Early Experience and Cost with Transcarotid Arterial Revascularization at an Urban Teaching Hospital

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References

Introduction
- Transfemoral carotid artery stenting (TFAS) is reserved for patients that are high risk for carotid endarterectomy (CEA)
- TFAS incurs a 3-4% 30-day stroke rate
- Transcarotid arterial revascularization (TCAR) was developed to mitigate complications of distal plaque embolization
- Current data demonstrates a 1% 30-day and 2-3% 1 year stroke rate for TCAR and CEA, lower than TFAS
- TCAR mitigates risk of cranial nerve injury compared to CEA
- Paucity of literature on cost for TCAR

Methods
- Retrospective chart review of patients who underwent TCAR Aug 1, 2019 – Feb 1, 2020 at our institution
- Compared cost for entire hospital stay of TCAR vs CEA vs TFAS
- TCAR cost obtained through hospitals finance department
- Cost data for CEA & TFAS obtained from 2018 Medicare cost reports

Table 1: Total Hospital Cost of TCAR compared to CEA and TFAS

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<thead>
<tr>
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<th>TCAR</th>
<th>CEA</th>
<th>TFAS</th>
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<tbody>
<tr>
<td>Margin ($)</td>
<td>4,933</td>
<td>2,853</td>
<td>6,312</td>
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<tr>
<td>Cost ($)</td>
<td>10,343 ± 2,558</td>
<td>8,975 ± 4,943</td>
<td>9,012 ± 9,840</td>
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<td>Avg Charge ($)</td>
<td>60,043 ± 14,677</td>
<td>43,716 ± 49,773</td>
<td>36,606 ± 43,798</td>
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<tr>
<td>Avg Payment ($)</td>
<td>15,276 ± 8,374</td>
<td>11,828 ± 4,350</td>
<td>15,324 ± 5,579</td>
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<td>LOS (days)</td>
<td>1.8 ± 1.2</td>
<td>1.85 ± 2.5</td>
<td>1.78 ± 1.7</td>
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<tr>
<td>Age</td>
<td>72.9 ± 6</td>
<td>74 ± 4.4</td>
<td>76 ± 5.6</td>
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<td>DRG (Avg Payment, $)</td>
<td>27,760 (n=1)</td>
<td>21,899 ± 10,803 (n=8)</td>
<td>20,053 ± 7,888 (n=2)</td>
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Discussion
Local TCAR cases
- Our early experience demonstrates good outcomes consistent with national data demonstrating low morbidity for TCAR
  - 0% 30-day stroke, 5% 4 month stroke (n=1)
  - Our one morbidity (stroke) is unlikely related to the procedure TCAR given that was hemorrhagic and 3 months later.

Cost
- TFAS and TCAR had similar payments, but TFAS had a lesser cost creating a higher margin for TFAS
- In time, we would expect TCAR cost to decrease, thereby increasing margin
- 3 patients were initially coded with the incorrect DRG, were re-billed due to this study, increasing total payment by $11,033
  - Given TCAR’s recent introduction, we recommend institutions pay particular attention to billing/reimbursement

Conclusions
TCAR profit margin is inferior to TFAS. However, further study is needed to evaluate the long term impact on cost of the increased stroke rate in TFAS compared to TCAR.

References