UIHC Home Sleep Apnea Testing (HSAT)

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Home Sleep Apnea Test (HSAT)
Sometimes called OCST (Out of Center Sleep Test)

- A sleep test for patients with high probability of moderate-severe obstructive sleep apnea (OSA)
- Takes place in comfort of patient’s home
- Easy to use
- Worn for one night
- Provides equivalent results to in-lab sleep testing
- Mandated by many 3rd party payers

(Wait time for UIHC sleep lab has been approximately 3-4 months)
Why Test?

Comorbidities associated with OSA

- Hypertension
- Heart disease
- Stroke
- Depression
- Excessive Daytime Sleepiness (EDS)/Hypersomnia (ICD-10-CM G47.19): memory loss, lack of concentration, morning headaches
- Impotence


- Recent literature associating Lewy Body Dementia (Alzheimer's Disease)
  Emamian et al., (2016)
Process for ordering HSAT

Work Flow

1. Ordering practitioner has high suspicion of OSA and orders HSAT in EPIC.

2. Order reviewed by Sleep Disorder Center (SDC) Medical Director.

3. If HSAT scheduled, patient picks up device at IRL East. Demonstration and instructions for use by the sleep technician. Two week follow-up scheduled at clinic at IRL. Device returned next morning.

4. Results interpreted by sleep physician.

5. Results and recommendations shared with patient at 2 week follow-up at IRL East.
Qualifications for HSAT

EPIC order is straight-forward

1. Excessive Daytime Sleepiness and two of the following:
   • Snoring
   • Witnessed Apnea (gasping, choking)
   • Hypertension

2. No significant co-morbidities

3. ≥ 18 years
Intent of HSAT

- HSAT is intended to rule OSA in (not rule it out)
Next steps...

1. Negative HSAT
   • If clinical suspicion for OSA remains we consider in-lab polysomnography (PSG)
   • Consider other causes of excessive daytime sleepiness and refer appropriately

2. Positive HSAT
   • Order Auto Positive Airway Pressure (APAP) therapy

3. DME (durable medical equipment) provides patient with PAP machine/equipment

4. Patient returns to OSA clinic in 1-3 months
Watch PAT™
Resource: Itamar Medical on-line
Peripheral Arterial Tonography (PAT)

Resource: Itamar Medical product information

- Proprietary PAT signal is a surrogate of changes in the sympathetic nervous system that are associated with sleep disordered breathing
- Embedded actigraphy differentiates between wake and sleep
- PAT signal attenuation and accelerated pulse rate directly reflect immediate digital artery vasoconstriction and increased heart rate
- Embedded pulse oximeter
Objective: Assess correlation between sleep indexes measured by a portable sleep-testing device (Peripheral Arterial Tonometry [PAT®]) and those measured by PSG.

Methods: 14 studies qualified for inclusion criteria, 909 patients >18, studies reviewed by 2 independent reviewers: AHI (apnea hypopnea index), 0.893 (0.857-0.920; p < .0001)

Takeaway: PAT demonstrated high degree of correlation of sleep variables compared to PSG with convenience and low cost.
AHI
Berry et al. (2012)

• A = apnea (no breathing)
• H = hypopnea (shallow breathing)
• I = index (As and Hs added together divided by # hours asleep)
• 0-5 = normal
• 5-15 = mild
• 15-30 = moderate
• >30 = severe
After one year on the job...

- Be careful of preconceived phenotype
Not just old, not just fat, not just men
Neither gender or BMI is part of Epic order

- Thin women have OSA too
- And so do kids--Alexandra Iannone, DO (peds sleep)
- (*not diagnosed by HSAT)
So Clean machines

Just my perspective…

- Convenient?
- Effective?
- More effective than standard cleaning?
- Evidence of becoming ill with “dirty” machine?
Summary
Home Sleep Apnea Testing

- Cost effective
- More accessible
- Convenient
- Reduced time to diagnosis

- Process following new diagnosis of OSA at UIHC is evolving
References


