Sleep Matters™

The official newsletter of the Toronto Sleep Institute

March 2005 Volume 1 Edition 1

TSI

Toronto Sleep Institute

What's inside?

Obstructive Sleep Apnea as an Identifiable Cause of Hypertension

OBSTRUCTIVE SLEEP APNEA (OSA) is a prevalent syndrome characterized by repetitive occlusion of the upper airway despite continued respiratory effort. Epidemiological studies estimate the prevalence ranging from 4–15% of the adult population. The typical individual presents with obesity, snoring and/or witnessed interruptions of breathing, and daytime sleepiness.

OSA has long been recognized to be associated with excessive daytime sleepiness – and in severe cases, with pulmonary hypertension, stroke and myocardial infarction. More recent data implicates OSA in the development of systemic hypertension. In the Wisconsin Sleep Cohort Study, OSA was independently associated with a 3-fold increased risk of developing new hypertension. In addition, recent randomized placebo-controlled studies have demonstrated that several months of CPAP (Continuous Positive Airway Pressure) therapy led to significant reductions in daytime blood pressure. The Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure has recommended both that OSA be ruled out as a contributor to resistant hypertension and that it be considered as an identifiable cause of hypertension.

Identification of OSA

Signs and Symptoms:

- Snoring, interrupted by pauses in breathing (Apnea)
- Excessive Daytime Sleepiness
- Gasping or Choking During Sleep
- Restless Sleep
- Daytime Cognitive Impairment
- Irritability
- Hypertension
- Nocturnal Angina
- Nocturnal Reflux
- Obesity
- Neck Size >17" in men, >16" in women
- Large Tonsils
- A.M. Headache, Sore Throat, Nasal Stuffiness
- Nocturia
- Sexual Dysfunction

Announcements

WE ARE EXCITED to welcome new staff to our team. Dr. Alan Ong will be joining the medical staff of T.S.I. Dr. Ong is a neurologist with extensive experience in the field of sleep disorders medicine and board certification by the American Board of Sleep Medicine (A.B.S.M.).

Naomi Stein will be joining the center to provide Cognitive Behavioral Treatment (C.B.T.) for chronic insomnia. Naomi received her psychology training in South Africa and has recently completed psychoanalytic training at the Toronto Institute of Contemporary Psychoanalysis.

Todd Matthews RNCP, SCSC, will be heading our Sleep Apnea weight loss program. Todd is both a certified personal trainer and a nutritional consultant.

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Insomnia and Depression: The Chicken or the Egg?

"But doctor, I feel depressed because I can't get any sleep."

THIS REPLY IS FREQUENTLY heard at the sleep clinic when we suggest to our patients that their difficulty sleeping may be secondary to an underlying mood disorder. The question arises: does insomnia cause depression or vice versa? The literature suggests that both are correct: Insomnia is both a symptom and a risk factor for depression.

There is no question that insomnia is often present during a depressive episode and in fact, up to 35% of all individuals presenting with chronic insomnia have an underlying depression or anxiety disorder. Furthermore, most patients with a depression have insomnia as one of the diagnostic symptoms, and in fact many of the symptoms of depression, anxiety and primary insomnia overlap (see figure 1). On the other hand, longitudinal studies have suggested there is a significantly higher risk of developing a new depressive illness when insomnia (in the absence of any baseline depression) is left untreated for a year.

Whether insomnia is a distinct disorder directly causing mood disorders or represents a prodromal entity has yet to be determined. Nonetheless, chronic insomnia may place an individual at risk of a future depression if left untreated, and subsequently warrants investigation and treatment.

Another issue to consider is the choice of symptom that our patients emphasize when presenting to our offices. At the sleep clinic, it is not uncommon to see individuals downplaying depressive symptomatology. Despite being presented with the findings of high ratings on their depression questionnaires, the absence of other primary sleep pathology on their sleep study, and sleep architecture findings consistent with depression, they are uncomfortable considering this explanation for their sleep difficulties. This is a complex matter which may relate to an individual's ability and comfort discussing psychological issues. It often requires several visits to explore these possibilities and any stigma that might surround a diagnosis of depression, as well as provide education about the mutual causality between insomnia and depression.

