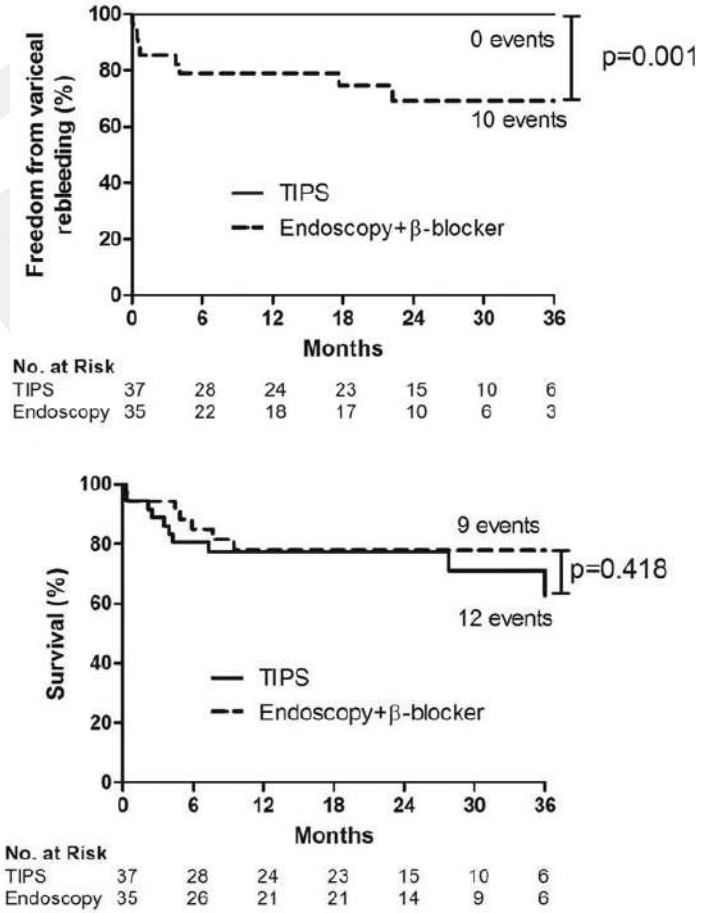
Too late to think of TIPS ?

STGF

TIPS in secondary prophylaxis

Recommendations

- Standard secondary prophylaxis (NSBB + EBL) should remain the first line of treatment. In case of secondary prophylaxis failure, a TIPS should be considered in selected patients **(LoE 5, strong recommendation, strong consensus).**



Hoslter L et al., Hepatology 2016
Larrue H et al., J Hepatol 2023

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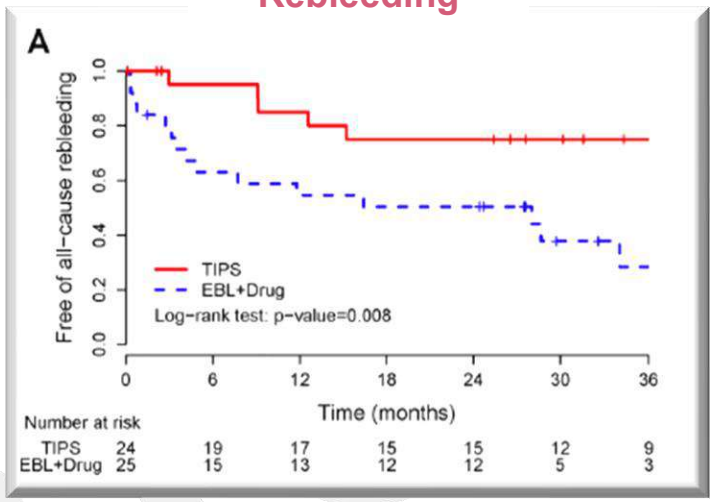
TIPS in secondary prophylaxis in case of PVT

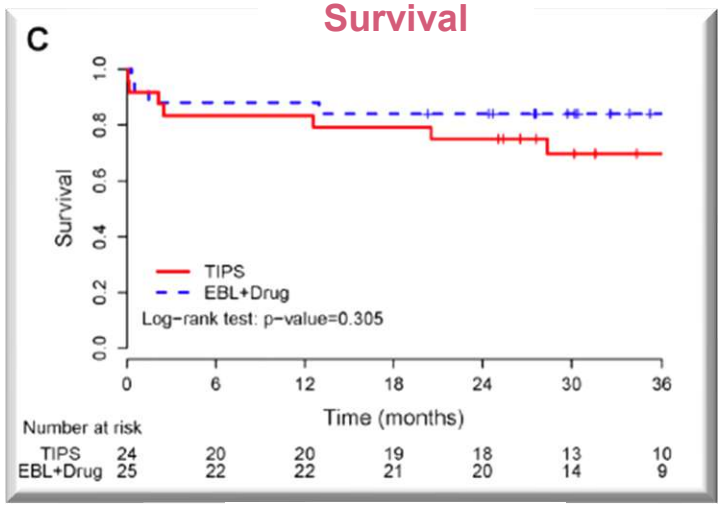
2 RCT (n=49, n=73)

+ 1 retrospective study (n=53)

