Obstructive Sleep Apnea & Hypertension

Easy Recognition with Meditech apneABP 3in1 Monitor
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Meditech apneABP combines blood pressure (BP), pulse oximetry (SpO₂) and actigraphy monitoring in one easy-to-use device, so it can be considered almost a miniature ambulatory sleep lab, the perfect state-of-the-art tool for screening patients with suspected OSAS, the most common cause of secondary hypertension.

What is OSAS?

Obstructive sleep apnea syndrome (OSAS) is found by a number of studies to be present in as much as 12-14% of the adult population. An obstructive sleep apneic episode is usually defined as lack of oronasal airflow for a period of at least 10 seconds during sleep, caused by pharyngeal obstruction, with blood oxygen desaturation, preceded by growing breathing efforts and followed by signs of full or partial awakening. OSAS is defined as at least 5 such episodes per hour of sleep.

Relationship between OSAS & Hypertension

Up to 70-80% of OSAS patients are hypertensive; approximately 40% of hypertensive patients have obstructive sleep apnea. OSAS is shown to be present in as much as 60% of therapy-resistant hypertension cases.

Untreated OSAS

OSAS independently elevates the risk of cardiovascular mortality by a factor of 10 to 23 times to normal. It causes a 7 to 10 times growth in cerebrovascular mortality and a 15 to 20 times growth in the risk of sleep-related traffic and work accidents.

It is a major contributing factor in a large part of early mental deficit symptoms. Untreated severe OSAS lowers cumulative survival of patients by 30% in 5 years from diagnosis; and by 40% in 7 years.

High-Risk Groups

Middle aged and overweight males with central fat distribution.

Symptoms

Extreme snoring, drowning nightmares, daytime sleepiness, morning headaches, mental deficits, erectile disfunction

Sleep Labs May Not Be Available

Diagnostic protocols require patients with suspected OSAS to be referred to fully equipped sleep labs which may not be readily available either in a convenient time range or in a nearby institute. Therefore, an effective and easily available screening method is really important.
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**Combined ABPM, SpO₂ & Actigraphy**

Meditech apneABP combines ambulatory blood pressure (ABP), pulse oximetry (SpO₂) and actigraphy monitoring in one easy-to-use device, so it can be considered almost a miniature ambulatory sleep lab.

**Ambulatory blood pressure monitoring** (ABPM) performed on OSAS patients usually shows elevated night-time blood pressure, typically of diastolic BP values. The normal night-time dipping in the ambulatory blood pressure profile is usually narrowed, missing, or might even be reversed: the majority of OSAS-patients are non-dippers. As sleep apnea episodes trigger general alarm reactions, such episodes are followed by elevation of blood pressure and heart rate, therefore night-time blood pressure variability is usually seriously elevated.

**Pulse oximetry** (monitoring blood oxygen saturation levels) performed on OSAS patients will show reduced blood oxygen levels during apneic episodes. In severe OSAS, blood oxygen levels will drop to as low as 70%.

**Actigraphy** (monitoring of body position and physical activity/motion levels) performed on OSAS patients usually shows higher than normal levels of activity, partly due to loss of sleep quality and a series of partial or full awakenings, and partly due to the typically present nycturia which causes patients to leave bed to urinate several times during the night.

**The Real apneABP Benefits**

1. Full ABP profile - for diagnosing hypertension
2. Full SpO₂ profile with beat-to-beat finger photoplethysmographic waveforms - for diagnosing apneic episodes
3. Full actigraphy and body position profile - for monitoring physical activity levels
4. Brachial and finger pulse waveforms and brachial pulse transition times - for an insight on arterial wall elasticity status
5. If the patient has no sleep disorders, SpO₂ and actigraphy functions can be disabled. Analysis and graphical display of collected data is available in Meditech CardioVisions software.