

# Guest Editor's Introduction

## Diagnosis and Treatment of Insomnia at the Start of the 21st Century

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Insomnia is an important public health problem, yet one often left undiagnosed and, therefore, undertreated. When diagnosing insomnia, a clinician should consider impaired sleep quality and other subjective complaints of the patient as important as reduced sleep quantity. The comprehensive treatment of insomnia should combine general sleep-wake hygiene measures, appropriate psychotherapeutic techniques, and use of hypnotics. Parallel treatment of coexisting mental and physical disorders is of paramount importance. The overall therapeutic approach needs to be individualized. In this respect, dosing flexibility when using hypnotics may contribute not only to more efficient control of sleeplessness but also to prevention of chronic insomnia. Zaleplon, a novel hypnotic agent that can be administered when symptoms occur (i.e., at bedtime or during the night), provides greater versatility of intake than other hypnotics and is expected to facilitate more rational treatment of insomnia.

(*Primary Care Companion J Clin Psychiatry* 2002;4[suppl 1]:3-7)

According to its Latin etymology, *insomnia* means literally no sleep at all.<sup>1</sup> Although an individual may be completely unable to sleep for a day or 2, the medical term *insomnia* refers to a chronic condition in which sleep may be greatly reduced but may not be entirely absent.<sup>2-4</sup> The exaggeration inherent in the word *insomnia* may reflect the fact that, in many cases, patients with insomnia perceive it to be a devastating condition gravely affecting everyday life.<sup>4-6</sup> Patients with insomnia often complain dramatically about sleeplessness and its detrimental effects on their physical health, sometimes to the exclusion of the emotional and psychological effects of their overall problem.<sup>7-9</sup> Despite this frequent exaggeration by patients, there is indeed a positive correlation between insomnia and poor physical health.<sup>2,6,10-15</sup>

In addition to its negative impact on general health status and quality of life, insomnia causes substantial socioeconomic burden both directly through treatment costs

and indirectly through associated absenteeism, accidents at work, accidents at home, etc.<sup>6,14,16-18</sup> Moreover, chronic insomnia is strongly associated with comorbidity of psychiatric disorders, such as depression and alcoholism.<sup>6,19-22</sup> This comorbidity further increases the overall burden to patients, their families, and society, yet insomnia is notably underrecognized and, therefore, often left untreated.<sup>16,23</sup>

Predisposing, precipitating, and perpetuating factors all contribute to the development of insomnia.<sup>2,9,24,25</sup> When predisposing and precipitating factors can be detected and adequately addressed before the perpetuating ones prevail, insomnia can be efficiently managed. Hence, early detection and treatment are invaluable for the prevention of chronic insomnia and its complications. To offer some insight on insomnia to physicians, this article provides an update on clinically relevant information regarding diagnosis and overall management at the dawn of the new century.

### DIAGNOSIS AND ASSESSMENT

Following a simplistic "common-sense" approach, most physicians would consider insomnia a rather well-defined condition. Yet, a consensus regarding its exact definition seems to be difficult to reach. Evidence of this difficulty stems from epidemiologic data showing a large variation in the prevalence of insomnia, from 10% to 48%,<sup>15,20,26-33</sup> which may be related to methodological differences across studies, such as sample characteristics or the means of investigation.<sup>15,26-33</sup> Probably the most important difference,

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*Presented at the symposium "Current Considerations for the Clinical Management of Insomnia," which was held April 15, 2000, in Athens, Greece, and supported by an unrestricted educational grant from Wyeth-Ayerst Pharmaceuticals; Dr. Soldatos has received honoraria from Wyeth.*

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however, has been in the definition of insomnia.<sup>20</sup> For example, some studies based the diagnosis of insomnia on the detection of reduced sleep quantity alone,<sup>15,29,32,33</sup> while others relied solely on the presence of poor sleep quality.<sup>30,31</sup> Similarly, some studies asked questions regarding sleep difficulty that were designed to be answered “yes” or “no,”<sup>15,29,32,33</sup> while others phrased queries in a manner that provided an estimate of the frequency of disturbed sleep.<sup>28,30</sup> Also, an important source of variation has been the different time frame used to assess sleep difficulty, ranging from a day or 2 to many months.<sup>15,26–33</sup> In view of this diversity of approaches to define insomnia, more widely accepted criteria for its diagnosis and appropriate psychometric tools for its assessment need to be developed.<sup>34,35</sup>

