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Depression is Associated with Weight Gain in Patients Transplanted for NASH Cirrhosis but Not Other Etiologies of Cirrhosis

Jose Hernandez Roman, Steven Shen, Samarth Patel, Mohammad B. Siddiqui, Anchalia Chandrakumaran, Masoud Faridini, Emily Lee, Emily Zhang, and Mohammad S. Siddiqui.

Background

- Weight gain after liver transplantation (LT) is common, particularly in patients transplanted for NASH cirrhosis, and is associated with reduced survival.[1]
- While immunosuppressant use is often implicated as a key driver of post-LT weight gain, published literature has failed to support this assertion.[2]
- In non-LT patients, presence and sub-optimal management of depression is closely associated with weight gain and obesity.[3] The impact of depression as predictor of post-LT weight gain is currently not known.
- The aim of the present study was to bridge this gap in knowledge by evaluating the relationship between depression, liver disease and weight change after LT.

Methods

- All adult patients receiving LT between 7/2007 to 7/2017 were included in the analysis (N= 384). Patients with graft failure or death within 6 months after LT were excluded.
- Baseline weight was weight 2 weeks after LT to avoid contribution of peri-transplant edema.
- All patients meeting criteria were followed every 6 months in clinic where vital sign, weight, demographics, laboratory, medical history, anti-depressant use, and psychosocial history was collected.
- Screening for depression was performed by a psychologist or psychiatrist using DSM-IV/V guidelines.

Results

<table>
<thead>
<tr>
<th></th>
<th>HCV</th>
<th>ETOH</th>
<th>NASH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, year</td>
<td>57.4±5.7</td>
<td>54.6±8.6</td>
<td>58.8±7.6</td>
</tr>
<tr>
<td>Gender</td>
<td>Male, n (%)</td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td></td>
<td>186 (81.9)</td>
<td>41 (18.1)</td>
<td></td>
</tr>
<tr>
<td>BMI, kg/m²</td>
<td>26.0±5</td>
<td>24.1±4.8</td>
<td>27.9±5.1</td>
</tr>
<tr>
<td>Diabetes, n (%)</td>
<td>66 (29.1)</td>
<td>19 (24.4)</td>
<td>47 (59.5)</td>
</tr>
<tr>
<td>Hypertension, n (%)</td>
<td>106 (46.7)</td>
<td>43 (55.1)</td>
<td>55 (69.5)</td>
</tr>
<tr>
<td>Dyslipidemia, n (%)</td>
<td>24 (11.4)</td>
<td>15 (19.7)</td>
<td>35 (46.1)</td>
</tr>
<tr>
<td>Depression, n (%)</td>
<td>60 (30.2)</td>
<td>18 (26.1)</td>
<td>27 (35.5)</td>
</tr>
</tbody>
</table>

Figure 1: NASH, HCV, and ETOH with Depression vs No Depression

Figure 2: Treated vs Untreated Depression in NASH Population

Conclusion

- Presence and under-treatment of depression are associated with more profound weight gain in patients transplanted for NASH cirrhosis, likely reflecting poor coping mechanisms.
- Additional trials with aggressive screening and treatment of depression in patients transplanted for NASH cirrhosis are essential to mitigate post-LT weight gain.

Reference