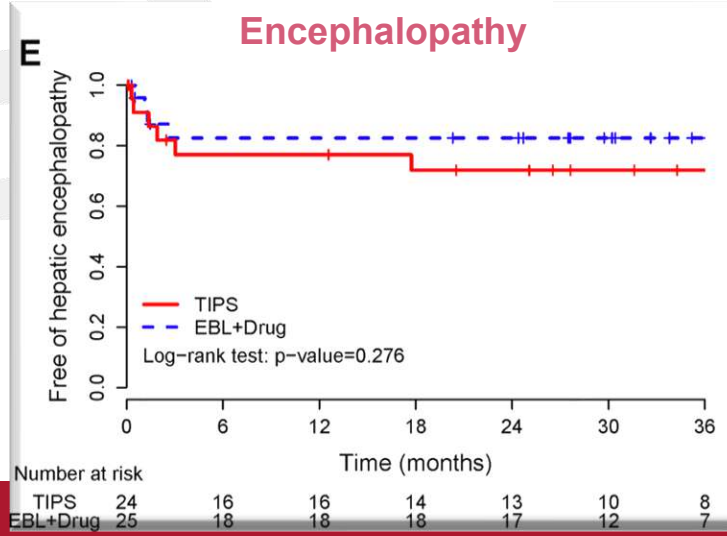
Rebleeding



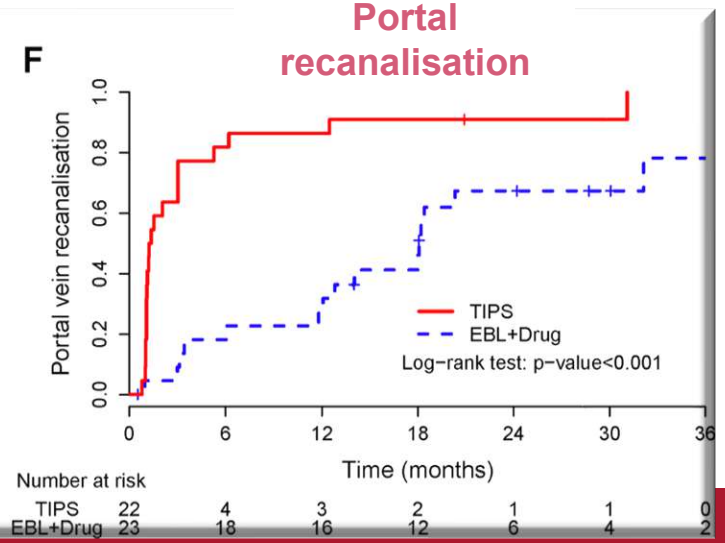
Survival



Encephalopathy



Portal recanalisation



Zhou Y et al., EJGH 2020
Luo X et al., Radiology 2015
Lv Y et al., Gut 2018

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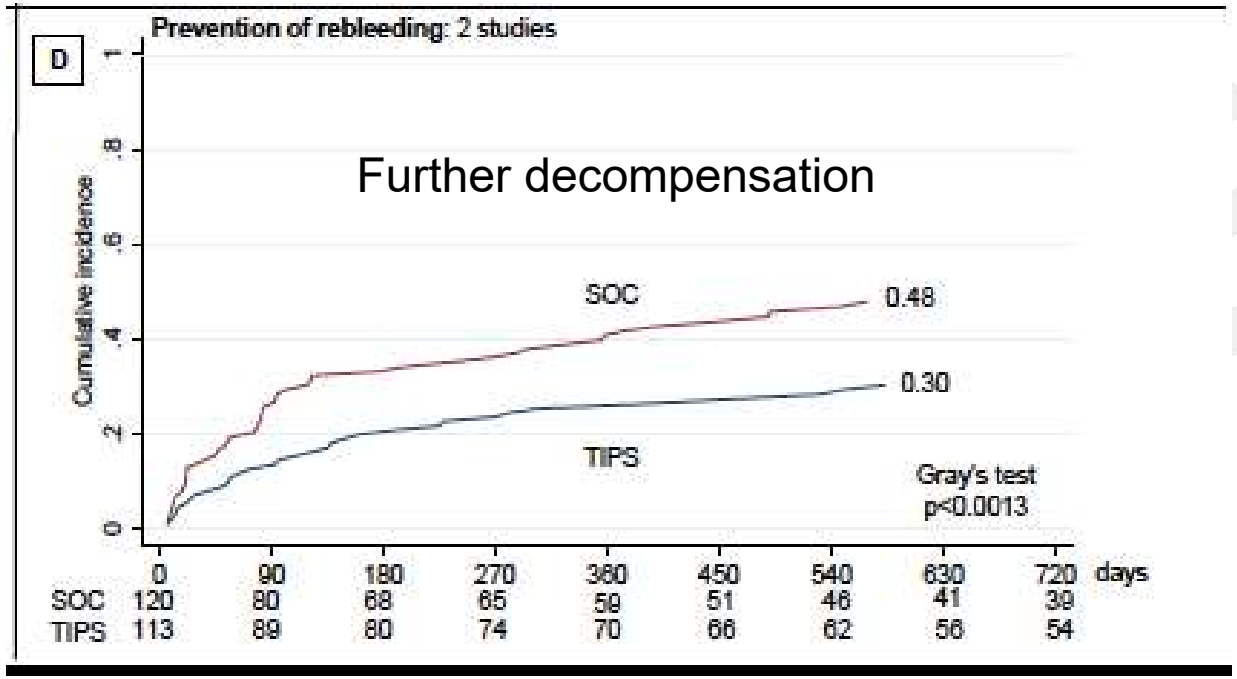
TIPS in secondary prophylaxis: to prevent further decompensation ?



Recommendations

- Standard secondary prophylaxis (NSBB + EBL) should remain the first line of treatment. In case of secondary prophylaxis failure, a TIPS should be considered in selected patients **(LoE 5, strong recommendation, strong consensus).**
- In patients with a first episode of PH-related variceal bleeding not fulfilling the high-risk criteria and with grade 2 ascites or PVT, TIPS creation may be the preferred strategy **(LoE 2, weak recommendation, strong consensus).**

Larrue H et al., J Hepatol 2023
EASL CPG, J Hepatol 2025

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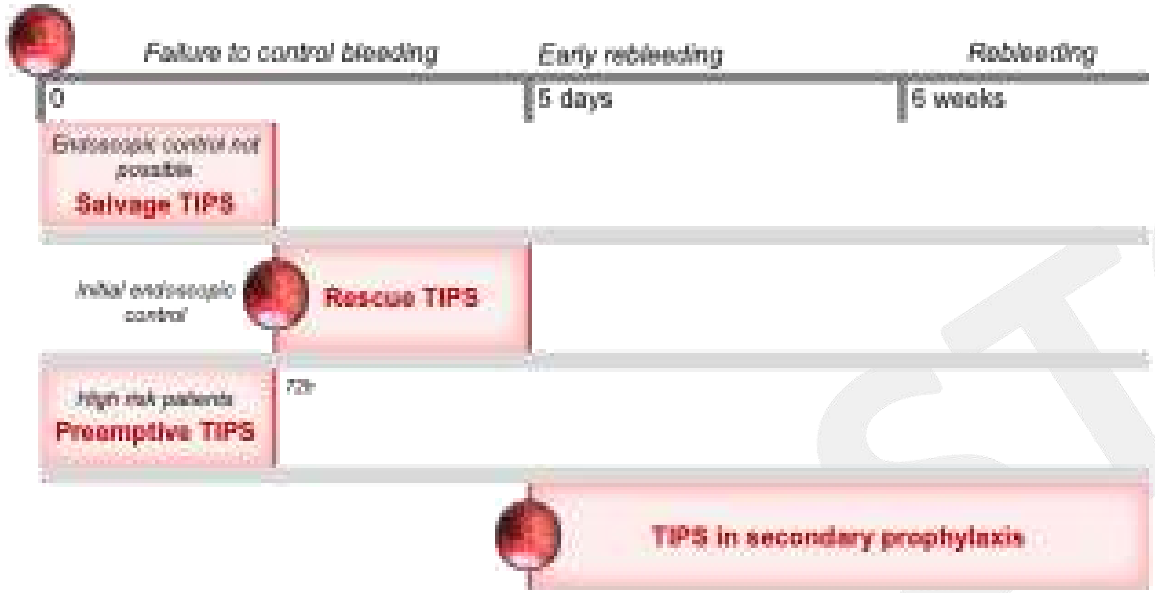
Indications of TIPS: bleeding & ascites

➢ Bleeding



Urgent

Elective

➢ Recurrent or refractory ascites

prevented by medical therapy. The International Ascites Club[152,163] defined *refractory* ascites as:

- resistant to diuretics in the absence of response or in the case of early recurrence of ascites under intensive diuretic therapy (400 mg/day spironolactone and 160 mg/day furosemide) combined with sodium restriction (less than 90 mmol/day of salt for at least 1 week), or
- intractable when a complication directly attributed to diuretics occurs, such as HE, acute renal failure, hyponatremia, or dyskalemia.

Ascites is considered *recurrent* when three large-volume paracenteses (LVPs) are required within a 12-month period.

Elective

De Franchis R et al., J Hepatol 2022
EASL CPG, J Hepatol 2025

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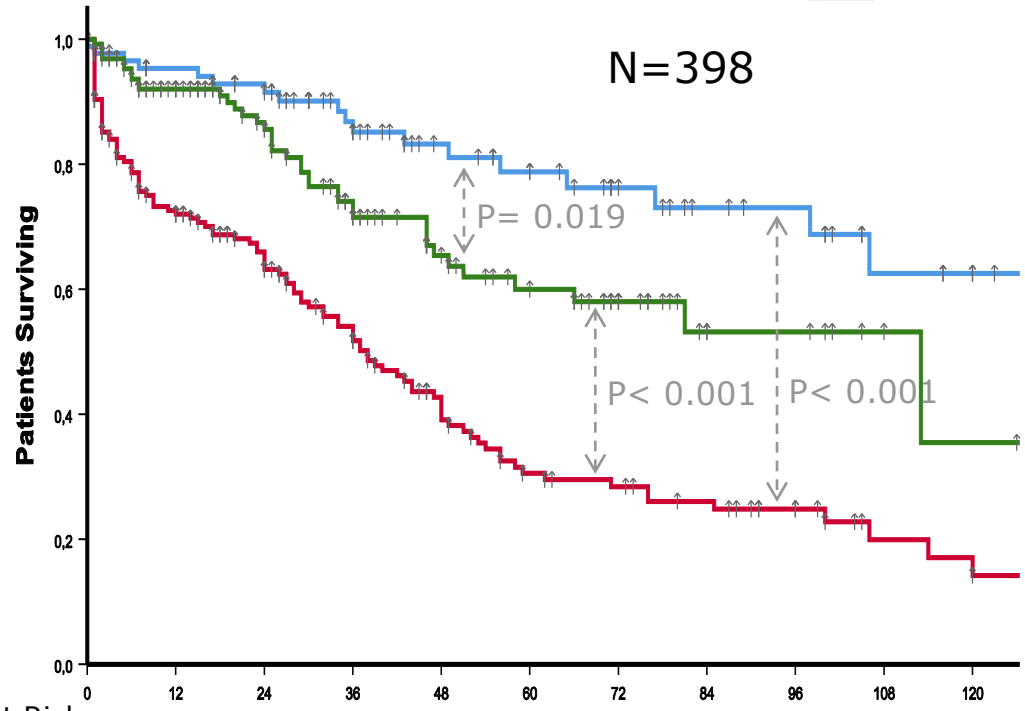
Prognostic value of different stages of cirrhosis



Bleeding alone

Ascites(±HE)

Bleeding & Ascites(±HE)

Patients at Risk

Bleeding	90	79	66	55	43	31	19	7	7	4	2
Ascites	131	120	108	96	84	71	60	48	36	24	12
Bleeding+Ascites	177	166	153	142	130	118	106	93	82	70	58

