Morbidity Mortality and Outcomes after Reoperative Bariatric Surgery in the USA
Disclosures

- Member of Executive Council American Society for Metabolic and Bariatric Surgery (mild)

American Society for Metabolic and Bariatric Surgery Disclosures:

- Ethicon - Educational Grant – Major
- Medtronic – Educational Grant – Major
- Apollo Endosurgery – Educational Grant – Major
- W.L. Gore -Educational Grant – Major
- Olympus – Educational Grant – Major
- NovoNordisk – Educational Grant – Major
- Bariatric Advantage - Meeting Sponsorships – Major
- KVK Tech – Meeting Sponsorships – Major
- Karl Storz – Meeting Sponsorships – Minor
- USGI – Meeting Sponsorships – Minor
- ConMed – Meeting Sponsorships – Minor
- Mederi – Meeting Sponsorships – Minor
Background

- Outcomes of re-operative bariatric were studied by a task force of the American Society for Metabolic and Bariatric Surgery (ASMBS)

- Reoperations were divided into
  - Corrective, (index and reoperation listed by same name)
  - Conversion, (index and reoperation listed by different names)
    - Example: Band was converted to RYGB
Volume Distribution of Primary and Reoperative Bariatric Operations

All Bariatric Operations: 451,485

Primary Operations: 420,753

Reoperations: 28,683

Corrective Operations: 19,970

Conversions: 8,750
Length of Stay (days)

<table>
<thead>
<tr>
<th>LOS</th>
<th>Primary Operation</th>
<th>Re-operations</th>
<th>Corrective</th>
<th>Conversions</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean (SD)</td>
<td>1.78435 (4.94)</td>
<td>2.29 (5.95)</td>
<td>2.04 (6.44)</td>
<td>2.86 (4.58)</td>
</tr>
<tr>
<td>median (IQR)</td>
<td>2 (1 - 2)</td>
<td>1 (0 - 3)</td>
<td>1 (0 - 2)</td>
<td>2 (1 - 3)</td>
</tr>
</tbody>
</table>
Wt. loss after Conversion at 1 yr. by operation

<table>
<thead>
<tr>
<th>Operation</th>
<th>Percent WL</th>
<th>Percent EWL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGB</td>
<td>10.88</td>
<td>21.62</td>
</tr>
<tr>
<td>SG</td>
<td>15.54</td>
<td>33.33</td>
</tr>
<tr>
<td>RYGB</td>
<td>21.23</td>
<td>42.21</td>
</tr>
<tr>
<td>DS</td>
<td>23.02</td>
<td>43.86</td>
</tr>
</tbody>
</table>
## Comorbid Conditions

<table>
<thead>
<tr>
<th>% decline from baseline</th>
<th>Primary Operation (n=260802)</th>
<th>Re-operations (n=16010)</th>
<th>Conversions (n=4974)</th>
<th>Corrective (11046)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>53.25%</td>
<td>49.59%</td>
<td>50.34%</td>
<td>49.25%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>82.97%</td>
<td>72.25%</td>
<td>71.43%</td>
<td>72.58%</td>
</tr>
<tr>
<td>Sleep Apnea</td>
<td>66.63%</td>
<td>60.92%</td>
<td>59.34%</td>
<td>61.65%</td>
</tr>
<tr>
<td>GERD</td>
<td>74.40%</td>
<td>64.72%</td>
<td>62.35%</td>
<td>65.92%</td>
</tr>
<tr>
<td>Lipids</td>
<td>69.77%</td>
<td>62.21%</td>
<td>62.93%</td>
<td>62.29%</td>
</tr>
</tbody>
</table>
Severe Adverse Events

30-Day SAE

- Primary: 6774 (1.61%)
- Re-operations: 617 (2.15%)
- Corrections: 332 (1.66%)
- Conversions: 285 (3.26%)

1-Yr SAE

- Primary: 7872 (1.87%)
- Re-operations: 695 (2.42%)
- Corrections: 379 (1.9%)
- Conversions: 316 (3.61%)
Mortality Rates

30-Day Mortality

<table>
<thead>
<tr>
<th></th>
<th>Primary</th>
<th>Re-operations</th>
<th>Corrections</th>
<th>Conversions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death at 30 days</td>
<td>408 (0.1%)</td>
<td>41 (0.14%)</td>
<td>23 (0.12%)</td>
<td>18 (0.21%)</td>
</tr>
<tr>
<td>Death at 1 year</td>
<td>704 (0.17%)</td>
<td>74 (0.26%)</td>
<td>47 (0.24%)</td>
<td>27 (0.31%)</td>
</tr>
</tbody>
</table>

I-Yr Mortality

- Primary
- Re-operations
- Corrections
- Conversions

30-Day Mortality

1-Yr Mortality
Summary

- 6.3% of operations in the database were reoperations
  - 30% of these were conversion operations

- The reoperative group was
  - Mean length of stay was 2.3 days
  - Severe adverse events at 30 days were 1.86% and at 1 year 2.42%
  - Percent excess weight loss at 1-year (36%)
  - 30-day mortality rate (0.14%)
  - 1-year mortality rate (0.26%)
  - Many comorbidities resolved after reoperations.
Conclusions

- Most bariatric surgery patients do not need reoperations. Among those who do, the complication rate is low, acceptable and with satisfactory outcomes.