The evolution of diagnostic concepts regarding insomnia is reflected in the various classification systems in use over the past 2 decades.<sup>36–40</sup> The classification published in 1979 by the Association of Sleep Disorders Centers<sup>36</sup> required the sleep laboratory criterion of reduced sleep quantity for the diagnosis of insomnia. Eight years later, the Revised, Third Edition, of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R)*<sup>37</sup> of the American Psychiatric Association established a purely clinical approach, based entirely on the patient’s subjective perception of unsatisfactory sleep quantity, quality, or both. Subsequently, all classifications for the diagnosis of insomnia (i.e., the *International Classification of Sleep Disorders [ICSD]: Diagnostic and Coding Manual*<sup>38</sup> of the American Sleep Disorders Association, the 10th revision of the *International Classification of Diseases [ICD-10]*<sup>39</sup> of the World Health Organization, and the Fourth Edition of the *Diagnostic and Statistical Manual of Mental Disorders [DSM-IV]*<sup>40</sup> of the American Psychiatric Association) assign equal importance to impaired sleep quality and reduced sleep quantity and also consider the patient’s subjective assessment.

In the ICD-10,<sup>39</sup> the diagnostic guidelines for insomnia and the corresponding research diagnostic criteria<sup>41</sup> have been established not only by consensus among hundreds of experts around the world but also through international field trials. The ICD-10 principles, being very similar to those of DSM-III-R and DSM-IV, conceptualize the clinical condition of insomnia as follows<sup>39,41</sup>:

1. The complaint of unsatisfactory sleep quantity and/or quality is what counts, not the actual amount of time spent asleep. After all, some individuals (the so-called *short sleepers*) obtain a minimal amount of sleep and yet do not consider themselves insomniacs.
2. The complaint of unsatisfactory sleep should be present frequently ( $\geq 3$  times per week) for at least 1 month. Complaints of minor and transient sleep difficulties do not qualify individuals to be diag-

nosed with insomnia. This prevents confusion of the clinical condition of insomnia with any temporary disturbance of sleep that may either be part of everyday normal life or relate to ordinary psychosocial stressors.

3. The mere complaint of unsatisfactory sleep is insufficient for the diagnosis of insomnia. The problem should be a source of marked distress for the patient and should interfere with the ordinary activities of daily living. This assessment prevents mistaking insomnia for a symptom of another mental or physical disorder. Actually, the clinical condition of insomnia can be diagnosed independent of the presence or absence of other diagnoses, provided that the sleep disturbance causes marked distress and interferes with the patient’s daytime performance. Thus, whenever necessary, the diagnosis of insomnia may parallel that of other mental and/or physical disorders.

The major standardized psychometric instruments for the measurement of insomnia include the Leeds Sleep Evaluation Questionnaire,<sup>42</sup> the St. Mary’s Hospital Sleep Questionnaire,<sup>43</sup> the Sleep Problems Scale,<sup>44</sup> the Pittsburgh Sleep Quality Index,<sup>45</sup> and the Karolinska Sleep Diary.<sup>46</sup> Following publication of the ICD-10 diagnostic criteria for insomnia,<sup>39</sup> the Athens Insomnia Scale (AIS)<sup>47</sup> was developed on the basis of these worldwide-accepted criteria to assist clinicians in assessing the severity of insomnia.<sup>34</sup> The AIS is a self-assessment psychometric instrument consisting of 8 items; the first 5 pertain to sleep induction, awakenings during the night, final awakening, total sleep duration, and sleep quality, and the last 3 pertain to well-being, functional capacity, and daytime sleepiness.<sup>34,47</sup> Either the entire 8-item scale (AIS-8) or the brief version (AIS-5) containing only the first 5 items can be used in research and clinical practice; both versions showed high measures of consistency, reliability, and validity when administered to a large number of subjects.<sup>47</sup>

