A Systematic Review of Solid Organ Transplantation in Acute Presentations of Tropical Infectious Diseases

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Introduction

- We aim to understand the frequency, indications for, and outcome of SOT in the treatment of acute tropical infectious diseases presenting with fulminant organ failure by systematically mapping the existing literature.
- Fulminant life-threatening presentations of acute tropical infectious diseases may occur, and the degree of end-organ impairment may qualify patients for emergency solid-organ transplantation (SOT).
- However, SOT may not be beneficial in all cases as failure of the transplanted organ is only one possible cause of death1. The outcomes from such an intervention are largely unknown for many acute tropical infectious diseases.
- Due to a paucity of synthesized data, there is a knowledge gap around indications for and outcomes in SOT for severe acute tropical infectious diseases.

Methods

- We will be conducting a systematic review.
- PubMed, Embase, Scopus, and Cochrane, and LILACS were searched using combinations of search terms such as the following: “liver” or “hepatic” “transplant,” “yellow fever” “dengue,” “Plasmodium spp.,” and “Lepto”’ from database inception to September 30, 2019.

Results

Figure 1. PRISMA Flow Diagram

<table>
<thead>
<tr>
<th>Records Identified (n = 6911)</th>
<th>2013 Duplicates Removed</th>
<th>1379 studies screened against title and abstract</th>
<th>999 studies excluded</th>
<th>380 studies assessed for full-text eligibility</th>
<th>5 case report studies included in data synthesis table</th>
</tr>
</thead>
</table>

Table 1. Data Synthesis Table

<table>
<thead>
<tr>
<th>Study</th>
<th>Year of Publication</th>
<th>Organ</th>
<th>Tropical Disease(s)</th>
<th>Pathogen (Full Name)</th>
<th>Method of Diagnosis</th>
<th>Outcome (ex. Mortality/Survival; Temperature; Biochemical Parameter, etc.)</th>
<th>Study Type</th>
<th>Other Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Song, Alice Tuy-Wen</td>
<td>2018</td>
<td>Liver</td>
<td>Yellow Fever Virus (YFV), Fulminant Hepatitis (Acute Liver Failure)</td>
<td>Hepatitis A Virus (HAV)</td>
<td>Antibody Detection</td>
<td>Patient survived</td>
<td>Case Report</td>
<td>N/A</td>
</tr>
<tr>
<td>Shin, Kesil</td>
<td>2018</td>
<td>Liver</td>
<td>Fulminant Hepatitis (Acute Liver Failure)</td>
<td>Hepatitis E Virus (HEV)</td>
<td>Antibody Detection</td>
<td>Patient survived; it took 2.5 months for HEV RNA to become undetectable Patient was discharged from the hospital on postoperative day 4; 8 months post-transplant, the graft function was normal &amp; HEV RNA had remained negative</td>
<td>Case Report</td>
<td>N/A</td>
</tr>
<tr>
<td>Teran Gondotor, Elena</td>
<td>2018</td>
<td>Liver</td>
<td>Fulminant Hepatitis (Acute Liver Failure)</td>
<td>Hepatitis E Virus (HEV)</td>
<td>Antibody Detection</td>
<td>Patient survived; negative HEV RNA; One year later; patient is in excellent post-transplant condition on treatment with bosentin</td>
<td>Case Report</td>
<td>In this case, diagnosis of HEV was confirmed after liver transplant was performed</td>
</tr>
<tr>
<td>Li, Yu Wei</td>
<td>2017</td>
<td>Liver</td>
<td>Hepatitis E Infection (Acute Liver Failure)</td>
<td>Hepatitis E Virus (HEV) genotype 3</td>
<td>Antibody Detection</td>
<td>Patient survived; no HEV readmission 4 years post liver transplant</td>
<td>Case Report</td>
<td>N/A</td>
</tr>
<tr>
<td>Park, Won H.</td>
<td>2008</td>
<td>Liver</td>
<td>Hepatitis E Infection (Acute Liver Failure)</td>
<td>Hepatitis E Virus (HEV)</td>
<td>Antibody Detection</td>
<td>Survival</td>
<td>Case Report</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Discussion & Conclusion

1. Due to a paucity of synthesized data, there is a knowledge gap around indications for and outcomes in SOT for severe acute tropical infectious diseases.
2. At this time, most published literature on SOT in acute tropical infectious diseases is related to liver transplantation for acute Hepatitis E Virus infection. All 5 cases survived.

References


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