Garcia-Guix M et al., CO 155

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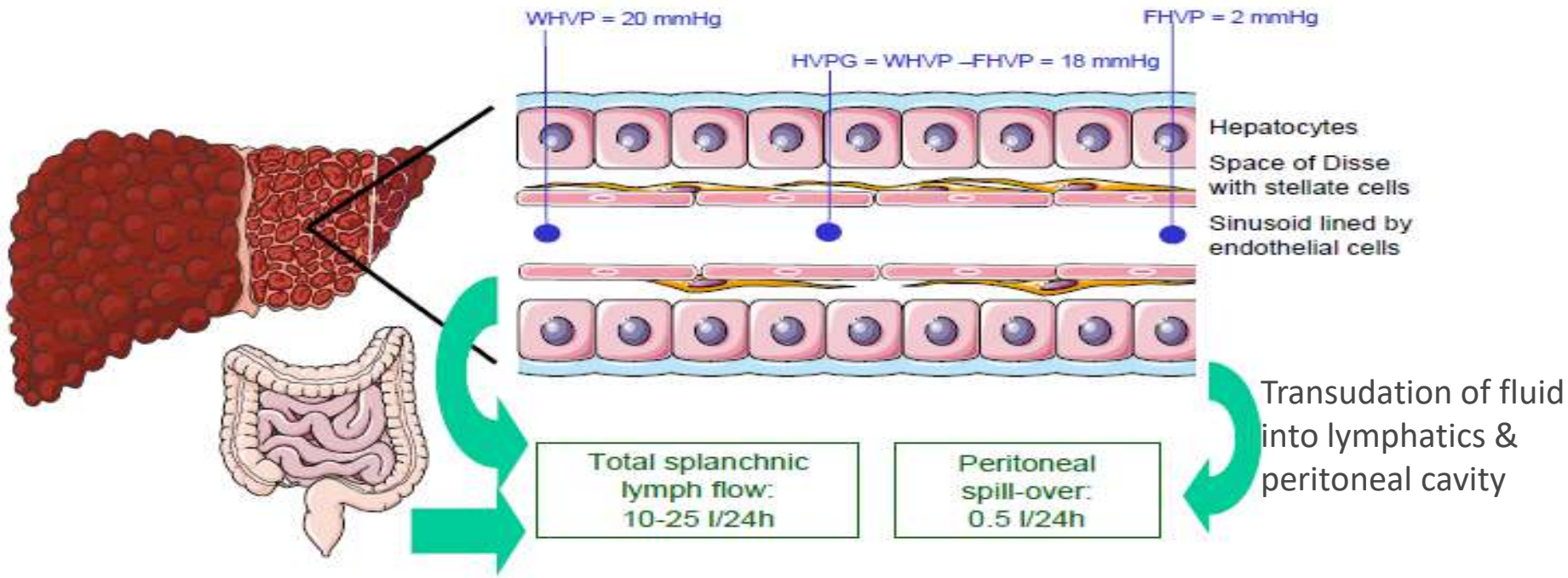
Pathogenesis of ascites

1. The increase of hydrostatic pressure within the sinusoids is a prerequisite (No ascites when HVPG < 10 mmHg)



Moller S et al. Scand J Gastroenterol 2009; 44: 902

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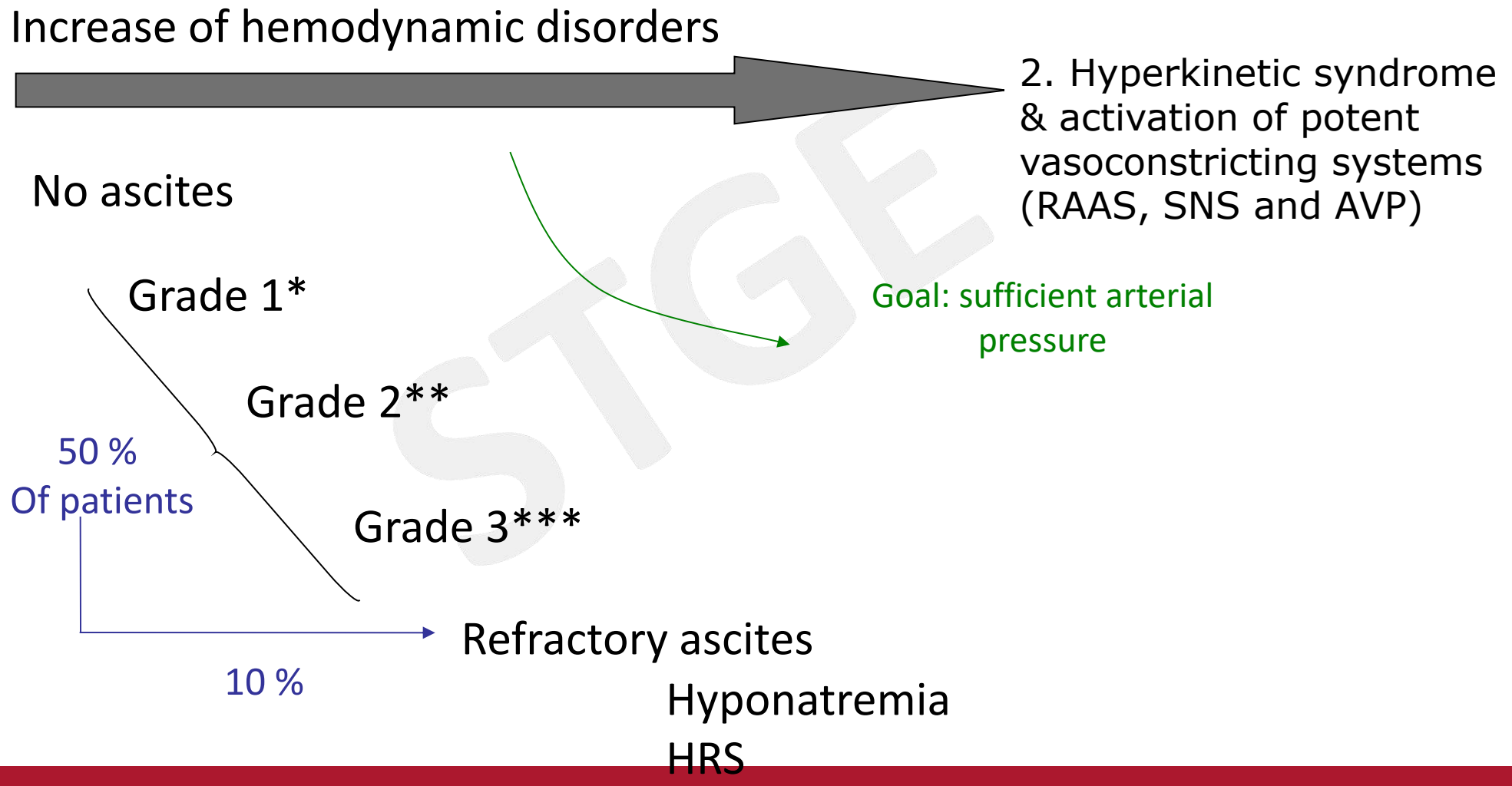
Natural history of ascites



*Mild ascites (ultrasound examination)
**Moderate ascites
***Large or tense ascites

STGE

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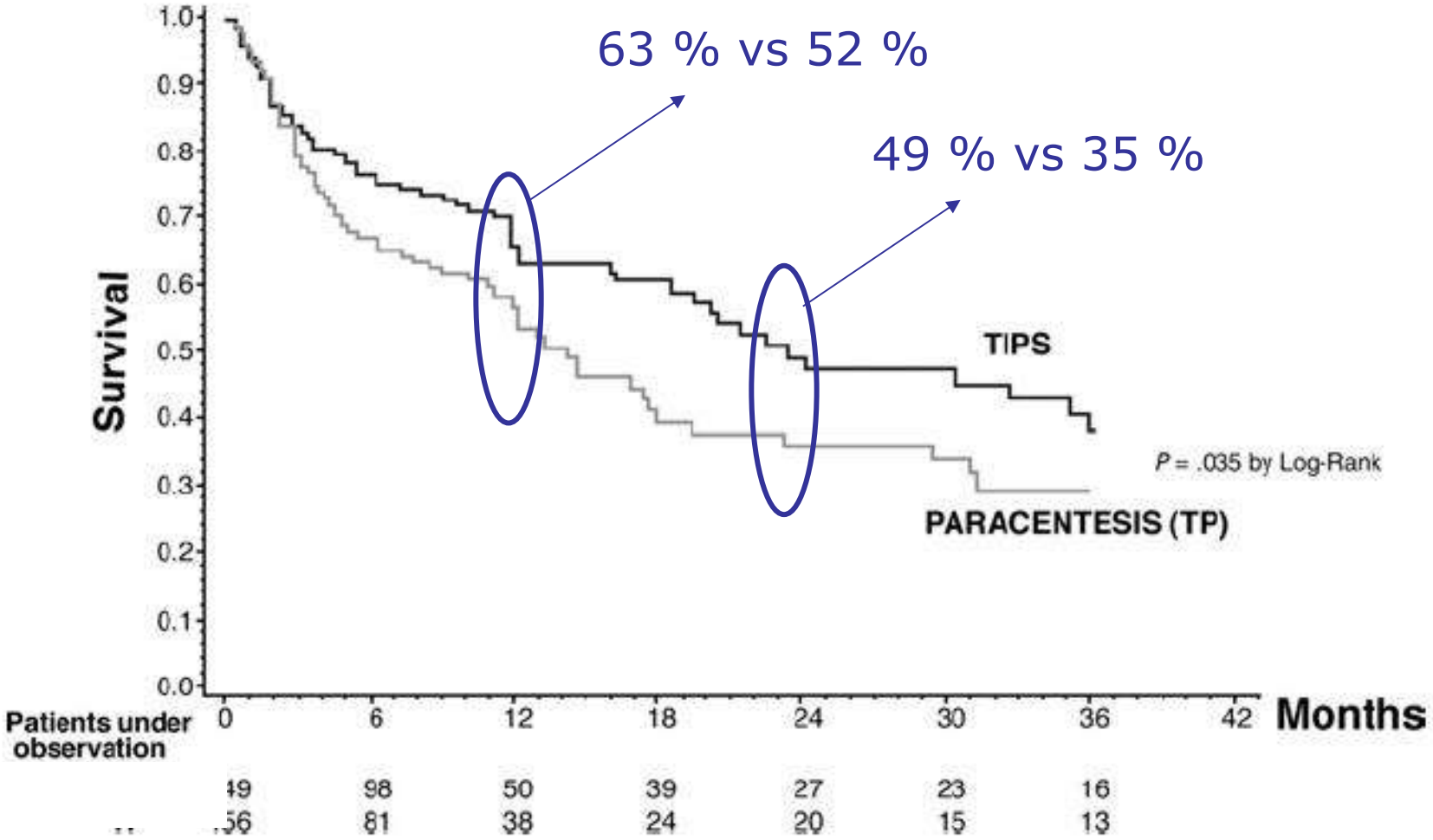
Refractory ascites: LVP or TIPS ?

