TIPS: Indicaciones y Complicaciones

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Outline

• TIPS in acute variceal bleeding
  – The concept of early-TIPS (preemptive TIPS) vs rescue TIPS

• TIPS for RA
  – The importance of patient selection
Suspected variceal bleeding

Vasoactive Drugs

Antibiotics, sufficient volume restitution, restrictive transfusion policy

Endoscopy (Diagnostic + ligation)

- control
  - Drugs 2-5 days
  - NSBBs + EVL

- failure
  - Balloon if required
  - TIPS
## Rescue TIPS in treatment failures

<table>
<thead>
<tr>
<th>Author</th>
<th>Patients</th>
<th>Child</th>
<th>Initial Control</th>
<th>Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mc Cormick</td>
<td>20</td>
<td>1/7/12</td>
<td>100%</td>
<td>55%</td>
</tr>
<tr>
<td>Jalan</td>
<td>19</td>
<td>3/3/13</td>
<td>100%</td>
<td>42%</td>
</tr>
<tr>
<td>Sanyal</td>
<td>30</td>
<td>1/7/22</td>
<td>100%</td>
<td>40%</td>
</tr>
<tr>
<td>Chau</td>
<td>112</td>
<td>5/27/80</td>
<td>98%</td>
<td>37%</td>
</tr>
<tr>
<td>Gerbes</td>
<td>11</td>
<td>1/3/7</td>
<td>100%</td>
<td>27%</td>
</tr>
<tr>
<td>Bañares</td>
<td>56</td>
<td>11/22/23</td>
<td>96%</td>
<td>28%</td>
</tr>
<tr>
<td>Azoulay</td>
<td>58</td>
<td>3/8/47</td>
<td>93%</td>
<td>30%</td>
</tr>
</tbody>
</table>

(93-100%)  (27-55%)
Treatment of Acute Variceal Bleeding

Suspected variceal bleeding → Vasoactive Drugs → Endoscopy (Diagnostic + ligation)

- Antitoxins, sufficient volume restitution, restrictive transfusion policy
- Drugs 2-5 days: NSBBs + EVL
- Control → TIPS
- Failure → Balloon if required

Should some high risk patients have a *preemptive* TIPS?
Early PTFE-TIPS vs Conventional Therapy in Patients at High-Risk of Failure. A Multicenter European Trial

63 high-risk patients with acute variceal bleeding: Child B + active bleeding or Child C (<14 points)

Vasoactive drugs + Endoscopic treatment + antibiotics

Randomized within 24h

Standard therapy
Standard secondary prophylaxis (n=31)

TIPS (10mm)
(n=32)
(within 24h:19; 48h:10; 72h:3)

Early TIPS group

Standard Treatment

Early PTFE-TIPS vs Conventional Therapy in Patients at High-Risk of Failure. A Multicenter European Trial

Primary end-point

Survival

Early PTFE-TIPS vs Conventional Therapy in Patients at High-Risk of Failure. A Multicenter European Trial

Encephalopathy

• In patients at high risk of failure or re-bleeding (CTP class C cirrhosis or CTP class B with active bleeding on endoscopy) who have no contraindications for TIPS, an “early” (pre-emptive) TIPS within 72 hours may benefit selected patients
Early-TIPS: What is New since AASLD guidance

International Variceal Bleeding Survey Group

- 2168 patients in 34 centers (mostly Europeans)
- 671 fulfilled criteria for early TIPS but only 81 received early TIPS (center-dependent)
- 80% ETOH
- Propensity score adjusted analysis

Hernandez-Gea Hepatology 2018
Survival

Child-Pugh B + Active Bleeding

Child Pugh C

Hernandez-Gea  Hepatology 2018
Hepatic Encephalopathy

Child-Pugh B + Active Bleeding

Child-Pugh C

Hernandez-Gea  Hepatology 2018
Optimal Selection of High Risk Patients with AVH

Problems with the High-risk criteria for Early-TIPS

• Child B: too low risk?

• Active bleeding: inconsistently evaluated
MELD and 6-week Mortality in AVH with Standard Therapy

Validated in series from Spain, Canada and France

Reverter et al, Gastroenterology 2014
Thabut et al, Liv Int 2018
Early TIPS and 6-week Mortality
International Variceal Bleeding Observational Study Group

Standard of Care

Early TIPS

Predicted mortality according to MELD (Reverter et al)

Hernandez-Gea  Hepatology 2018
Early TIPS and 6-week Mortality
Influence of Baseline Risk of Mortality on the Absolute Reduction in Mortality Achieved by Early TIPS

OR: 0.35

Kok & Abraldes, Sem Liv Dis 2018 (in press)
In patients at high risk of failure or re-bleeding (CTP class C cirrhosis or CTP class B with active bleeding on endoscopy) who have no contraindications for TIPS, an “early” (pre-emptive) TIPS within 72 hours may benefit selected patients.