## TREATMENT AND PREVENTION

The attitude of the typical patient with insomnia, who almost entirely focuses on sleep difficulty in an exaggerated manner, leads to the development of a rather poor patient-doctor relationship.<sup>2,4,48</sup> In turn, this may cause the physician to neglect assessment of symptoms that could lead to a diagnosis of insomnia or to investigate signs of any underlying disturbances. Consequently, physicians usually limit their intervention to an inadequate level; if they do not completely disregard the patient’s complaints, they may resort to prescription of a hypnotic drug without considering other potentially effective treatment options.<sup>2,4,23,48</sup> Thus, although insomnia is quite prevalent, it is often underrecognized and undertreated.<sup>16,23</sup>

Insomnia is thought to be the outcome of the interplay of many biological and psychological etiopathogenetic factors.<sup>2,7,8,49-51</sup> Treatment, therefore, should be multidimensional,<sup>2,7,8,49,52</sup> and the physician's role should not be restricted to the prescription of a hypnotic drug. Other therapeutic measures also need to be applied: identification and management of factors that may have contributed to the development of insomnia, instruction for the improvement of sleep hygiene and the patient's lifestyle, and implementation of appropriate psychotherapeutic techniques.<sup>7,8,49,52-54</sup> Most important, a sound patient-doctor relationship should be established from the very beginning to overcome the patient's psychological defenses (e.g., minimization or even denial of causative factors), which frequently interfere with the overall treatment procedure.<sup>2,7,25,49</sup>

To help patients with insomnia master their fear of sleeplessness, hypnotic drugs should generally be administered early in therapeutic intervention.<sup>2,7,8,49,52</sup> All modern hypnotic drugs have been initially effective.<sup>55-61</sup> However, the slowly eliminated benzodiazepine hypnotics have been associated with carryover sedative effects,<sup>55,62-68</sup> and the rapidly eliminated ones have been associated with early development of tolerance and rebound insomnia upon discontinuation.<sup>55,56,59,69-75</sup> The introduction of newer benzodiazepine-like hypnotics with short elimination half-lives has been advantageous because of their lower propensity for the development of tolerance and rebound insomnia.<sup>55,56,59-61,72-74,76,77</sup> Zaleplon, the latest breakthrough in the pharmacotherapy of insomnia, can be administered safely not only at bedtime, but also during the night as the need arises.<sup>66,78-80</sup> This versatility in the intake of zaleplon provides greater flexibility with drug administration and is expected to contribute to a more rational treatment plan tailored to the individual patient's needs. Most important, it may facilitate implementation of a preventive strategy to control insomnia when it recurs and thus avoid development of a chronic condition.

## CONCLUSIONS

The evolution of diagnostic concepts about insomnia is reflected in the various classification systems in use over the past 2 decades. Initially, some experts defended the use of sleep laboratory procedures for the diagnosis of insomnia,<sup>36</sup> while others felt that a purely clinical approach was sufficient.<sup>37</sup> The position of the latter group of experts prevailed—in all 3 official diagnostic classifications currently in use, only clinical criteria need to be met in diagnosing insomnia.<sup>38-40</sup> Moreover, for the diagnosis of this condition, impaired sleep quality is considered as important as reduced sleep quantity, and the patient's subjective estimates are not disregarded.

For effective management of insomnia, the major concern of the physician should be to establish a sound patient-

doctor relationship as soon as possible. Generally, a combination of therapeutic modalities offers the greatest benefit to the management of patients with insomnia.<sup>2,7,8,49,52-54</sup> The comprehensive treatment of insomnia should combine implementation of general measures for the improvement of sleep hygiene and the patient's lifestyle, application of appropriate psychotherapeutic techniques, and administration of an adjunctive hypnotic drug.<sup>2,8,54</sup> Such a treatment approach can be implemented either as an intervention solely for the management of insomnia or as part of a global treatment program that also addresses coexisting disorders (e.g., depression, chronic pain), regardless of whether they can be considered primary or secondary in relation to insomnia.<sup>2,7,49</sup>

The clinician's therapeutic effort needs to be selective and treatment tailored to meet the individual patient's needs. Recent advances in the pharmacotherapy of insomnia provide a basis for greater dosing flexibility, which may contribute not only to more efficient control of sleeplessness but also to prevention of the development of chronic insomnia.

*Drug name:* zaleplon (Sonata).

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