?

6 Randomized controlled trials

TIPS and refractory ascites: meta-analysis of 4 RCT, individual data

(non covered TIPS, n=305)



Salerno F et al., Gastroenterology 2007

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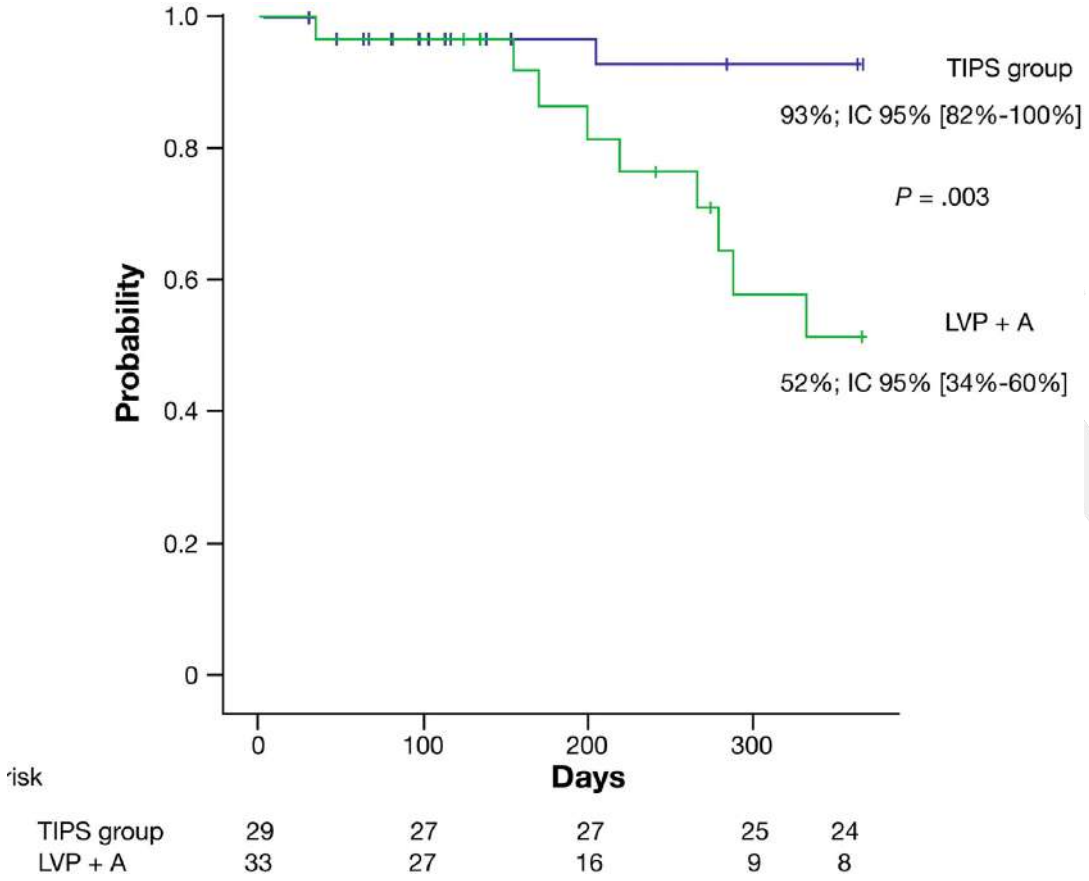
Covered TIPS in recurrent ascites

- 62 patients with recurrent ascites: 2 LVP within 3 weeks and less than 6 within 3 months



Benefits on
-sarcopenia
-renin activity
-…

Bureau et al., Gastroenterology 2017

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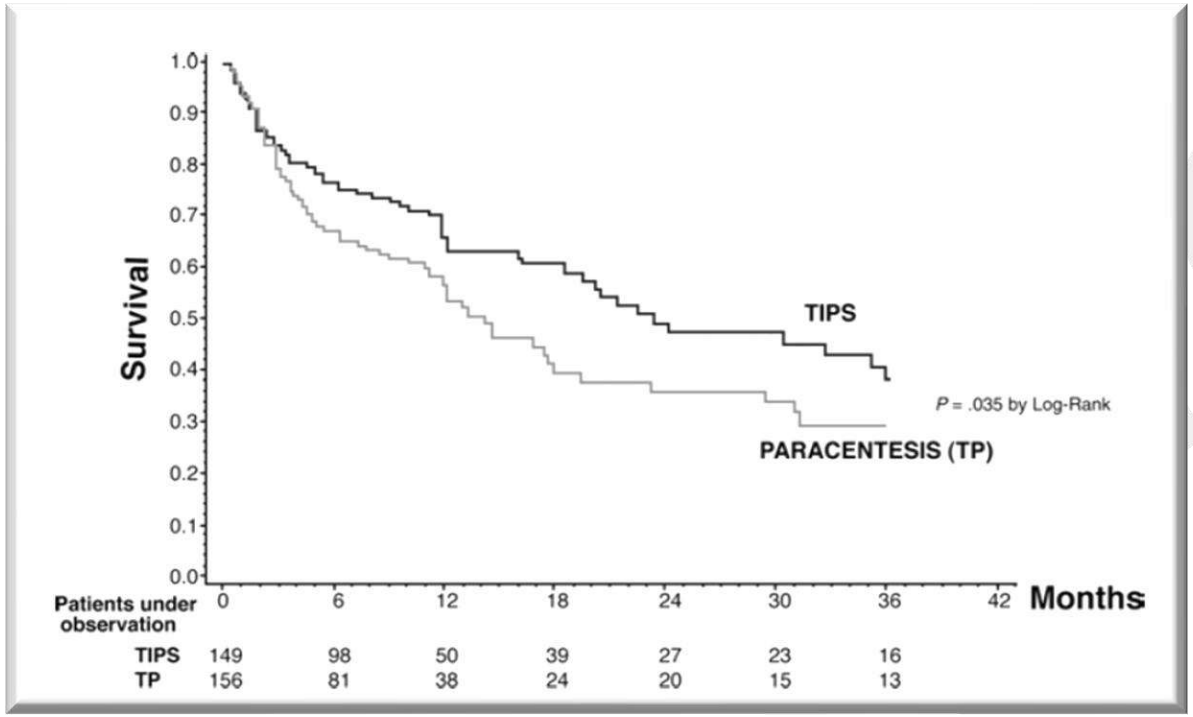
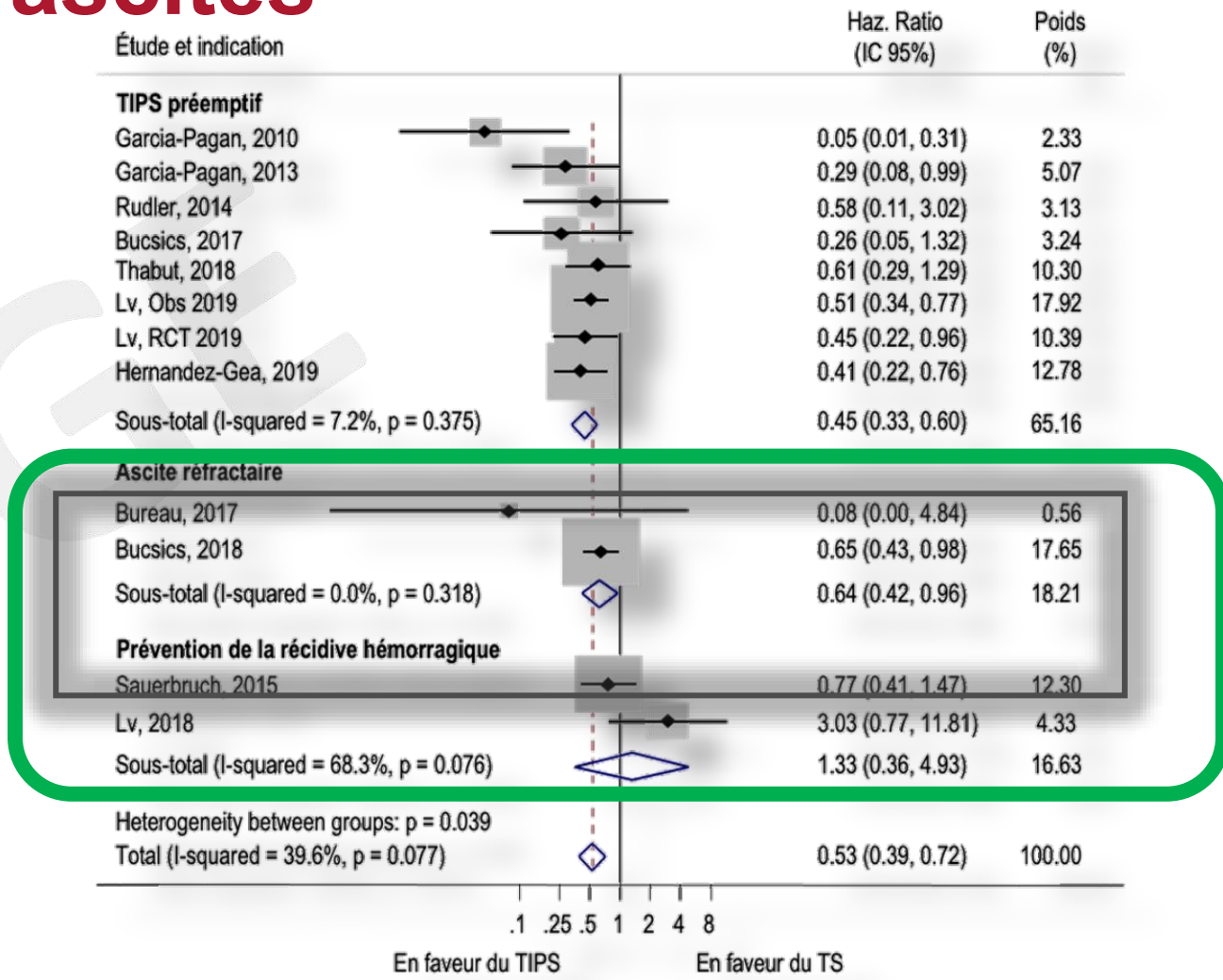
Covered TIPS in recurrent ascites



