Mild Sleep Apnea – To Treat, or Not to Treat?

Panel Discussion

Drs. Nancy Collop, Aneesa Das, Visasiri Tantrakul, and David Schulman
What causes this transformation?

• 87 year-old man
  – Mid-stage Alzheimer’s disease
    • “Pleasantly demented”
    • Institutionalized for lack of independent ADLs
  – Well-controlled HTN (on atenolol and HCTZ), diabetes controlled on oral hypoglycemic agent, no coronary or stroke history

• Polysomnogram
  – AHI 13/hr
  – Nadir saturation 86%
  – Hypoxic burden 1.6%
Mild Obstructive Sleep Apnea Syndrome Should be Treated

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Mild Obstructive Sleep Apnea Syndrome Should Not Be Treated

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David Geffen School of Medicine, University of California, Los Angeles, CA
The answer

Or maybe not...
Metrics of disease severity

• Presence of sleepiness
  – ESS
  – Other metrics of impairment

• Oxygenation
  – Nadir
  – “Area under the curve” (i.e., hypoxic burden)
  – Mean

• AHI
  – Include RERAs?
Background – What’s a hypopnea?

• “Chicago Criteria” (1999)
  – A clear decrease (>50%) from baseline in amplitude for 10 seconds OR
  – a clear amplitude reduction (<50%) for 10 seconds with a > 3% desaturation or an arousal

• AASM Clinical Practices Review Committee (2001)
  – Abnormal respiratory event ≥ 10s with a ≥ 30% reduction in thoracoabdominal movement or airflow AND with a ≥ 4% oxygen desaturation (Definition employed by SHHS and adopted by Medicare)

• AASM Practice Parameters Update (2005)
  – Clinical – Adopted the SHHS/Medicare definition
  – Research - clear amplitude reduction (<50%) x 10 seconds w/ > 3% desaturation OR arousal

• AASM Manual (2007)
  – Recommended – Adopted the SHHS/Medicare definition
  – Alternative - a clear amplitude reduction (<50%) for 10 seconds with a ≥ 3% desaturation OR an arousal

• AASM Current
  – Recommended – ≥ 10s with a ≥ 30% reduction in airflow AND a ≥ 3% oxygen desaturation OR arousal
  – Alternative - ≥ 10s with a ≥ 30% reduction in airflow AND a ≥ 4% oxygen desaturation OR arousal
Table 2—Apnea Hypopnea Indices and Hypopnea Indices Using Different Hypopnea Scoring Criteria

<table>
<thead>
<tr>
<th>Hypopnea Definition</th>
<th>AHI (/h)</th>
<th>HI (/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago</td>
<td>25.1 (11.1, 48.5)</td>
<td>16.3 (7.8, 26.4)</td>
</tr>
<tr>
<td>Recommended</td>
<td>8.3 (2.1, 26.4)</td>
<td>2.2 (0.5, 6.6)</td>
</tr>
<tr>
<td>Alternative</td>
<td>14.9 (5.5, 37.4)</td>
<td>7.2 (2.4, 15.0)</td>
</tr>
</tbody>
</table>

Values are median (interquartile range). P < 0.001 for all pair-wise comparisons.

Table 4—Equivalent AHI by Method for Various AHI Cut-Points

<table>
<thead>
<tr>
<th>Parameter</th>
<th>AHI&lt;sub&gt;Chicago&lt;/sub&gt; (events/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Equivalent AHI&lt;sub&gt;Rec&lt;/sub&gt;</td>
<td>1.4</td>
</tr>
<tr>
<td>Sensitivity (%)</td>
<td>87.2</td>
</tr>
<tr>
<td>Specificity (%)</td>
<td>85.2</td>
</tr>
<tr>
<td>Equivalent AHI&lt;sub&gt;Alt&lt;/sub&gt;</td>
<td>2.8</td>
</tr>
<tr>
<td>Sensitivity (%)</td>
<td>91.6</td>
</tr>
<tr>
<td>Specificity (%)</td>
<td>92.6</td>
</tr>
</tbody>
</table>
The Charge

• Help Us!

• Can we identify elements on the history, physical examination or polysomnogram of patients with non-severe apnea to identify a subpopulation of people in whom it is medically justifiable to withhold therapy?
Case #1

- 46 year-old woman
  - Referred for fatigue, snoring
    - ESS 14
    - Works in development office
    - BMI 36
- PSG
  - AHI 12/hour
  - Nadir saturation 91%
Case #2

- 39 year-old man
  - “I think I don’t sleep well”
  - Not frankly tired; ESS 6
  - Reports irritability, memory worsening
  - Bloodwork (including testosterone level) unremarkable
  - BMI 26, takes atorvastatin for dyslipidemia and atenolol for HTN
- PSG
  - AHI 6/hour
    - RDI (including subtle events not associated with desaturation) 20/hour
  - No hypoxic burden
Case #3

- 58 year-old man referred to clinic for snoring and witnessed apnea
  - Non-smoker, otherwise healthy, gets annual “executive physical”, BMI 27.4
  - Takes no regular medications
  - ESS 4
  - Normal psychomotor vigilance task results

- PSG
  - AHI 16/hour
  - Nadir saturation 82%
  - Hypoxic burden 3.8%
Question: Would you Treat?

A) Yes  B) No

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Our Discussants

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To Arms!

Would you treat?
Why or why not? Evidence?
Treatment options (as time allows)
General Principles

Who do you treat?
Case #1

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“At times, you may feel that you have found the correct answer. I assure you that this is a total delusion on your part. You will never find the correct, absolute and final answer.”

Professor Kingsfield, The Paper Chase