

Special Feature from our Medical Advisor

Shall We Sleep No More?

Introduction:

It is a fact well known to all sufferers from ME that their illness (like MACBETH!)¹ can murder sleep! In common with other people, they have unduly high expectations of lengthy uninterrupted rest every night. In addition to respite from sorrow, care and pain, everyone expects renewed energy and joy in living as well as short day time naps which can assist digestion and relieve boredom. It therefore comes as a shock to find out that the brain may be more active when “asleep” than when awake, indeed that tired out soldiers may continue to march and “sleep walkers” to creep about in the dark when technically unconscious!

Normal Sleep Stages ².

Sleep is an alteration in consciousness rather than a loss and is easily interrupted by significant environmental stimuli (such as a crying baby). It has a regular circadian rhythm according to the light/dark cycle as well rapid oscillations (mainly inhibitory) between the sleep stages, characterised by different alterations in autonomic, electrical, cardiac and muscle activity. The major distinction is between rapid eye movement (REM) and non rapid eye movement sleep (NON REM). There are 4 levels of non REM sleep ranging from drowsiness, and gradual decline of awareness and of the electrical and other activities described above, to the deepest sleep level at stage 4. After about 90 minutes, several separate periods of REM sleep (lasting up to 20 minutes each time) may intervene, when the brain and body temporarily become more active. Anyone who keeps a dog will have witnessed a stage when it may twitch and growl (as though dreaming of chasing a rabbit) during REM sleep. The onset of non REM sleep is triggered by the reticular activating system, which is a special group of spinal nerves responsible for maintaining different levels of activity in the brain. Dreaming occurs in REM stages though nightmares may be experienced in non-REM deep sleep.

Sleep Problems Associated with ME ³.

These are numerous and may include:-

1. Myoclonus (inappropriate muscular movements). Since they occur both before and during sleep the patient may not know they have caused considerable sleep disturbance and lost of rest throughout the night. Movements range from restless legs and sleep starts to produce generalised muscle-twitching severe enough to injure a sleeping partner. The unsuspecting patient may not only suffer exhaustion next day but wake up to a threat of divorce!
2. Breathing Problems. These may accompany myoclonus since both conditions arise from spinal nerve damage:-
 - (a) Central sleep apnoea (b) Obstructive sleep apnoea (c) Hypopnea, all of which cause problems related to impaired air entry and exit from the

lungs as well as low oxygen levels in the blood. Weakness of the diaphragm and of chest and throat muscles leads to episodes of asphyxiation and to considerable sleep loss.

3. Additional Problems ⁴., may include severe local pain, severe night headaches, light flashes, sensitivity to light and noise, Bradycardia (slow heartbeat), hypnagogic hallucinations (sleep paralysis) dream disorders and nightmares. These post-encephalitic sleep disorders are common in ME and in other neurological conditions affecting the brain stem.
4. Hormonal Influences: there are also two neurotransmitters which only work when asleep or in the dark and produce Melatonin which has a major influence on growth, puberty and sexual activity.

Treatment

Patients with severe myoclonus, obstructed breathing and cardiac slowing at night should be referred urgently for sleep studies and 24 hour cardiac monitoring. Appropriate diagnosis and therapy can then take place (eg. oxygen therapy at home, and biphasic or continuous positive pressure oxygen delivery in hospital). These problems are more common in patients aged between 40 and 60 years. For lesser difficulties and to avoid inappropriate prescription of sedating or antidepressant drugs a “sleep hygiene programme” ³ may suffice for those with a considerable gift of self-discipline! This might include regular rest during the day, low intake of caffeine and of fluid in the evening, appropriate position, mattress and other support to reduce pain at night, regular hours of sleep (eg. 7-8 hours) to coincide with the patient’s individual daily rhythm.

Dr E G Dowsett MBChB, Dip Bact. (May 2003)

References

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