Mortality



Larrue H et al., J Hepatol 2023

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TIPS & Ascites: indications in 2026

Recommendation

- In patients with cirrhosis receiving repeated large volume paracenteses despite optimal medical therapy, a TIPS should be discussed early to improve patient outcomes **(LoE 1, strong recommendation, strong consensus).**

Recommendation

- A TIPS may be considered in patients with cirrhosis and refractory hepatic hydrothorax to improve patient outcomes **(LoE 4, weak recommendation, strong consensus).**

Recommendation

- A TIPS may be considered in patients with cirrhosis, ascites and HRS-NAKI to reduce morbidity and mortality **(LoE 4, weak recommendation, strong consensus).**

- Recurrent/refractory ascites
- Hydrothorax
- HRS-NAKI

- No indication for HRS-AKI (Liver HERO study ongoing)

EASL CPG, J Hepatol 2025

STOP

TIPS & Ascites: contra-indications

Table 3. Recommended evaluation prior to elective TIPS creation and findings that contraindicate elective TIPS.

System	Recommended assessment	Absolute contraindication/comments
Global	Consultations from hepatologist and/or gastroenterologist, TIPS proceduralist (radiologist or hepatologist) Additional specialty consultations on a case-by-case basis Consider liver transplantation, where applicable	No centre expertise in TIPS available* *No evidence to support routine evaluation for liver transplant prior to elective TIPS*
Hepatic	Serum total bilirubin, albumin, sodium, creatinine, INR and prothrombin time Calculate Child-Pugh and MELD scores; Consider FIPS and/or MOTS scores Cross-sectional imaging using CT or MRI with specific consideration for portal venous phase; Consider Doppler ultrasound if CT scan or MRI completed within 3 months Assess and treat underlying cause of cirrhosis, when available	Unrelieved biliary obstruction *No evidence to support absolute cut-offs* Masses/tumours in the liver parenchyma that would preclude TIPS creation *No evidence to delay TIPS when the aetiology of cirrhosis is treatable*
Cardiopulmonary	Natriuretic peptide dosage 12 lead ECG Transthoracic echocardiography	Severe cardiac dysfunction (right or left sided) Moderate-severe pulmonary hypertension (based on invasive measurements)** despite medical optimization Untreated severe valvular heart disease
Renal	Serum creatinine and glomerular filtration rate (estimated or measured)	*No evidence to support absolute cut-off*
Haematologic	Assess prior bleeding episodes INR, platelet count, haemoglobin***	*No evidence to support absolute cut-off*
Central nervous system	Previous episodes of OHE Consider testing for minimal/covert HE Assess age, serum sodium, serum creatinine, serum glucose, sarcopenia	Severe/refractory overt HE without intervenable spontaneous shunt
Immune	Assess infection symptoms	Uncontrolled systemic infection or sepsis

- « Low » MELD
- Consider FIPS score or Bili/plt score
- No absolute cut-off

- MELD>15
- Bili > 3-5 mg/dl
- Child >11

- Almost never included

EASL CPG, J Hepatol 2025

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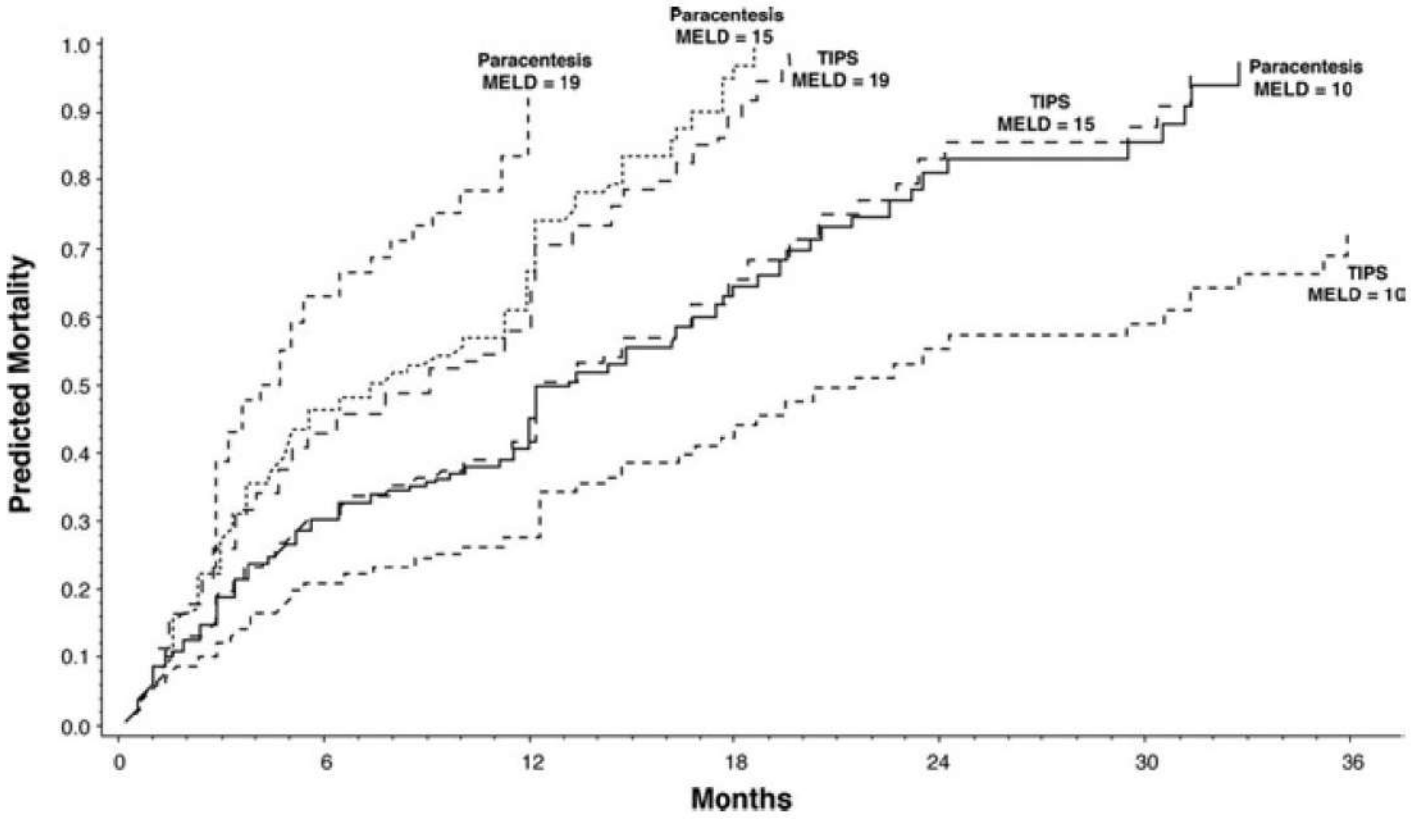
What is the benefit of TIPS in pts in pts outside the spectrum ?



