

INSOMNIA

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Epidemiology of Insomnia: from Adolescence to Old Age **305**

Eric O. Johnson

This article reviews the epidemiology of insomnia, summarizing what is known about the prevalence, incidence, and factors associated with insomnia in the general adult population and in older adults. It then focuses on adolescents as a specific population that has received far less attention. The studies included in this article were limited to those based on samples representative of populations from defined geographic areas.

Evaluation of the Insomnia Patient **319**

J. Todd Arnedt, Deirdre A. Conroy, Donn A. Posner, and Mark S. Aloia

This article outlines a systematic approach to assessing the heterogeneous disorder of insomnia. A systematic evaluation is described that includes self-report instruments, a sleep history, and collateral assessment strategies to generate differential diagnoses. The effective sleep clinician will be able to formulate hypotheses about potential causes and develop an appropriate treatment plan based on a synthesis of this information. A well-conceived case formulation increases the likelihood of successful treatment and resolution of the insomnia disorder.

Predisposition in the Evolution of Insomnia: Evidence, Potential Mechanisms, and Future Directions **333**

Christopher L. Drake and Thomas Roth

Hyperarousal is accepted as a major component of insomnia, but its role in defining the pathophysiology of insomnia is not well understood. In fact, hyperarousal as the factor that predisposes individuals to acute/transient sleep disturbance and its subsequent contribution to the development of chronic insomnia have rarely been investigated.

This article presents the hypothesis and supporting data that elevated sleep reactivity to stress is a trait characteristic and an important premorbid risk factor for the later development of chronic insomnia.

Consequences of Insomnia

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Michael H. Bonnet and Donna L. Arand

Patients who have chronic insomnia commonly complain of dysphoric mood, degraded quality of life, and compromised daytime performance in addition to poor sleep. Numerous studies have documented these subjective deficits in addition to objective measures such as increased health costs and fewer job advancements. Objective decrements in psychomotor performance tests have been more difficult to document. Patients who have primary insomnia also have been shown to have abnormal physiologic function with common reports of increased heart rate, increased metabolic rate, cardiac spectral parameters consistent with sympathetic nervous system activation, increased high-frequency electroencephalographic activity, and increased secretion of cortisol, norepinephrine, and corticotropin. These physiologic changes may be consistent with reports of increased hypertension or cardiovascular events in these patients.

Psychiatric Comorbidity: The Case for Treating Insomnia

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Andrew D. Krystal

Insomnia is commonly associated with other psychiatric disorders, most notably major depression, generalized anxiety disorder, and alcoholism. Available research data suggest that insomnia may affect the course of the associated condition and independently, adversely impact function and quality of life. As a result, insomnia occurring in this setting is best thought of as “comorbid” with other psychiatric conditions rather than as a secondary manifestation. More work is needed to determine how to treat comorbid insomnia optimally and to define better the effects of treatment on longer-term outcome.

Comorbid Insomnia

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Katsuhisa Banno and Meir H. Kryger

Problems with sleep initiation and maintenance may be symptoms of underlying medical or psychiatric diseases. Common morbidities associated with such symptoms include painful conditions, cardiorespiratory diseases causing hypoxia and dyspnea, gastroesophageal reflux disease, neurodegenerative diseases, and primary sleep disorders such as sleep breathing disorders and restless legs syndrome. Depressed symptoms or anxiety in reaction to a medical condition may also predispose patients to sleep complaints. Diagnosis and treatment of the underlying medical condition may improve the sleep complaints and quality of life. In contrast, in some cases the cause of insomnia is idiopathic, which may require direct treatment of the disturbed sleep.

Cognitive-behavioral Therapy of Insomnia

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Charles M. Morin

Cognitive-behavioral therapy (CBT) of insomnia is a brief, multifocused, therapeutic approach addressing psychological and behavioral factors involved in perpetuating sleep disturbances. Current evidence indicates that CBT is an effective therapy for chronic insomnia, with 70% to 80% of patients responding to treatment. CBT produces

an average 50% reduction of insomnia symptoms, and these improvements are well sustained up to 24 months after treatment completion. Areas for further research include the investigation of treatment mechanisms, expanded focus on optimizing therapeutic outcomes beyond reduction of insomnia symptom, and wider dissemination and use of CBT in clinical settings.

Efficacy of Hypnotic Medications and Other Medications Used for Insomnia 387

Stephen Feren, Anup Katyal, and James K. Walsh

Pharmacotherapy constitutes the mainstay treatment for insomnia. To date convincing evidence of efficacy for the treatment of primary insomnia exists only for the benzodiazepine receptor agonists and for the melatonin receptor agonist, ramelteon. There is little or no evidence to suggest other commonly used prescription and over-the-counter medications (antidepressants, antipsychotics, antihistamines, muscle relaxants) are efficacious in the management of insomnia. Future research should include well-designed studies of commonly used drugs to identify benefit/risk ratios in insomnia populations as well as dose-response characteristics. Moreover, studies directly comparing hypnotics and other sleep-promoting agents should be emphasized.

Safety of Insomnia Pharmacotherapy 399

Timothy Roehrs and Thomas Roth

As in pharmacotherapy for any disease, the therapeutic benefit to the patient who has insomnia is judged against the safety of that treatment. This article discusses the safety of pharmacotherapy for insomnia in the context of the alternatives, nontreatment or nonpharmacologic treatment. The safety of drugs with a hypnotic indication and the relevance of receptor specificity to safety are reviewed. Finally, the limited information regarding safety of the other drugs without hypnotic indications that are used to treat insomnia is discussed.

Insomnia in the Older Adult 409

Lianqi Liu and Sonia Ancoli-Israel

Insomnia is common in older adults. Untreated insomnia is correlated with poor health, cognitive impairment, and poor quality of life and also may be associated with increased risk of morbidity and mortality. Chronic insomnia usually is comorbid with medical or psychiatric conditions, medications, disrupted circadian rhythms, inadequate sleep hygiene, primary sleep disorders, and psychosocial or environmental factors. Unfortunately many older adults and their health care providers see poor sleep quality as a part of “normal” aging. It therefore is critical that clinicians ask older adults about their sleep quality and then effectively assess and recommend treatment for difficulties with sleep.

Pediatric Insomnia 423

Judith A. Owens

Bedtime struggles, delayed sleep onset, and problematic night wakings are extremely common in the pediatric population and have a significant impact on quality of life of both children and caregivers. This article reviews the research and clinical nosology of childhood insomnia, as well as prevalence, and etiologic factors in the context of normal sleep development. Clinical presentation, evaluation, and behavioral and pharmacologic treatment of the most common types of pediatric insomnia are presented. This

article also addresses insomnia in special populations. Future directions for research, development of classification systems, and education in childhood insomnia are discussed.