HEMIPORTOCAVAL SHUNT AS A MEASURE TO EXPAND DONOR POOL BY ALLOWING SUCCESSFUL LIVING DONOR LIVER TRANSPLANTATION WITH SMALL-FOR SIZE GRAFTS

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INTRODUCTION

- GRWR ≥ 0.80 in Living Donor Liver Transplant (LDLT) is accepted norm
- High post-perfusion portal pressures (PP) / flow (PF) may adversely affect recipient outcome in small-for size (SFS) grafts
- Hemiportocaval shunt (HPCS) can significantly reduce PP/PF
- The precise utility of HPCS in LDLT remains undetermined

AIM OF STUDY

To study the outcomes of LDLT in SFS grafts (GRWR<0.80) with inflow modulation (IM) in the form of HPCS

MATERIAL AND METHODS

- Study Period: January 2012 to June 2018
- 1440 consecutive adult LDLT
- 306 were SFS graft with GRWR <0.80
- Study Group – 109 patients with HPCS as Inflow Modulation
- PP was measured in the dissection, an-hepatic and post-reperfusion phases.

Inflow modulation protocol based in GRWR and Target Post-reperfusion Portal Pressure (PP) ≤ 15 mmHg

- GRWR ≥0.8 - No Inflow modulation
  = 0.75-0.79 - Splenic artery ligation (SAL)
  < 0.75 - HPCS ± SAL
- No inflow modulation was done if PP in the dissection phase ≤ 15 mmHg

RESULTS

<table>
<thead>
<tr>
<th>GRWR</th>
<th>Study Group</th>
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<tbody>
<tr>
<td>&lt;0.75</td>
<td>HPCS-39 SAL-6 HPCS+SAL -1 No IM- 37</td>
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<tr>
<td>0.75-0.79</td>
<td>HPCS-52 HPCS+SAL-1</td>
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<tr>
<td>≥0.80</td>
<td>No inflow modulation (IM)</td>
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<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Transplantations</th>
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<td>2012-2017</td>
<td>1440</td>
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GRWR ≥ 0.80 (n=53)
GRWR 0.7-0.74 (n=81)
GRWR 0.75-0.79 (n=140)
GRWR ≥0.80 (n=990)

CLINICAL PROFILE

- Mean Age was 49±1.12 years
- Median MELD score was 13 (IQR10-18)
- HCC was present in 19.3% patients
- Most common etiology for ESLD- Ethanol (38%)

OPERATIVE PARAMETERS

- Most common graft used was Right Lobe Graft with Subtotal MHV
- PP in dissection phase – 25 mmHg (IQR:22-30)
- PP post-reperfusion – 14mmHg (IQR:13-22)

POSTOPERATIVE OUTCOMES

Small For Size Syndrome – 4.1%
Early allograft dysfunction – 10.1%
In hospital mortality – 16.5%

SHORT AND LONG TERM FOLLOW UP OF HPCS

- Shunt related intervention
  Partial shunt closer at 1 week in one patient
  Another patient- graft dysfunction at 4 week. PV flow steal and underwent shunt closer
- Shunt patency based on USG Doppler – 61.5% patients had spontaneous closure after 5 years follow up

CONCLUSION

Graft inflow modulation with HPCS makes it possible to use SFS grafts with equivalent outcomes as normal size graft , also expands live liver donor pool.

CONFLICT OF INTEREST - NONE