Salerno F et al., Gastroenterology 2007

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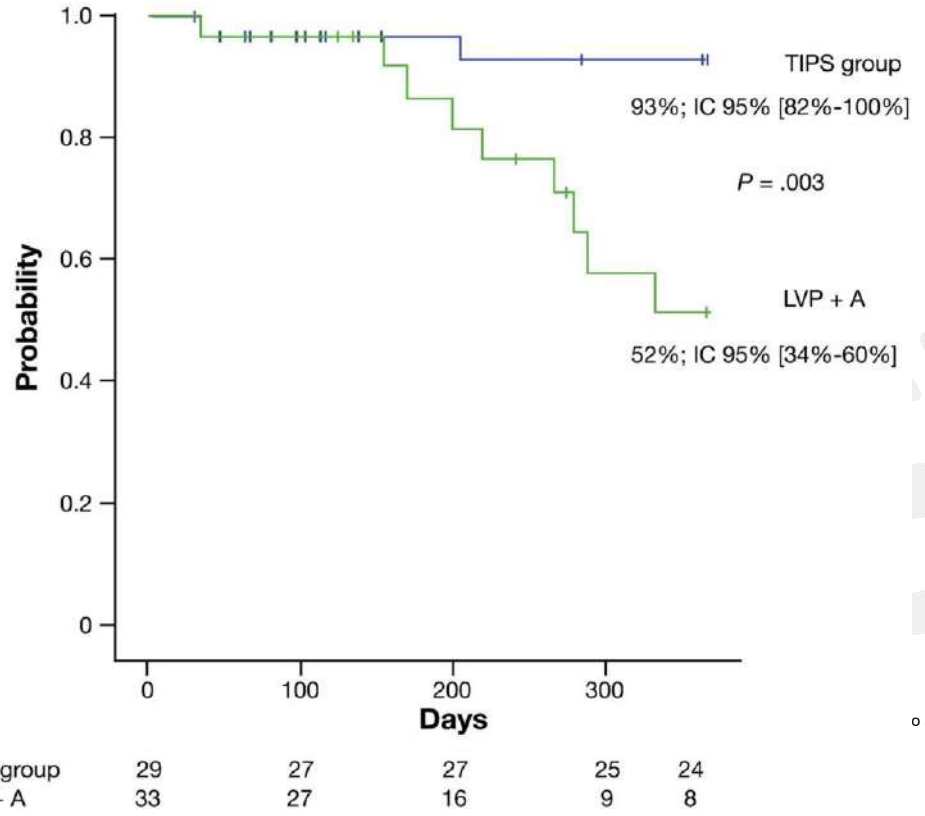
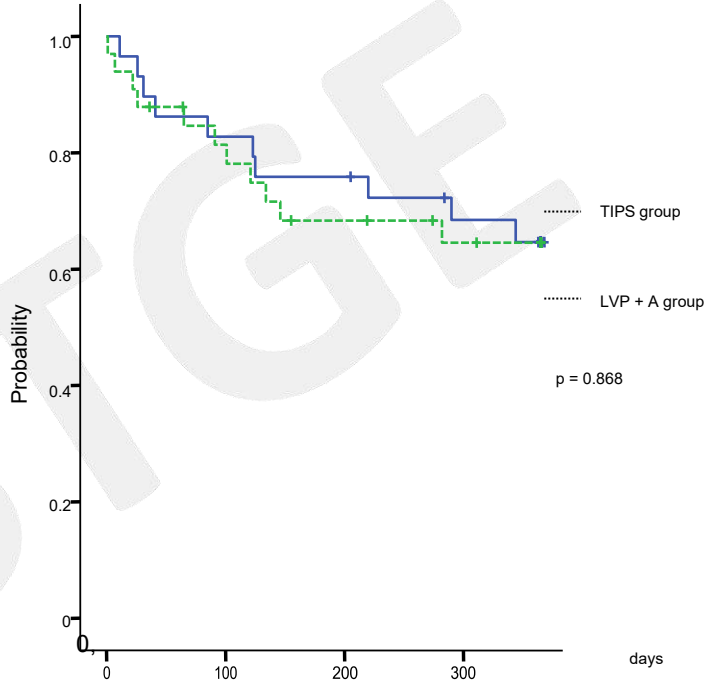
TIPS & ascites: Risk of further HE

LT-free survival



TIPS group	29	27	27	25	24
LVP + A	33	27	16	9	8

HE occurrence



o at risk

TIPS group	29	24	22	18	16
LVP + A	33	25	20	17	16

- Facteurs de risque
  - Age
  - PAM basse
  - ATCD EH
  - EH minime
  - Sarcopénie
- Qualité de vie +++

Bureau C et al., Gastroenterology 2017
Jorus M et al., JHEP Reports 2026

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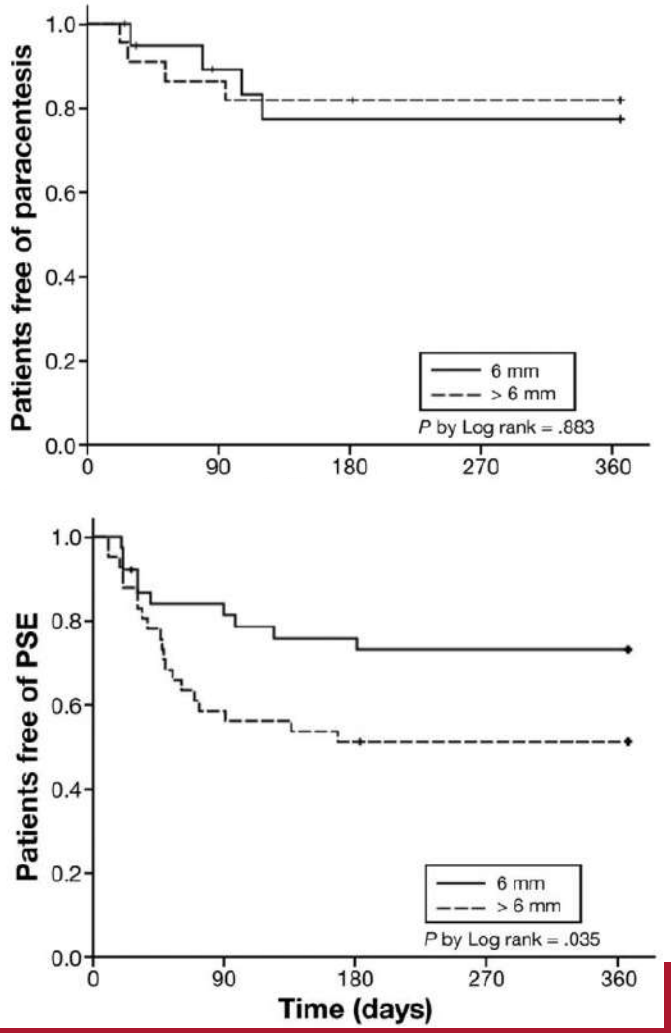
Under-dilated TIPS Associate With Efficacy and Reduced Encephalopathy in a Prospective, Non-randomized Study of Patients With Cirrhosis

Schepis and Vizzutti et al CGH 2018



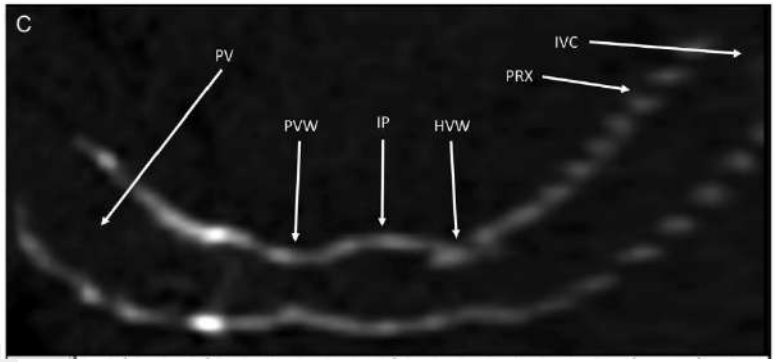


Table 3. Competing Risks Regression Models for 1-Year Post-TIPS PSE in the Pooled Groups of the Clinical Study (N = 142)

