VALERIAN ROOT IN THE TREATMENT OF SLEEP PROBLEMS AND RELATED DISORDERS - A SYSTEMATIC REVIEW AND META-ANALYSIS

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Annotation

Sleep problems are widespread and associated with a variety of comorbidities, including anxiety. Valerian (Valeriana officinalis) L.) is a popular herbal remedy used as a sleep aid, but results from previous clinical studies are inconsistent. This study was conducted to update and re-evaluate the available evidence to understand the reason for the conflicting results and to provide a broader understanding of the use of valerian in co-occurring disorders. PubMed, ScienceDirect and the Cochrane Library were searched for publications regarding the effectiveness of valerian in the treatment of sleep problems and related disorders. A total of 60 studies were included in this review (n=6894), and a meta-analysis was conducted to evaluate the effectiveness of improving subjective sleep quality (10 studies, n=1065) and reducing anxiety (8 studies, n=535).). The results indicated that the conflicting results may have been due to variable quality of the plant extracts and that more reliable effects could be expected from the whole root/rhizome. Additionally, therapeutic benefits can be optimized when combined with appropriate herbal partners. There were no serious adverse events associated with valerian use in patients aged 7 to 80 years. In conclusion, valerian may be a safe and effective remedy for improving sleep and preventing sleep-related disorders. However, due to the presence of multiple active ingredients and the relatively unstable nature of some active ingredients, quality control processes, including standardization methods and expiration dates, may need to be reviewed. therapeutic benefits can be optimized when combined with appropriate herbal partners. There were no serious adverse events associated with valerian use in patients aged 7 to 80 years. In conclusion, valerian may be a safe and effective remedy for improving sleep and preventing sleep-related disorders. However, due to the presence of multiple active ingredients and the relatively unstable nature of some active ingredients, quality control processes, including standardization methods and expiration dates, may need to be reviewed. therapeutic benefits can be optimized when combined with appropriate herbal partners. There were no serious adverse events associated with valerian use in patients aged 7 to 80 years. In

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Keywords:valerian officinalis, herbal medicine, sleep, insomnia, anxiety, systematic review.

Introduction

Sleep problems

Sleep plays a critical role in maintaining brain function and systemic physiology, and chronic sleep problems can have a significant impact on our health. Lack of sleep leads to decreased resistance to stress, decreased quality of life, mood disorders, cognitive impairment, memory deficits and performance deficits. 3It may also contribute to metabolic disorders including hypertension, dyslipidemia, cardiovascular disease and type 2 diabetes. It is also associated with a significantly increased risk of developing dementia. Sleep problems are widespread, affecting 70 million (9-20%) adults in the US and 45 million (7%) adults in Europe. Typical manifestations of sleep disorders include sleep deprivation or fragmentation, and events that occur during sleep. 4 The main sleep disorders are insomnia, restless legs syndrome (RLS), obstructive sleep apnea and narcolepsy, of which insomnia is the most common. Sedative-hypnotic drugs commonly prescribed for insomnia are γ-aminobutyric acid receptor agonists such as antidepressants and antihistamines. However, long-term use of most sedative-hypnotics is limited due to various side effects, such as impairment of cognitive function and daytime performance. In recent years, herbal supplements such as valerian (Valeriana officinalis L.), sour jujube seed (Ziziphus jujuba Miller var. spinosa Hu ex H. F. Chou) and kava (Piper methysticum G.Forst.) have gained popularity as alternatives. to prescription medications to improve sleep quality without side effects. obstructive sleep apnea syndrome and narcolepsy, of which insomnia is the most common. Sedative-hypnotic drugs commonly prescribed for insomnia are γ-aminobutyric acid receptor agonists such as antidepressants and antihistamines. However, long-term use of most sedative-hypnotics is limited due to various side

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Valerian for sleep problems and related disorders

Recorded medicinal uses of valerian date back to the first century AD. In recent years, it has been popular as a sedative and hypnotic. Historically, however, its metabolic stimulating properties, such as diuretic, carminative, and menstrual-stimulant properties, were more valued. It was in the Middle Ages that the use of valerian to treat nervous disorders and insomnia was recorded. According to the European Medicines Agency (EMA), well-established uses of V. officinalis root include relieving mild nervous tension as well as sleep disorders. To relieve nervous tension, the recommended oral doses are 400-600 mg of dry hydroalcoholic extract or crushed herbal substance (root) 0.3-3 g up to 3 times a day. Valerian is considered relatively safe and well tolerated, but the EMA monograph lists gastrointestinal symptoms (eg, nausea, abdominal cramps) as adverse effects. Although hydroalcoholic extracts of valerian root at recommended dosages improve latency and sleep quality, it is unclear which components contribute to the effectiveness.

