Insomnia and Anxiety
Diagnostic and Management Implications of Complex Interactions

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• Anxiety • Insomnia • Sleep • Cognitive-behavior therapy • Epidemiology

KEY POINTS

- Mutual risk exists between anxiety and insomnia.
- Age-of-onset seems to be a prominent factor in the association between anxiety and insomnia, with early treatment of anxiety possibly reducing incident insomnia.
- Although anxiety is often temporally primary, conceptualization of insomnia and anxiety as comorbid and requiring independent diagnostic and therapeutic attention is warranted.
- Concurrent therapy for anxiety and insomnia is associated with improved sleep and augmented anxiolytic outcomes compared with monotherapies for anxiety.

INTRODUCTION

Insomnia and anxiety, respectively, are the most prevalent sleep and psychiatric disorders in the general adult population.[1,2] Forty percent to 92% of all cases of insomnia occur in the context of psychiatric disorders.[1,3] The prevalence of anxiety disorders in patients with insomnia is estimated to be 20% to 30%.[4] Given these facts, health care providers in all settings can expect these 2 conditions to present in a comorbid manner on a routine basis.

The relationship between insomnia and anxiety is increasingly recognized as complex and interactive. Although insomnia and anxiety are each associated with poorer health, increased health care utilization, daytime functional impairments, and generally poorer quality of life, they seem to have independent and additive deleterious effects when they cooccur.[5,6] Insomnia is an independent risk factor for incident anxiety disorders and vice versa.[1,3,7,8] The presence of insomnia differentially affects the course of individual anxiety disorders.[9] Accordingly, accurate diagnosis and management of comorbid insomnia and anxiety require a thorough understanding of their complex relationship.

With these issues in mind, the current article is intended to provide a focused review of the evidence on the relationship between insomnia and anxiety. Following a brief discussion of preliminary diagnostic and theoretic considerations, epidemiologic and treatment outcome research examining the insomnia-anxiety relationship is reviewed. Research on the specific subjective and objective manifestation of insomnia within specific anxiety disorders is not reviewed here.

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PRELIMINARY CONSIDERATIONS

Putative Relationships Between Insomnia and Anxiety

In a recent update on the associations between anxiety and insomnia, Uhde and colleagues[10] proposed 2 primary models of the relationship. In the first model, anxiety and insomnia are each separate manifestations of an, as yet, undetermined core neurobiological diathesis. The brain responds to repeated challenges to the vulnerability or predisposition with the development of symptoms of anxiety and insomnia. In the second model, anxiety and insomnia are recognized as distinct disorders that either (1) each cause similar symptoms/morbidity over time or (2) are the consequence of another highly prevalent unspecified factor.

Comorbid Versus Secondary Insomnia

A growing body of evidence supports the need for a shift away from traditional conceptualizations of insomnia as a secondary symptom of medical and psychiatric disorders.[11] The National Institutes of Health held a State of the Science conference on the manifestation and management of chronic insomnia in adults in 2005. The final statement from this conference discouraged the term secondary insomnia in favor of the term comorbid insomnia.

Recommendation of the term comorbid insomnia was based on 2 primary concerns.[11] First, substantial concern was expressed that use of the term secondary insomnia was resulting in significant underdiagnosis and undertreatment of insomnia. Second, the term secondary insomnia implies an understanding of etiologic factors of insomnia that current evidence fails to provide. A substantial body of research supports the independent diagnosis of insomnia in the context of anxiety disorders specifically and psychiatric disorders generally. The remainder of this section reviews research on the relationship between insomnia and anxiety from epidemiologic and treatment perspectives.

INSOMNIA AND ANXIETY: BIDIRECTIONAL RISK

- Insomnia increases the risk for new onset anxiety disorders, and this risk increases with greater severity and chronicity of insomnia.
- Anxiety increases the risk for new onset insomnia diagnosis, and anxiety severity is related to insomnia severity.

Insomnia as a Risk Factor for Anxiety and Anxiety Disorders

Multiple longitudinal epidemiologic studies have examined the relationship between insomnia and anxiety disorders. Ford and Kamerow[3] analyzed the relationship between sleep disturbance and psychiatric disorders in 7954 subjects from the National Institutes of Mental Health Epidemiologic Catchment Area study. Subjects in this study were interviewed at baseline for the presence of sleep and psychiatric symptoms within the previous 6 months. A follow-up interview was completed 1 year later. At baseline, insomnia was present in 10% of subjects, and subjects with insomnia were more likely to have an anxiety disorder than subjects with no sleep complaint (23.9% vs 10%, $P<.001$).

Analysis of the 1-year follow-up data from the Ford and Kamerow study reveals insomnia to be a significant risk factor for anxiety disorders. Fig. 1 shows the incidence of new anxiety disorders and the adjusted risk (odds ratio [OR]) for developing an anxiety disorder in subjects with insomnia at each time point as compared with

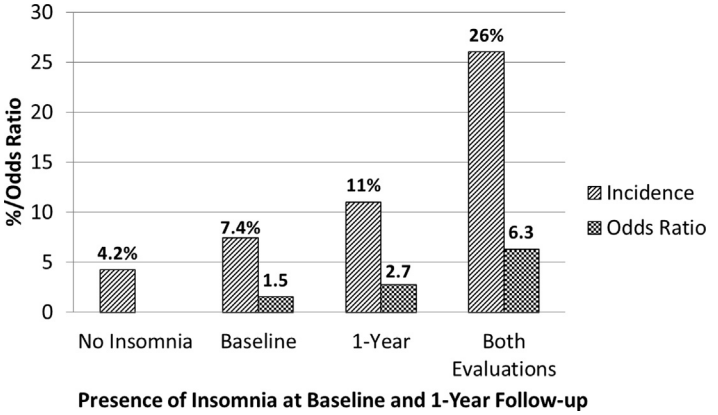

Fig. 1. Incidence and ORs for anxiety disorders in subjects with insomnia as compared with those with no sleep complaint. (*Data from* Ford DE, Karnerow DB. Epidemiologic study of sleep disturbances and psychiatric disorders. JAMA 1989;262:1479–84.)