	Univariate analysis			Multivariate analysis		
	HR	95% CI	*P* value	HR	95% CI	*P* value
Model 1						
Indication (RA vs VH)	0.85	0.49–1.18	.570	1.03	0.59–1.79	.920
Sex (female vs male)	2.21	1.20–3.70	.009	1.91	1.07–3.40	.029
Age, *y* (1-U increment)	1.04	1.01–1.06	.004	1.04	1.01–1.07	.003
MELD score (1-U increment)	1.04	0.98–1.11	.170	1.00	0.94–1.07	.880
Pre-TIPS PSE (yes vs no)	4.21	2.24–7.91	.00001	3.83	1.96–7.49	.0001
PTFE-SG dilatation (>6 mm vs 6 mm)	2.74	1.49–5.02	.001	2.17	1.16–4.05	.01
Post-TIPS PCG <10 mm Hg (yes vs no)	2.98	1.71–5.20	.0001	1.89	1.04–3.44	.037
Model 2						
Indication (RA vs VH)	0.85	0.49–1.18	.570	0.99	0.56–1.75	.980
Sex (female vs male)	2.21	1.20–3.70	.009	1.83	1.03–3.25	.039
Age, *y* (1-U increment)	1.04	1.01–1.06	.004	1.04	1.01–1.07	.003
MELD score (1-U increment)	1.04	0.98–1.11	.170	1.01	0.95–1.07	.730
Pre-TIPS PSE (yes vs no)	4.21	2.24–7.91	.00001	4.18	2.28–7.68	.00001
PTFE-SG dilatation (>6 mm vs 6 mm)	2.74	1.49–5.02	.001	2.23	1.19–4.18	.01
Post-TIPS PCG reduction >50% (yes vs no)	2.70	1.47–4.96	.001	1.68	0.86–3.30	.130

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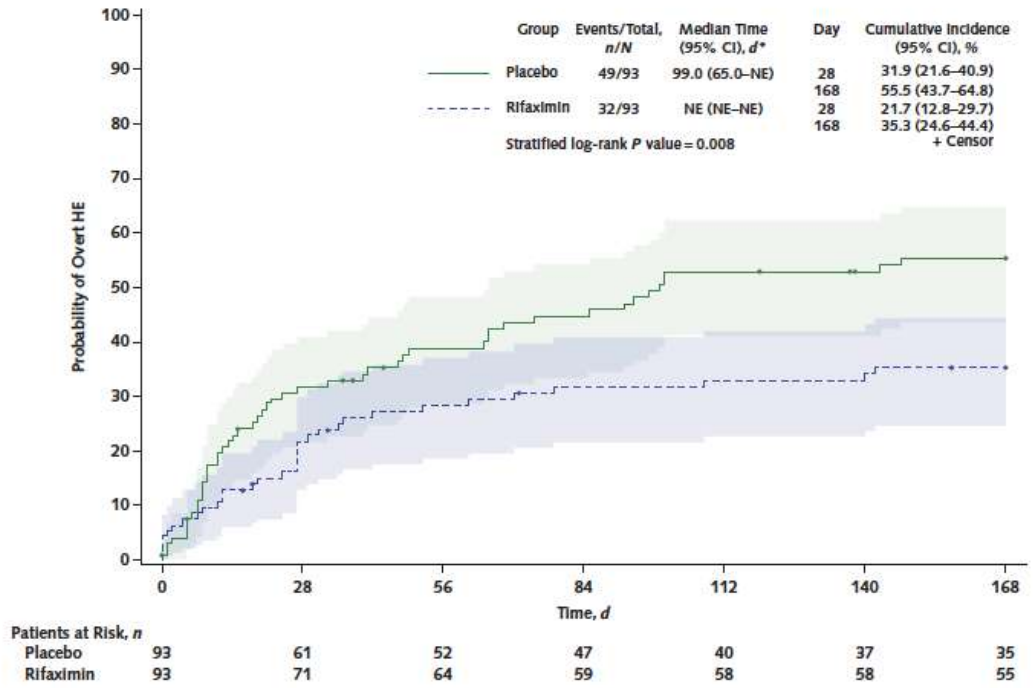
Prophylaxis of HE before TIPS



Recommendations

- In patients with cirrhosis without a history of HE, rifaximin may be considered for prophylaxis of HE already before non-urgent TIPS creation **(LoE 3, weak recommendation, consensus)**.
- In patients with cirrhosis with a history of HE, rifaximin should be considered for prophylaxis of HE before non-urgent TIPS placement **(LoE 2, strong recommendation, strong consensus)**.

RFX, 550 mg 2 fois par jour, 14 jours et 6 mois après le TIPS

Bureau et al. Annals of Internal Medicine 2021

EASL CPG, J Hepatol 2025

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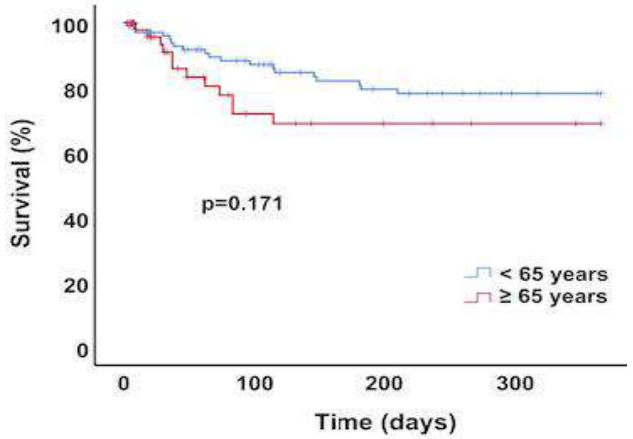
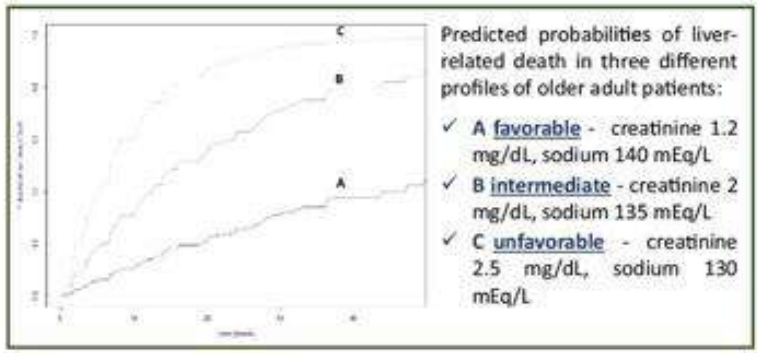
TIPS chez les sujets âgés



Mortality after TIPS in older adult cirrhotic patients

The indication to TIPS in older adult patients (≥70 years) is debated and a specific prediction model in this setting is lacking



Predicted probabilities of liver-related death in three different profiles of older adult patients:

- ✓ A favorable - creatinine 1.2 mg/dL, sodium 140 mEq/L
- ✓ B intermediate - creatinine 2 mg/dL, sodium 135 mEq/L
- ✓ C unfavorable - creatinine 2.5 mg/dL, sodium 130 mEq/L

We developed a prediction model (Elderly Patients Calculator TIPS, ExPeCT) to be applied to older adult patients candidate to TIPS:

https://promisepa.shinyapps.io/TIPS

Creatinine and sodium levels predict 1-, 2- or 3-year mortality following TIPS

- ExPeCT is helpful to identify patients with a post-derivative favorable outcome
- TIPS should not be precluded to carefully selected patients older than 70 years

Vizzutti, Celsa, et al. *Hepatology.*

HEPATOLOGY

Stockhoff L et la PLoS One 2020
Vizzutti F et al., Hepatology 2023

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TIPS work-up

Table 4. Recommended follow-up after TIPS creation.

	Before discharge	Between 4-6 weeks	M3	M6	M9	M12
General examination including cardiac and hepatic signs of decompensation	✓	✓	✓	✓	✓	✓
Clinical signs of HE and grading	✓	✓	✓	✓	✓	✓
Haemoglobin, platelet count, INR, serum bilirubin, serum albumin, transaminases, GGT, alkaline phosphatase, serum creatinine, serum sodium	✓	✓	✓	✓	✓	✓
Child-Pugh and MELD scores	✓	✓	✓	✓	✓	✓
Serum alpha fetoprotein				✓		✓
Doppler ultrasound		✓		✓		✓
Angiography and PPG measurement	Optional	Whenever shunt dysfunction is suspected clinically or at Doppler ultrasound				
Transthoracic echocardiography		Whenever cardiac decompensation is suspected				

GGT, gamma-glutamyltransferase; HE, hepatic encephalopathy; INR, international normalized ratio; MELD, model for end-stage liver disease; PPG, portosystemic pressure gradient.

