Approaching Difficult Patients
Convincing Your Patient To Use PAP Therapy

David W. Kohls, APNP
Objectives

- Define adherence to PAP therapy and recognize the relatively high rate of non-adherence
- To identify equipment and technology factors which can influence adherence
- Recognize/understand how to use treatment monitoring data
- Identify patient factors which influence adherence to PAP therapy
- Recognize principles of behavioral therapies which can be used to improve adherence to PAP therapy
Disclosure

I have no actual or potential conflicts of interest in relation to this program/presentation.

David W. Kohls, APNP
Adherence to PAP Therapy

- Defined as use for at least 4 hours, 70% of nights
- Greater than 6 hours of use results in normal levels of objective and subjective measures of daytime sleepiness, memory, and daily functioning
- 50-60% of patients are adherent to PAP therapy
- 29-83% of patients are non-adherent to PAP therapy
- The decision is usually made during the first week of therapy
- Use increases gradually once the decision to adhere is made
- The average use of PAP therapy is approximately five hours per night
PAP or No PAP?

- 2006 AASM Practice Parameters
  - PAP therapy is an option in mild OSA
- Mixed results in studies of outcome
  - PAP reduces AHI, but does not necessarily reduce BP or improve EDS, mood, or quality of life
  - Of 32 patients with AHI < 10, ten had improved quality of life at 4 weeks
  - At 3 months, only 4 continued to adhere to PAP therapy
Important to correlate AHI with symptoms and co-morbidities

As many as 25% of sleep patients have more than one sleep disorder

Medicare Rules

Examples of “overtreatment”
There Are Alternatives To PAP Therapy

Oral Appliances

- AASM/AADSM 2015 Guidelines
  - OA should be prescribed, rather than no therapy, for patients requesting treatment for primary snoring (STANDARD)
  - A qualified dentist should use a custom, titratable device (GUIDELINE)
  - Consider OA for patients who are intolerant of PAP therapy or prefer alternative therapy (STANDARD)
  - Qualified dentist provides oversight of treatment and periodic follow up visits with sleep specialist (GUIDELINE)
  - Follow up testing (GUIDELINE) (24)
Alternatives To PAP Therapy (cont.)

Weight Reduction

- A 10% reduction in weight leads to a 26% reduction in RDI (23)
- Other benefits
  - Lowered BP
  - Improved pulmonary function
  - Improved snoring and sleep architecture
  - Possible reduction in PAP pressure requirement
Alternatives To PAP Therapy (cont.)

- Positional Therapy
- Winx Therapy (Negative pressure system)
- Tongue Retaining Devices
- Nasal Microvalves
- Surgical Treatments
- Hypoglossal Nerve Stimulation
Introducing PAP Therapy to Patients
I HAVE TO WEAR THIS CPAP MACHINE AT NIGHT

BECAUSE OF MY SLEEP APNEA.
Introducing PAP Therapy to Patients

- Timing the introduction after diagnosis
- The decision to adhere to PAP therapy is usually made in the first week
- Patients’ first impression after PAP titration predicts adherence (9)
Determining Treatment Pressure Requirements
Full night attended PSG titration

- Preferred approach over other titration strategies (10)
Split-night studies

- Less costly, more convenient for the patient, and reduces delay in starting home therapy
- Might underestimate severity and titration might be incomplete (REM, body position)
- Fewer opportunities for patient education
In-Home Titration

- Use of auto-titrating CPAP can be as effective as attended titration
- Reduces time from diagnosis to starting home therapy
  - Delays determination of optimal treatment pressure
- Reported AHI is not the same as AHI determined by PSG
  - Event detection algorithms vary considerably among manufacturers (11)
  - Treatment emergent central apneas and other factors affecting airflow
  - Risk of under or over treatment
- Follow up testing of oxygen saturation is often needed
- Major disadvantage: Absence of a technologist who can choose, adjust, and change the interface if needed
Which Method is Best?
Interpreting Therapy Monitoring Data
Excessive Pressure?

Inadequate Humidity?

Other Sleep Disturbances?
Naïve to CPAP
Treatment
Emergent Central Apneas
Discontinuation of Nasal Steroid Spray
Mystery Solved
Shoulder Surgery
Mask Fit Problem
REM Behavior Disorder
With PLMDS
Control of RLS/PLMS
Which Mode of PAP Therapy is Best?

