



Obstructive sleep apnea and Resistant Hypertension

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Definition

- **Obstructive Sleep Apnea OSA:**

It is characterized by recurrent episodes of upper airway inspiratory collapse during sleep, causing breathing reduction (hypopnea) or cessation (apnea) that gives rise to transient hypoxemia and hypercapnia

- **Resistant Hypertension:**

Resistant HTN, when the BP remains above goal ($\geq 140/90$ mmHg) despite lifestyle modification and administration of three antihypertensive agents of different classes

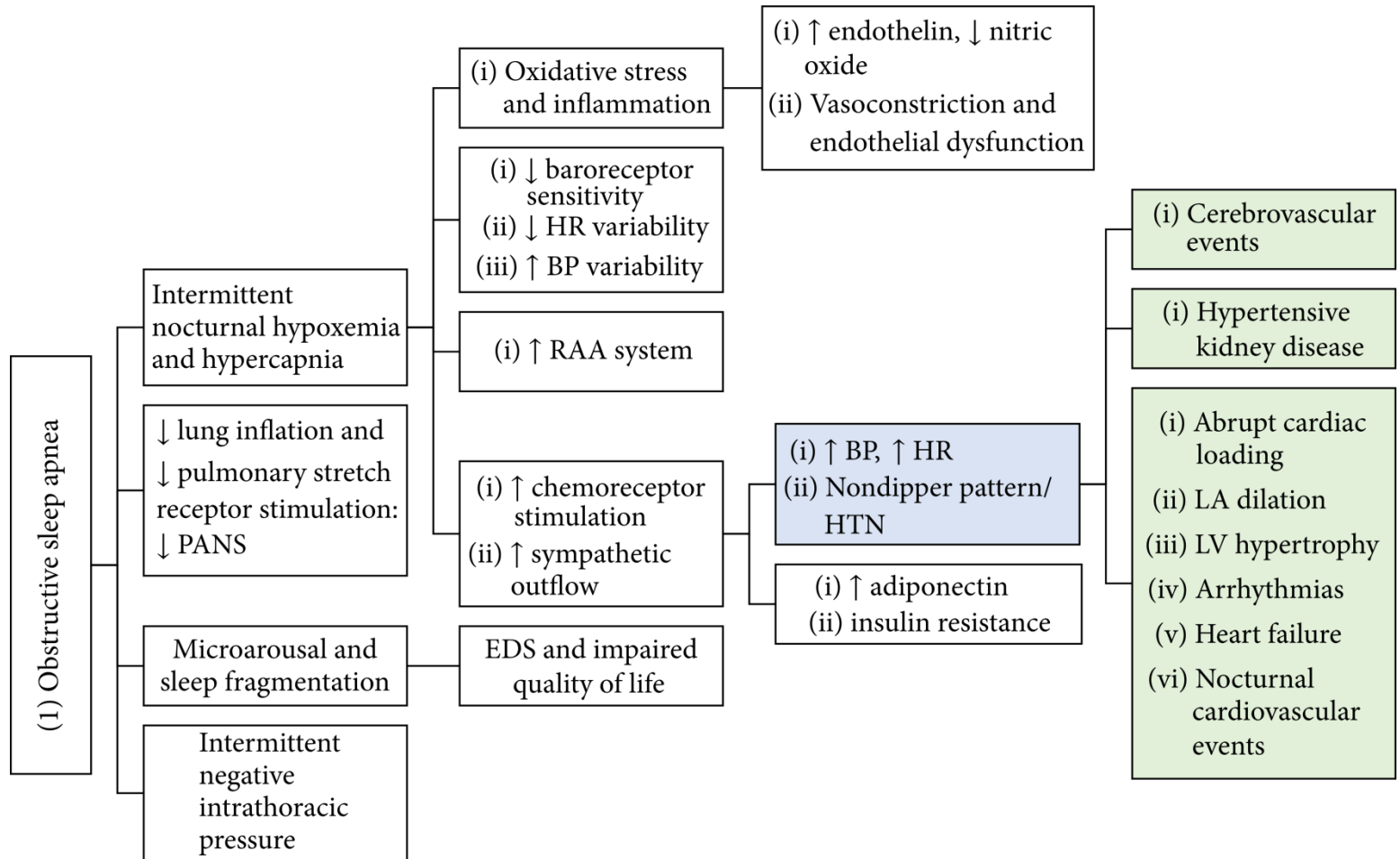
Prevalence

- OSA has been ascertained to affect 24% to 26% of men and 17% to 28% of women between 30 and 70 years of age
- Hypertension is also a highly prevalent disease, affecting 26.4% of all adults
- The prevalence of hypertension in OSA patients is estimated between 30 and 70%
- In patients with severe OSA, the prevalence of HTN was higher (53%) as compared to those with moderate OSA (46%)
- OSA was found to have the greatest association with resistant hypertension (64%), even more so than primary hyperaldosteronism (5.6%)

Pathophysiology

- Increased sympathetic tone
- inflammation, endothelial dysfunction
- Peripheral vasoconstriction
- Increased renin-angiotensin aldosterone activity
- altered baroreceptor reflexes (heightened chemo reflex, and blunted baro reflex sensitivity.)