Differential Diagnosis

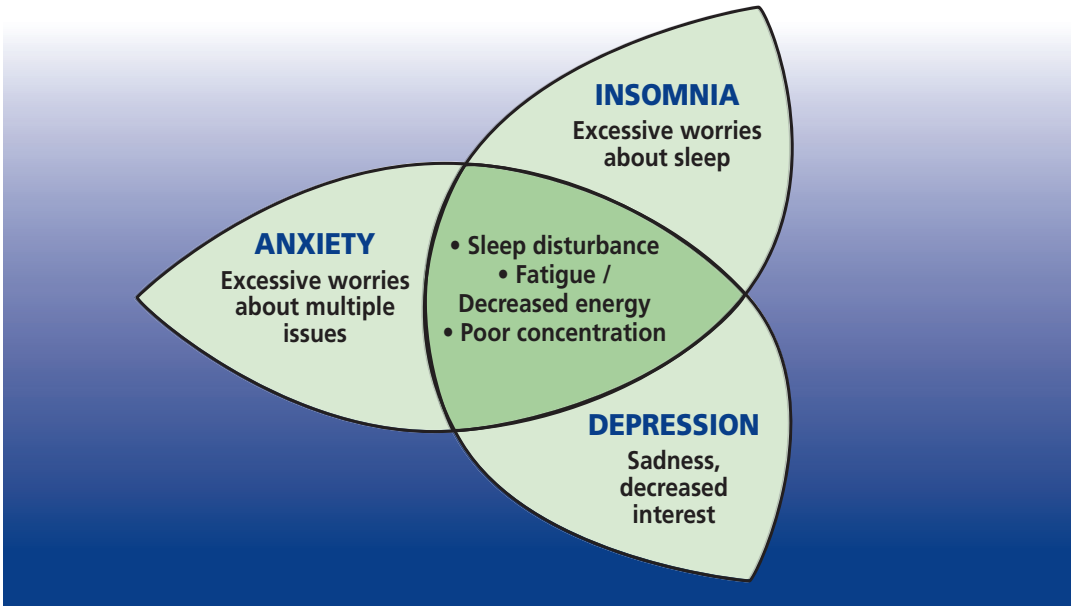

Figure 1

Many of the symptoms of depression, anxiety and primary insomnia overlap

Diagnosing Narcolepsy – Not a Zebra!

"**BUT ISN'T NARCOLEPSY** a very rare disorder?" This question is often asked by a young adult who has presented with the classic manifestations of Narcolepsy: irresistible sleep attacks and cataplexy – the sudden loss of muscle tone triggered by intense emotions.

The answer is that Narcolepsy is not as rare as one might expect. It is unfortunately often under-recognized. In fact, the more recent epidemiological studies suggest an incidence of up to 1/2,000 in the USA. This rate is approximately 1/2 the incidence of Multiple Sclerosis and 1/4 the rate of Parkinson's Disease. If we extrapolate those numbers to Canada we would expect to see 14,000 cases in the country and approximately 1,500 cases in the Toronto region. However, in many cases the diagnosis is not made for many years and the occurrence of excessive daytime sleepiness in a young adult may be attributed to volitional behaviour (*i.e.,* laziness).

SYMPTOMS OF NARCOLEPSY

1) **Excessive Daytime Sleepiness**
2) **Cataplexy**
3) **Sleep Paralysis**
4) **Hypnagogic Hallucinations**

The diagnosis is further complicated by the variable onset of the associated auxiliary symptoms of Narcolepsy. The complete tetrad of symptoms includes excessive daytime sleepiness, cataplexy, sleep paralysis and hypnagogic hallucinations. Often daytime sleepiness may precede these other symptoms for several years.

These auxiliary symptoms are believed to reflect a dissociated rapid eye movement (REM) state. During physiological REM sleep, skeletal muscles are paralyzed, hence the loss of muscle tone during a cataplectic attack is thought to reflect a leakage of the REM state into wakefulness triggered by an intense emotional response. Furthermore, sleep paralysis (awakening with brief paralysis) and hypnagogic hallucination are also reflective of an incomplete REM state.The clinical diagnosis is confirmed by performing overnight polysomnographic evaluation and a daytime multiple sleep latency test (MSLT). The overnight sleep study is used to exclude other intrinsic sleep pathologies (*i.e.,* Obstructive Sleep Apnea or Periodic Limb Movements Disorder) that may contribute to daytime sleepiness.

