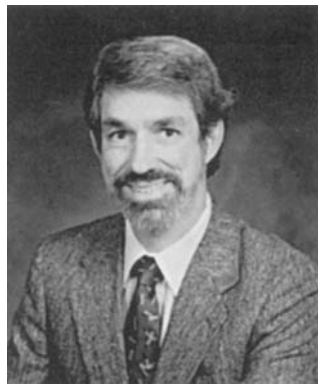


PREFACE



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Guest Editor

Sleep disorders have been part of medical practice for centuries. In ancient Greek civilization, Democritus recognized that sleep disturbance is often a sign of ill health; he considered daytime sleepiness an indication of physical illness and insomnia a consequence of poor nutrition. Physicians of the Middle Ages were aware that sleep could affect such disorders as epilepsy and asthma, and Willis described insomnia, nightmares, and restless legs in his writings during the seventeenth century. Nonetheless, until well into the twentieth century, sleep disturbances generally were viewed as consequences of other medical or psychiatric problems. For example, narcolepsy often was considered a form of epilepsy or a psychiatric disturbance until the discovery of its association with abnormal rapid eye movement (REM) sleep made it the first identified *primary* sleep disorder, that is, a disorder associated with abnormalities of the sleep process and associated primarily with sleep-related symptoms.

Narcolepsy might have remained a disorder considered to be more or less separate from the rest of medicine and neurology were it not for two discoveries in the 1960s. The first was the identification of sleep apnea and other abnormal breathing patterns during sleep; the second was the discovery of regular recurring patterns of leg movements during sleep, now called *periodic limb movements*. Upper airway narrowing and occlusion were recognized eventually as the most important causes of sleep-related breathing disturbance. These discoveries motivated the development in the 1970s of sleep centers that combined clinical evaluation of patients with sleep laboratories designed to uncover abnormal sleep patterns.

As the scope of sleep problems became apparent, the need for a systematic approach to diagnosis increased. The *International Classification of Sleep Disorders* provides such an approach by dividing sleep disorders into three major groups: dysomnias, parasomnias, and sleep disorders associated with medical and psychiatric disorders.¹

Dysomnias are disorders that cause either excessive sleepiness or complaints of insomnia. Three categories are recognized: (1) intrinsic (developing from causes within the body), (2) extrinsic (developing from causes outside the body), and (3) circadian rhythm sleep disorders (related to the timing of sleep within

the 24-hour day). Intrinsic sleep disorders include psychophysiologic insomnia, narcolepsy, and obstructive sleep apnea. Disturbed sleep caused by living near a busy airport and excessive sleepiness due to chronically insufficient amounts of sleep are examples of extrinsic sleep disorders. Jet lag syndrome and delayed sleep phase syndrome are examples of circadian rhythm sleep disorders.

Parasomnias are behaviors, movements, sensations, or other phenomena that occur during sleep but are not associated with primary complaints of insomnia or excessive sleepiness. They include such syndromes as sleep walking, sleep terrors, REM sleep behavior disorder, sleep bruxism, and sleep enuresis.

Sleep disorders caused by medical and psychiatric disorders are common problems. Disturbed sleep is a prominent symptom in most patients with major depression and in patients with a variety of medical diseases, including chronic obstructive pulmonary disease, end-stage renal disease, and congestive heart failure.

The importance of a rational approach to diagnosis and treatment of sleep disorders has increased as it has become apparent, particularly over the last 15 years, that sleep disorders are common, serious, and treatable. For example, insomnia, which is often followed or accompanied by depression or other psychiatric symptoms, is a significant problem for about 15% of adults, can be due to nonpsychiatric as well as to psychiatric causes, and can be treated effectively in at least half of cases. Sleep apnea is symptomatic in about 2% to 4% of the working adult US population. It is associated with increased risk of high blood pressure, stroke, and myocardial infarction and can be treated successfully in most cases. Chronic partial sleep deprivation, which is common in adolescents and shift workers, contributes to industrial accidents and motor vehicle fatalities and is potentially treatable with appropriate patient education.

Although sleep-related complaints are common, physicians often ignore, misdiagnose, or treat them incorrectly because of the many possible causes for some of the most common symptoms, because it is difficult or impossible for patients to describe events occurring during their sleep, and because physicians receive little training in sleep medicine. The average medical student receives less than 2 hours of didactic instruction in sleep disorders, and almost one third of US medical schools have no formal curriculum devoted to sleep. The lack of training and education of physicians about sleep medicine is unfortunate not only because these disorders are serious but also because of the dramatic advances that are occurring in the field of sleep research. Publications in the last 5 years alone have clarified the remarkable effects of light on the sleep-wake cycle; the prevalence of sleep apnea, restless legs, and partial sleep deprivation; the clinical spectra of syndromes related to narcolepsy, sleepwalking, and obstructive sleep apnea; and the morbidity and mortality associated with a variety of sleep disorders.