- CPAP, Auto CPAP, BiPAP-S, ST, Auto BiPAP, AVAPS, ASV
- Pressure ramping, EPR
  - Has not been proven to increase adherence (8)
- Fixed CPAP is suggested as first-line treatment for most patients with OSA (1)
- There is little difference between fixed or APAP with regard to efficiency or adherence in uncomplicated moderate to severe OSA (2)
Figure 1. Individual and average changes in SAP (SBP) in patients treated with CPAP or APAP. B = baseline. *p < 0.05. Average data are expressed as mean ±SD.

Figure 2. Individual changes in DBP (DAP) in patients treated with CPAP or APAP. See Figure 1 for expansion of abbreviations.
APAP can be sub-optimal for some patients
Which Mode Of PAP Therapy?

- BiPAP-S, BiPAP-ST, AVAPS, ASV used in certain subgroups
  - Chronic respiratory insufficiency
    - COPD
    - Neuromuscular diseases
  - Chronic opioid use
  - Central sleep apnea
    - SERVE-HF Study
  - Insurance coverage issues
Which Mode Of PAP Therapy?

- BiPAP for uncomplicated OSA
  - Sometimes used during sleep studies if because of mask leaks or if the patient has difficulty tolerating higher pressures
  - Some patients do not do well because their breathing pattern is not “in sync” with the machine’s timing
  - Improving the mask fit and starting home therapy at lower pressures might result in CPAP being effective
  - However, some patients prefer BiPAP
    - Krakow, et al. found that men “greatly preferred” (85% vs 15%) BiPAP over CPAP, whereas only a small percentage of women preferred BiPAP over CPAP (4)
We All Don’t Breathe The Same

Gender Differences

- Women tend to have less severe OSA than women
  - However, the consequences are at least the same, or worse
    - Greater endothelial dysfunction
    - More likely to develop anxiety and depression
- Men have a greater response to hypercapnia
  - However, they hypo-ventilate when they return to sleep which leads to airway instability (6)
  - Women might preserve ventilation more efficiently than men during hypocapnia (5)
- Episodes of upper airway resistance and flow limitation that do not meet the criteria for apneas/hypopneas are more common in women. Women have less pharyngeal fat and lower soft tissue volume in the neck
Can insomnia cause sleep disordered breathing?

- Krakow, B, et al. found that 80-90% of patients with insomnia had SDB (7)
  - PTSD patients had normal sleep prior to their traumatic experience
- Noise induced sleep fragmentation can increase upper airway collapsibility (8)
- Periodic Limb Movements and nonspecific arousals
PAP Equipment/Technology Factors

Mask/Interface Fit

Bob finally gets his mask to fit right!
PAP Equipment/Technology Factors

- Mask leak and discomfort is significantly higher in non-adherent patients
PAP Equipment/Technology Factors

Humidification

- PAP therapy does not work well if there is nasal/upper airway congestion
- Irritation from cold/dry air causes congestion and/or rhinorrhea
- Patients > 60 are 5x more likely to require heated humidification
- Patients taking 2 or more medications are 6x more likely to require HH
- Patients with chronic mucosal disease are 4x more likely to need HH. Treat underlying condition
- Cool rooms – Rainout
- Patients misunderstand symptoms of inadequate humidification
- Examples
PAP Equipment/Technology Factors

- Impact on bed partner
  - Noise
    - Newer machines are very quiet
    - Mask Leak
  - Air impacting partner
    - Exhaust port diffusers
PAP NAP

- Brief daytime procedure (100 minutes)
- Provides opportunities for mask desensitization, trial of interfaces, and PAP exposure
- Provides an opportunity to identify behavioral obstacles

Patient Factors Affecting Adherence

- No single factor has been consistently identified as predictive of adherence

- Weaker relationship
  - Age, sex, marital status, and socioeconomic status
  - Mood disorders, stress, anger
  - Severity (AHI)
Patient Factors (cont.)

- Stronger relationship
  - Degree of reported daytime sleepiness
  - Severity of oxyhemoglobin desaturation during sleep
Self-referral versus partner referral

“It’s a taser. It’s for your snoring.”
Patient Factors (cont.)

- Patient education with a sleep specialist (15) (17)
- Lack of claustrophobia, nasal airflow problems, presence of problem solving skills, and optimism regarding the benefit of PAP therapy
Behavioral factors such as self-efficacy and social support have the greatest influence on compliance (16).