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TIPS reduction or occlusion
TIPS revision

- Shunt reduction or occlusion
  - If signs of overshunting (cardia & liver failure, HE)
  - If competing collaterals, embolization first
- TIPS revision
  - After angiographic check
  - With dilation, restenting, embolization of collaterals if lack of efficacy

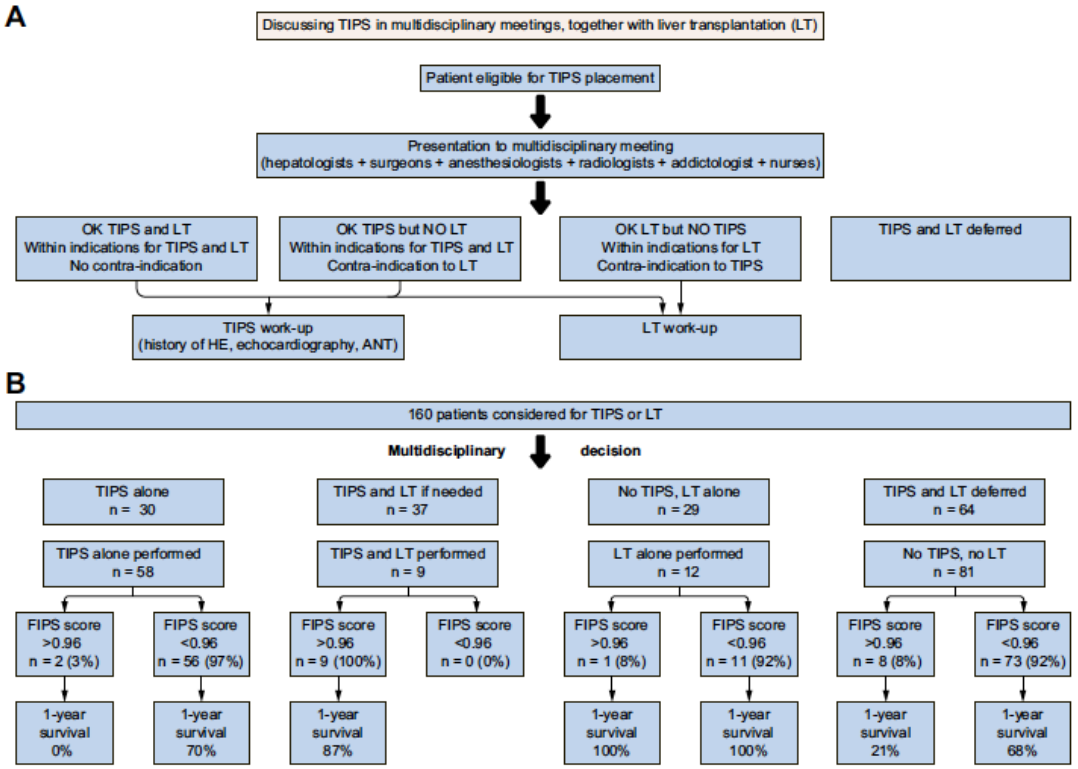
Recommendations

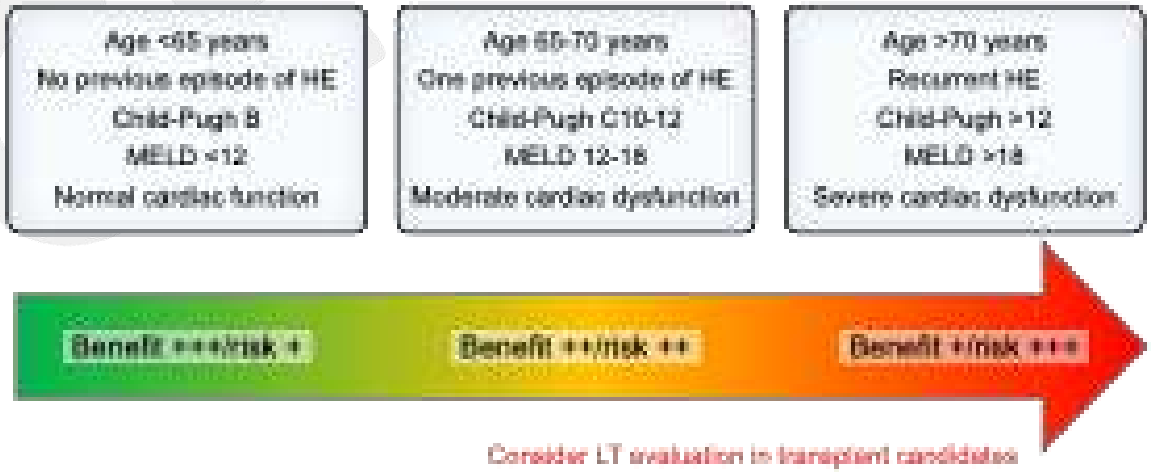
- In patients with acute clinical symptoms of over-shunting (e.g. parenchymal liver failure, cardiac failure) in the absence of competing collaterals, the TIPS should be reduced or occluded **(LoE 3, strong recommendation, strong consensus).**
- In patients with chronic clinical symptoms of over-shunting (e.g. more than three severe HE episodes or chronic HE despite optimal medical therapy) and in the absence of competing collaterals, the TIPS should be reduced or occluded **(LoE 3, strong recommendation, strong consensus).**
- In cases with significant competing collaterals (e.g. hepatofugal flow through collaterals despite a functioning TIPS), collateral embolisation should be performed prior to TIPS reduction or occlusion **(LoE 4, strong recommendation, strong consensus).**

EASL CPG, J Hepatol 2025

STG

Benefit/risk stratification in non emergent TIPS-always discuss TIPS & LT together





EASL CPG, J Hepatol 2025
Rudler M et al., J Hepatol 2021

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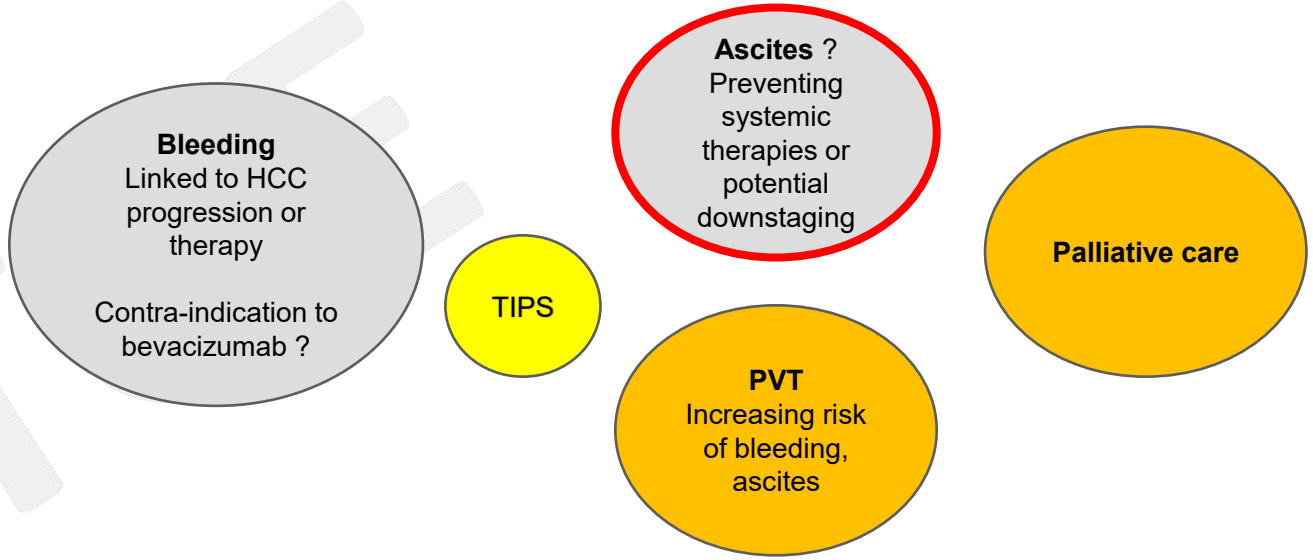
TIPS : new indications

- HCC

- The presence of advanced HCC is a relative contraindication and a TIPS may be considered on a case-by-case basis according to the prognosis of and treatment options for the HCC. TIPS creation through the tumour mass or in patients with tumoral portal vein invasion is not recommended **(LoE 3, strong recommendation, strong consensus).**



- PVT
- Pre surgery
- Bariatric surgery
- Cavernoma before LT
- Non-cirrhotic PHT
- Post LT …..

EASL CPG, J Hepatol 2025
Allaire M et al., et al. Liver International 2023
Allaire M et al., Hepatology 2022
Thabut D et al., J Hepatol 2022

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Conclusion

- Le TIPS est une avancée majeure ds la prise en charge des patients atteints de cirrhose
- Considérer le bénéfice/risque est indispensable, en considérant des critères comme la QdV
- Une discussion cas par cas, en incluant la discussion de TH, est nécessaire

STGE

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Remembering Jaume Bosch

It is with great sadness that we share the passing of Dr. Jaime Bosch, a cornerstone of the Baveno Cooperation and a beloved world leader in the study and care of patients with portal hypertension. Jaime has left behind a profound legacy in hepatology and in all our lives.

Jaime was a towering intellect whose research and vision transformed the field of portal hypertension. His work not only changed how we manage patients but also how we investigate portal hypertension, opening the door to novel approaches and therapies. But beyond his role as a pioneering investigator, Jaime was a passionate and caring teacher, having trained and inspired generations of clinicians and investigators who now carry his legacy forward across the world. At every meeting, his was the first voice we would hear asking insightful questions. We will miss that voice more than we can say.

Beyond his scientific brilliance, Jaime lived with passion and intensity. He loved opera, sailing, lively debate, and above all, the people around him. His devotion to his children and grandchildren and to Annalisa, his partner for many years, was unwavering.

Jaime Bosch will be remembered not only for what he discovered and taught us, but for how deeply he touched us. His legacy is forever woven into the fabric of Baveno, and into each of us.

We mourn his loss—and honor his spirit.