It is hoped that this issue of *Neurologic Clinics* and "Sleep Disorders II," the second part of this series, help to fill the need for accurate and timely information focused on the diagnosis and treatment of patients with sleep-related problems. The 16 articles in these two issues are clinically oriented and cover a wide range of sleep disorders, from those that occur in infancy to those that are most common in the elderly. Although even two issues of this size cannot provide a complete review of sleep medicine, I believe that these articles will assist the clinician with an interest in sleep disorders in diagnosing sleep problems accurately and in treating them in a rational manner.

This issue is devoted mainly to dyssomnias—disorders associated with primary complaints of daytime sleepiness or insomnia. "Sleep Disorders II" includes articles on parasomnias, sleep disorders associated with neurologic and psychiatric disorders, and the effects of drugs on sleep. In the first article in this

issue, Ferber describes common sleep problems of infancy and childhood along with a practical approach to treatment of these disorders. The article by Spielman and colleagues uses case examples to illustrate the value of a model of insomnia based on predisposing factors, precipitating factors, and perpetuating factors. Bassetti and Aldrich present the clinical features of narcolepsy and discuss current issues related to diagnosis and treatment of this lifelong disorder. Idiopathic hypersomnia is reviewed by Billiard.

Two articles devoted to breathing disorders make it clear that an understanding of anatomy and physiology of the upper airway and of the neural regulation of respiration are essential for clinicians involved in the management of patients with these disorders. In one of the articles, Chervin and Guilleminault describe current concepts of obstructive sleep apnea syndrome and discuss the importance of upper airway resistance syndrome. In the other, Guilleminault and Robinson discuss the basis for CNS control of breathing and the various dysfunctions that may lead to central sleep apnea and related disorders.

Periodic limb movements and restless legs syndrome, which are common problems with poorly understood neurobiologic bases, are the subjects of the article by Trenkwalder and colleagues. Finally, Wagner discusses the range of circadian rhythm sleep disorders, the use of sleep logs for diagnosis, and pharmacologic and nonpharmacologic approaches to treatment.

The unifying themes that emerge from these two issues are the importance of clinical evaluation for accurate diagnosis and the increasing use of a variety of laboratory and extralaboratory techniques to assist with diagnosis and management. Sleep medicine has moved beyond the simple model of diagnosis of sleep disorders based on a sleep clinic and a sleep laboratory. Overnight polysomnography performed in a sleep laboratory remains the single most useful test in the diagnosis and management of sleep disorders. It provides essential information used for the diagnosis of sleep apnea syndromes, periodic limb movement disorder, and other sleep disorders. Nonetheless, polysomnography is not required for diagnosis in a substantial number of patients with sleep disorders. Furthermore, it is no longer possible to claim that sleep disorders can be diagnosed by polysomnography without knowledge of the clinical setting or that an understanding of polysomnography suffices to define a sleep medicine specialist. For example, the significance of sleep-disordered breathing depends in part on whether the patient has a sleep-related complaint. Sleep logs and assessment of psychosocial factors are valuable in the evaluation of insomnia, circadian rhythm sleep disorders, and childhood sleep disorders. Family and social history are critical elements in the diagnosis of narcolepsy, restless legs syndrome, and sleep disorders caused by psychiatric illness. The articles on sleep-related breathing disorders, restless legs syndrome, narcolepsy, idiopathic hypersomnia, and epilepsy make it clear that the absence of apnea on polysomnography does not rule out a clinically significant sleep-related breathing disturbance, that the absence of periodic limb movements does not rule out restless legs syndrome, that the absence of sleep-onset REM periods on a multiple sleep latency test does not rule out narcolepsy, and that the absence of electroencephalographic (EEG) abnormalities does not rule out epilepsy. Prolonged EEG and sleep recordings, assessments of waking ventilatory function, electromyographic studies of the diaphragm and other muscles, psychometric assessments, and imaging of the CNS and upper airway are ancillary studies that provide important information in the evaluation of selected patients with sleep disorders and often allow more accurate diagnosis than can be made based only on clinical evaluation and polysomnography.

Sleep medicine in 1996 is a dynamic and growing discipline. It is hoped that

readers find the articles in these two issues as useful as I did in understanding current approaches to diagnosis and treatment of sleep disorders.

References

1. ICSD—International Classification of Sleep Disorders: Diagnostic and Coding Manual. Diagnostic Classification Steering Committee, Thorpy MJ (Chairman). Rochester, MN, American Sleep Disorders Association, 1990

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