Multispecialty Collaboration Benefits Efforts at Expanding Donor Pools

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Background

- Historically, interferon-based antiviral therapy for hepatitis C (HCV) was contraindicated in extrahepatic transplantation
- Advances in HCV therapy have changed the paradigm
- Consideration of HCV therapy for patients who have undergone heart/kidney/lung transplantation
Background

- Heart failure patients are at high risk of mortality
- Escalating care and associated costs as their disease progresses
- Opportunities to expand the donor pool are welcomed
- Cardiology team not as experienced in HCV or the changed treatment paradigm
- Our experience in successful antiviral therapy for HCV in liver transplantation (LT) offers opportunities in other programs
Goals

• Parlay the experience in LT and the management of HCV into opportunity for successful donor expansion
• Reduce the number of discarded organs
• Educate and provide support for the heart transplant team to successfully use HCV exposed and infected grafts into naïve recipients
• Develop a monitoring and treatment pathway for HCV acquired at the time of heart transplantation (HT)
How can we increase utilization of donor organs?

Pharmacy
Medication access
Medication interactions

Finance
Insurance implications
Patient burden

Quality
Informed consent
Regulatory requirements

Administration
Treatment obligation
Transplant center responsibility

Collaboration

Transplant Coordinators
Waitlist management
Post-transplant monitoring

Providers
Initial concept
Clinical care for complex patients

Providers

How can we increase utilization of donor organs?

Finance
Insurance implications
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Quality
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Administration
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Pharmacy
Medication access
Medication interactions
Results

Total HT recipients: 59

Donor HCV Antibody (Ab) and Nucleic Acid Testing (NAT)

• HCV Ab+ / NAT-: 10
• HCV Ab+ / NAT+: 47
• HCV Ab- / NAT+: 2
Results

HCV Ab+/NAT- Donors: 10

• Median donor age: 33yo
• Public Health Services (PHS) Increased Risk: 70%
• Median recipient age: 57yo
• Recipient gender: 50% male
• Transient HCV antibodies found in 4 recipients
• No recipient has developed infection
Results

HCV Ab+/NAT+ Donors: 47

- Median donor age: 31yo
- PHS Increased Risk: 87%
- Median recipient age: 55yo
- Recipient gender: 74% male
- 4 patients deceased prior to treatment initiation or completion
Results

HCV Ab-/NAT+ Donors: 2

- PHS Increased Risk: 1
  - Recipient Viremia
- Not PHS Increased Risk: 1
  - No Recipient Viremia
Results

- HCV NAT+ grafts with follow-up: 45
- Recipients developed infection: 42
- Recipients with no evidence of infection: 3
- Days to detectable virus in recipient: 1-31 days post-HT
## Results

<table>
<thead>
<tr>
<th>Genotype Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotype 1a 23</td>
</tr>
<tr>
<td>Genotype 1b 3</td>
</tr>
<tr>
<td>Genotype 2 2</td>
</tr>
<tr>
<td>Genotype 3 8</td>
</tr>
<tr>
<td>Pending Genotype 5</td>
</tr>
<tr>
<td>Multiple Genotypes detected 1 (1a/3)</td>
</tr>
</tbody>
</table>
Results

• Patients that acquired HCV infection: 42
• Patients that completed treatment: 31
• Patients pending treatment: 8
• Patients currently undergoing antiviral therapy: 3
Results

• Treatment initiation after discharge from initial inpatient stay

• Median days to treatment: 55 days post-HT

• Treatment duration: 12-24 weeks
  • ledipasvir/sofosbuvir
  • glecaprevir/pibrentasvir
  • sofosbuvir/velpatasvir
## Results

### HCV PCR at Treatment Timepoint: 4 Weeks

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Total patients</td>
<td>33</td>
</tr>
<tr>
<td>Undetectable</td>
<td>19</td>
</tr>
<tr>
<td>Detectable &gt;15</td>
<td>3</td>
</tr>
<tr>
<td>Detectable &lt;15</td>
<td>9</td>
</tr>
<tr>
<td>Data not available</td>
<td>2</td>
</tr>
</tbody>
</table>
## Results

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients requiring treatment</td>
<td>42</td>
</tr>
<tr>
<td>End of treatment response (ETR)</td>
<td>31/31</td>
</tr>
<tr>
<td>Sustained virologic response (SVR) 4</td>
<td>30/30</td>
</tr>
<tr>
<td>Sustained virologic response (SVR) 12</td>
<td>27/27</td>
</tr>
<tr>
<td>Pending treatment</td>
<td>8</td>
</tr>
<tr>
<td>Mid-treatment</td>
<td>3</td>
</tr>
</tbody>
</table>
Potential Challenges

• Medication coverage
• Significant medication interactions (i.e., amiodarone)
• Complexity of medication adherence with inpatient administration
• Continuous education / communication with HT team
Conclusions

- HCV Ab+/NAT- grafts did not translate to recipient infection
- HCV NAT+ grafts did not universally translate to recipient infection
Conclusions

• Antiviral therapy for the treatment of HCV is well tolerated and successful in the heart transplant population

• HCV positive allografts offer an opportunity for expansion of the heart transplant donor pool
Thank you