Pathophysiology



Diagnosis of OSA

- Clinical approach:
- History

Loud snoring, choking, gasping during sleep
witnessed apnea

day and Daytime sleepiness

Morning headaches

Others less common symptoms: nocturia, sleep maintenance insomnia and symptoms of complications

- Physical Examination
- Obesity
- retrognathia, Crowded oropharyngeal airway (mallampati score)
- Large neck and/or waist circumference

Clinical diagnosis: Mallampati score



Class 1

Class 2

Class 3

Class 4

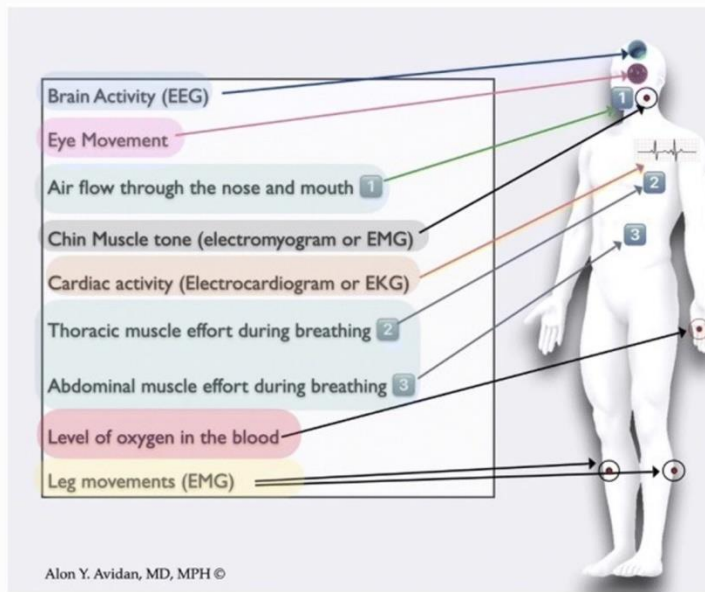
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Investigations

- Polysomnography PSG

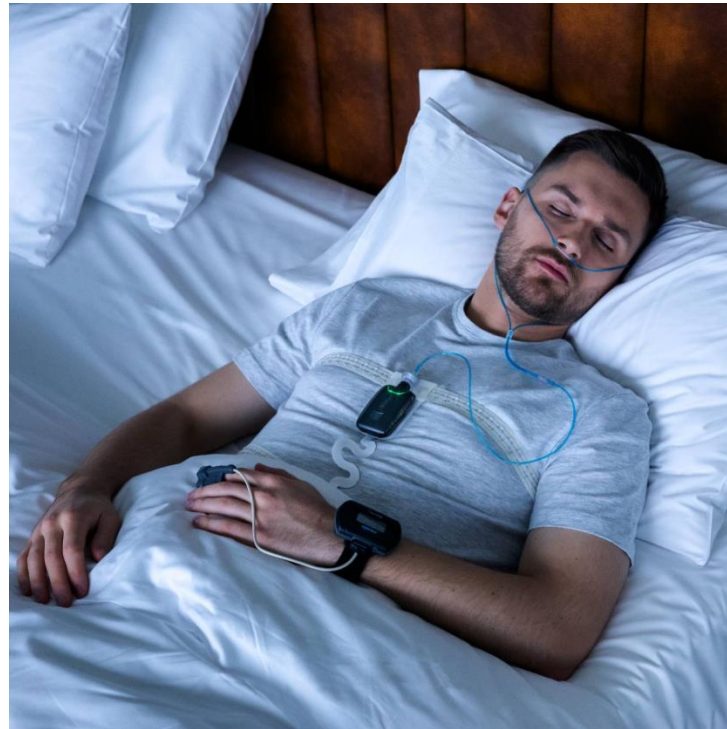


Standard PSG



Investigations

- Home Sleep Apnea Test HSAT



Investigations

- Ambulatory Blood Pressure Monitoring ABPM:
Detection of sleep blood pressure dipping.



Treatment

- 1) CPAP
- 2) Life style modification: Weight reduction
- 3) Oral appliances
- 4) Upper airway surgery : Tonsillectomy, adenoidectomy, UPPP
- 5) Anti-hypertensive drugs

CPAP therapy

