CHEST Congress 2019 | Thailand
Bangkok | 10-12 April

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%

The Controversy Formalized

Mild Obstructive Sleep Apnea Syndrome Should be Treated

Lee K. Brown, MD.

Sleep Disorders Center, University of New Mexico, Albuquerque, NM

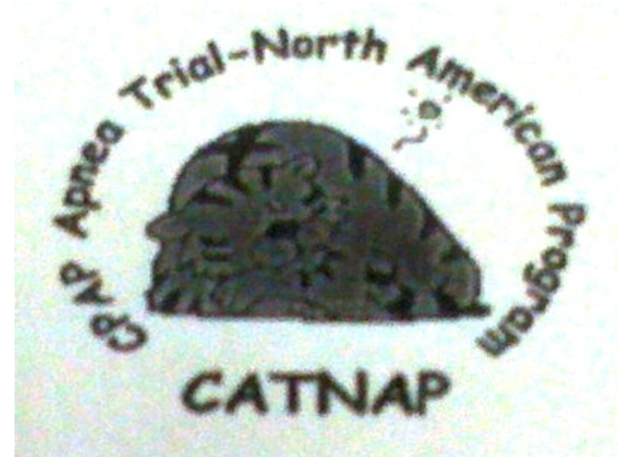
Mild Obstructive Sleep Apnea Syndrome Should Not Be Treated

Michael R. Littner, M.D

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

The answer

Apnea
Positive
Pressure
Long-term
Efficacy
Study



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

Hypopnea Definition	AHI (/h)	HI (/h)
Chicago	25.1 (11.1, 48.5)	16.3 (7.8, 26.4)
Recommended	8.3 (2.1, 26.4)	2.2 (0.5, 6.6)
Alternative	14.9 (5.5, 37.4)	7.2 (2.4, 15.0)

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

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

	$AHI_{Chicago}$ (events/h)		
Parameter	**5**	**15**	**30**
Equivalent AHI_{Rec}	1.4	4.4	10.8
Sensitivity (%)	87.2	82.5	91.0
Specificity (%)	85.2	82.1	89.9
Equivalent AHI_{Alt}	2.8	8.9	18.4
Sensitivity (%)	91.6	90.3	95.5
Specificity (%)	92.6	90.6	95.2

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

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

Question: Would you Treat?

A) Yes

B) No

- 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

Question: Would you Treat?

A) Yes

B) No

- 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%

Our Discussants

CHEST Congress 2019 | Thailand
Bangkok | 10-12 April

Nancy Collop, MD

Emory University School of Medicine

Aneesa Das, MD

The Ohio State University School of Medicine

Visasiri Tantrakul, MD

Ramatibodi Hospital, Mahidol University

Brendon Yee, MD

University of Sydney

To Arms!

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

General Principles

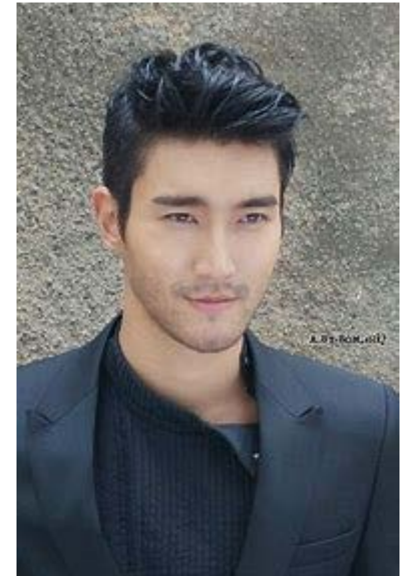
Who do you treat?

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%

"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