- Benefit observed mainly in Child C patients
- Ideal candidates?
  - Child C<14 with possibility of rescue liver transplantation or with potential for reversibility (i.e. alcohol)
  - Patients with refractory ascites
  - Patients need an excellent heart function

AASLD Guidance 2016: Early TIPS
Outline

• TIPS in acute variceal bleeding
  – The concept of early-TIPS (preemptive TIPS) vs rescue TIPS

• TIPS for RA
  – The importance of patient selection
Uncovered TIPS vs LVP: Meta-analysis of RCTs

- Recurrence of ascites: 0.14 (0.08-0.26)
- Encephalopathy: 2.34 (1.41-3.87)
- Death: 0.90 (0.44-1.81)

D'Amico et al. Gastroenterology 2005; 129:1282
The Effects of TIPS on Sodium Excretion are not Immediate, and Might Increase for >1 yr

Wong F, Gastro 1997

Wong W, AJM 1999
TIPS vs Paracentesis in RA: Baseline Bilirubin and Effects on Mortality

Kok & Abraldes, 2018 Scientific American Hepatol (in press)
Management of RA: TIPS vs LVP

Key Exclusion criteria
- > 70 yrs old.
- >6 LVPs within the previous 3 m
- overt HE
- Congestive HF or PH
- severe liver failure, defined by INR 2, Bil >100 mmol/L or CP >12
- serum creatinine >250 mmol/L

Only RCT using covered TIPS

Bureau et al. Gastroenterology 2017
Management of RA: TIPS vs LVP

Only one RCT using covered TIPS

- Baseline Characteristics
  - 90% Alcohol
  - Mean Bil 17 mmol/L
  - Mean Cr 85
  - Mean INR 1.4
  - Mean MELD 12

Bureau et al. Gastroenterology 2017
Management of RA: TIPS vs LVP

Only one RCT using covered TIPS

Table 3. Clinical Outcomes in Patients According to Treatment Group

<table>
<thead>
<tr>
<th>Outcome</th>
<th>TIPS (n = 29)</th>
<th>LVP+A (n = 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of paracenteses per patient, mean ± SD</td>
<td>1 ± 1</td>
<td>10 ± 7***</td>
</tr>
<tr>
<td>Volume extracted, L/patient, mean ± SD</td>
<td>6 ± 10</td>
<td>64 ± 47***</td>
</tr>
<tr>
<td>Albumin infusion, g/patient, mean ± SD</td>
<td>39 ± 70</td>
<td>550 ± 450***</td>
</tr>
<tr>
<td>Days in hospital, mean ± SD</td>
<td>17 ± 28</td>
<td>35 ± 40*</td>
</tr>
<tr>
<td>Patients with OHE, n</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Episodes of OHE per patient, n, mean ± SD</td>
<td>1.6 ± 0.7</td>
<td>1.7 ± 0.8</td>
</tr>
<tr>
<td>Patients with OHE grade &gt;2, n</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Patients with PHT-related bleeding, n</td>
<td>0</td>
<td>6**</td>
</tr>
<tr>
<td>Patients with hernia-related complication, n</td>
<td>0</td>
<td>6**</td>
</tr>
<tr>
<td>Patients with HRS, n</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Patients with SSBP, n</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Patients with sepsis, n</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>HCC, n</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Bureau et al. Gastroenterology 2017
TIPS: Refinement

• Not all TIPS are created equal
  – Final PPG: if calculated with the atrium → overdilation
    (La Mura, Abraldes et al, Hepatology 2010)

PP gradient with atrial pressure (PAG) a mean of 3.2 mmHg higher than with IVC (PCG).
TIPS: Refinement

• Not all TIPS are created equal
  – Final PPG: if calculated with the atrium → overdilation (La Mura, Abraldes et al, Hepatology 2010)
  – 6 vs 8 vs 10 mm diameter
    • Less dilation → less encephalopathy
    • Results contradictory in terms of efficacy → most favor small diameter TIPS
TIPS: Refinement

Schepis, Vizzutti et al. CGH 2018
Management of RA with TIPS
Take Home Messages

• Careful patient selection
  – Excellent heart: no diastolic (E/A>1) or systolic dysfunction, no pulmonary hypertension
  – Preserved liver function (Bil <50)
  – No past recurrent HE
  – Age <65

• Bigger shunts → more complications
  – Gradient with IVC
  – 6-8 mm diameter shunts