**Self-efficacy**
- Defined as a positive motivation and confidence to engage in healthy behavior.
Standard Versus Intensive Patient Support

- Intensive support may result in greater adherence and symptom improvement over standard support (12)
Standard Support

- Pre-testing education
- 24 hour follow up phone call
- Follow up visits at 1, 3, and 6 months
Intensive Support

- Home pre-test education
- Additional two nights of CPAP titration in the sleep center
- Nurse home visits at 7, 14, 28 days and at 4 months
Cognitive Therapies

Transtheoretical Model

People fall along a dynamic continuum of motivational readiness to change current behavior

- Pre-contemplation (Not thinking about changing)
- Contemplation (Thinking about change, but not trying)
- Preparation (Beginning to make changes slowly)
- Action (Actively engaging in regular behavior change)
- Maintenance (18)
Social Cognitive Theory

- Focuses on problem solving skills, coping skills, goal setting, self-efficacy, and outcome expectations
- More aptly applied to persons who are ready to change (19)
Predicting Adherence

- Study predicting adherence with models
  - Psychological Variables
  - Readiness
  - Decisional Balance (Comparing the pros and cons of new behavior)
  - Self-efficacy
- Measures of behavior change, when assessed at one week and 3 months predicted adherence at 6 months
- However, baseline measurements were not predictive of adherence
- Avoid tailoring treatment to baseline predictions
- Assessment early and at every follow up visit could be more beneficial (20)
Employing Behavioral Strategies

- Patients should be encouraged to think about the benefits and barriers to using PAP therapy
- Patient-centered, not provider-centered
  - The provider acts as a guide, not an expert
  - Avoid argumentation
Employing Behavioral Strategies

- Identify discrepancies
- Perceived benefits and barriers
- Common barriers
  - Discomfort
  - Disturbance of bed partner
  - Travel
  - Less symptom improvement than expected
Employing Behavioral Strategies (cont.)

- Express empathy
- Expect resistance
  - Remind the patient that he/she is in control
  - Use visual feedback
  - Support self-confidence: Point out past successes
- Use behavioral therapy principles at every visit, starting with the first
Patient Education and Support

- Always be looking for teachable moments
- Tailor the information provided to the patient and repeat at every visit
  - Only 12% of adults in the U.S. have proficient health literacy
  - 1/3 have difficulty with common health tasks (e.g., following prescription directions)
  - 80% forget what a provider tells them as soon as they leave the office
  - 50% of recalled information is incorrect (21)
- Think about how the patient perceives what you say
Summary

- Be aware of equipment/technology factors
  - Look at “the big picture” when interpreting monitoring data
- It is not known how much education and support is required
  - Study heterogeneity of interventions (22)
- Pre-testing assessment with education and early follow up are extremely important
- The approach to the patient should be individualized and reassessed at every follow up visit
- Keep alternative treatment options in mind
A Coordinated Team Approach Optimizes The Probability Of Success
Questions?


Roy S. *A Missing Link* (Dr. Barry Krakow’s findings on the relationship between insomnia and sleep-disordered breathing) www.sleepreviewmag.com, Jan/Feb, 2014
References (cont.)


Engleman HM, Wild MR. Improving CPAP Use By Patients With The Obstructive Sleep Apnea/Hypopnea Syndrome. *Sleep Med Rev* 2003; 7:81


Roy S. A Missing Link (Dr. Barry Krakow’s findings on the relationship between insomnia and sleep-disordered breathing) www.sleepreviewmag.com, Jan/Feb, 2014


(2) Vennelle M, White S, Riha RL, et al. Randomized controlled trial of variable-pressure versus fixed pressure (CPAP) treatment for patients with OSAHS. *Sleep* 2010; 33:267
References (cont.)


Brown, LK, Lee, W. Initiation of positive airway pressure therapy for obstructive sleep apnea in adults. Up To Date 2015

Vennelle M, White S, Riha RL, et al. Randomized controlled trial of variable-pressure versus fixed pressure (CPAP) treatment for patients with OSAHS. Sleep 2010; 33:267

Berry, RB, Sriram P. Auto-adjusting positive airway pressure treatment for sleep apnea diagnosed by home sleep testing. J Clin Sleep Med 2014; 10:1269
Weaver TE, Kribbs NB, Pack AI, et al. Night-to-night variability in CPAP use over the first three months of treatment. *Sleep* 1997; 20:278