The MSLT is a series of four to five 20-minute nap opportunities scheduled at two-hour intervals throughout the daytime. Normative data have demonstrated that having an average sleep latency of less than five minutes throughout the daytime is indicative of a predisposition towards pathological daytime sleepiness. The additional finding of REM sleep on these 20-minute naps (Sleep Onset REM – SOREM) are pathognomonic of Narcolepsy. A critical issue in interpreting these MSLT results is substantiating with sleep diaries (from the preceding two weeks) that an individual has been obtaining adequate sleep. There may be false positives results (MSLT<5 minutes with SOREMs) with prior sleep restriction.

As symptoms of Narcolepsy can be severely disabling, early diagnosis and treatment may result in not only reduced accidents, but also less social, occupational and interpersonal impairment.

How Much Sleep Do You Need?

Studies suggest that most people require 7–8.5 hours of sleep per night.

There are however constitutional "short sleepers" who can manage with as little as 6 hours of sleep and "long sleepers" who require as much as 9 hours of sleep.

With a sufficient amount of sleep you should feel refreshed and alert throughout the day.

Diagnostic confusion:

Restless Legs Syndrome *vs* Periodic Limb Movements Disorder

THERE IS FREQUENT confusion among both patients and physicians regarding these two related disorders. They are mistakenly considered different terms for the same disorder. Although it is not surprising that they are used interchangeably given their common co-occurrence they are two distinct syndromes. Restless Legs Syndrome is a symptom that occurs during wakefulness while Periodic Limb Movements Disorder (PLMD) is a disorder based on a specific polysomnographic finding during a sleep study.

Restless Legs Syndrome describes the symptom of unpleasant leg paresthesias or dysesthesias occurring in the evening, which are relieved with movement. These sensations may also occur during the daytime as well during periods of prolonged immobilization, however there is a definitive circadian component with aggravation in the evening and night time. Involuntary limb movements and uncontrollable motor restlessness may also accompany these sensations. Individuals with Restless Legs Syndrome usually present due to the development of severe insomnia. Patients are plagued for hours with their symptoms, walking around their homes exhausted but unable to remain comfortably in bed to enable sleep onset.

Periodic Limb Movement Disorder (PLMD) refers to the occurrence of repetitive, stereotypical movements of the legs during sleep, resulting in disruption of nocturnal sleep. Periodic limb movements are usually detected by electrodes which are placed on the leg anterior tibialis muscles. These leg movements (flexion of the ankle, knee and hip) typically occur at intervals of 10–90 seconds and may be associated with EEG arousals. Some epidemiological studies have suggested that the occurrence of periodic leg movements is quite common, with prevalence rates up to 40% in asymptomatic elderly individuals. The Periodic Limb Movement Disorder diagnosis is generally made when it is evident that these limb movements are associated with EEG arousals causing sleep fragmentation, which suggest they are contributing to non-restorative sleep and/or daytime sleepiness.

Research studies have suggested that 85% of individuals with Restless Legs Syndrome will have periodic limb movements on their sleep study. The corollary, however, is not true. That is, most individuals in whom we document periodic limb movements on their sleep study do not have any symptoms suggestive of Restless Legs Syndrome.

Restless Legs Syndrome almost always requires treatment. However, clinical judgment is required to determine whether PLMS (periodic leg movements during sleep) are resulting in sufficient sleep disruption to warrant the diagnosis of Periodic Limb Movement Disorder and subsequent treatment.

About Toronto Sleep Institute

THE TORONTO SLEEP INSTITUTE IS DEDICATED TO ACHIEVING EXCELLENCE

in both the diagnosis and treatment of the full spectrum of sleep disorders, providing comprehensive evaluation and integrative treatment.

Please submit topics of interest for future issues to *Sleep Matters* ™
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