The effectiveness of valerian as a sleep aid has been the focus of research, and several systematic reviews have previously been conducted. A systematic review published in 2000 that analyzed 9 randomized clinical trials found conflicting results and significant inconsistency in patients, experimental design, and methodology among trials. Another systematic review and meta-analysis published in 2006 analyzed 16 studies, and this study also found serious methodological

problems. Taibi et al (2007) conducted a systematic review of 37 studies, 29 of which were controlled and 8 were open-label. They concluded that although it is a safe herb, evidence does not support the clinical effectiveness of valerian as a sleep aid for insomnia. A meta-analysis of randomized placebo-controlled trials published in 2010 concluded that the effectiveness of valerian has not been demonstrated by quantitative or objective measures, although valerian may improve subjective sleep quality. Until now, these contradictory results have not been fully explained. Additionally, it is unclear whether valerian is effective in treating other disorders that are associated with and may contribute to sleep problems. The purpose of this study is to update the available evidence, evaluate the effectiveness of valerian in the treatment of sleep problems and sleep-related disorders, and discuss possible reasons for the conflicting research results, with particular attention to the herbal preparations used. learning. published in 2010, concluded that the effectiveness of valerian has not been demonstrated by quantitative or objective measures, although valerian may improve subjective sleep quality. Until now, these contradictory results have not been fully explained. Additionally, it is unclear whether valerian is effective in treating other disorders that are associated with and may contribute to sleep problems. The purpose of this study is to update the available evidence, evaluate the effectiveness of valerian in the treatment of sleep problems and sleep-related disorders, and discuss possible reasons for the conflicting research results, with particular attention to the herbal preparations used. learning. published in 2010, concluded that the effectiveness of valerian has not been demonstrated by quantitative or objective measures, although valerian may improve subjective sleep quality. Until now, these contradictory results have not been fully explained. Additionally, it is unclear whether valerian is effective in treating other disorders that are associated with and may contribute to sleep problems. The purpose of this study is to update the available evidence, evaluate the effectiveness of valerian in the treatment of sleep problems and sleep-related disorders, and discuss possible reasons for the conflicting research results, with particular attention to the herbal preparations used. learning. although valerian may improve subjective sleep quality. Until now, these contradictory results have not been fully explained. Additionally, it is unclear whether valerian is effective in treating other disorders that are associated with and may contribute to sleep problems. The purpose of this study is to update the available evidence, evaluate the effectiveness of valerian in the treatment of sleep problems and sleep-related disorders, and discuss possible reasons for the conflicting research results, with particular attention to the herbal preparations used. learning. although valerian may improve subjective sleep quality. Until now, these contradictory results have not been fully explained. Additionally, it is unclear whether valerian is effective in treating other disorders that are associated with and may contribute to sleep problems. The purpose of this study is to update the available evidence, evaluate the effectiveness of valerian in the treatment of sleep problems and sleep-related

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conclusions

According to the 1905 edition of the King's American Dispensatory, "Valerian stimulates the spinal system." and “in medicinal doses acts as a stimulant-tonic...”, which suggests that valerian is not a simple hypnotic or anxiolytic. Additionally, the text continues: “Valerian extract is not beneficial, but the liquid extract has been found to have all the medicinal properties of the root,” which suggests that extraction methods may play a critical role in maintaining therapeutic activity. Valerian has a variety of chemical properties. As summarized in differences in polarity can lead to variability in the quality of valerian extracts depending on the extraction solvents. Our study showed that hydroalcoholic extracts used in clinical trials differ in solvents and their phytochemical properties are in most cases not characterized. In addition, there is no information about storage conditions such as temperature and shelf life. Given the poor stability of some important active components, it is unknown to what extent the active components were retained at the end of these tests. The lack of such information limits the discussion about why some extracts were ineffective while others were effective in these clinical trials. Due to its multiple active components and complex mechanisms of action, it is critical that well-characterized plant materials and extracts be used in future clinical trials so that the true effectiveness of valerian can be assessed. This study demonstrated that valerian can be a safe and beneficial herb, either alone or in combination with the treatment of sleep problems, anxiety and related comorbidities. One possibility for research is whether valerian is particularly useful in treating insomnia at higher levels of anxiety. In fact, the observation that V. edulis is most effective in reducing sleep problems in children with hyperactivity may indicate that valerian is more useful in treating insomnia associated with certain mental conditions, such as anxiety. Safety has been demonstrated across a wide range from childhood to the elderly. Sleep problems are associated with a number of comorbidities, including anxiety, depression and dementia, in both adulthood and childhood. With age, the quantity and quality of sleep decreases, and insomnia and daytime sleepiness are common in older people. Thus, valerian can help improve quality of life at any age by improving sleep quality, thereby preventing a number of mental and cognitive dysfunctions. However, due to the

presence of multiple active components and the instability of some components, it may be useful to reconsider standardization methods and shelf life of extracts. Repeated treatment with the whole root/rhizome consistently improved sleep quality at a dose of 450-1410 mg per day for 4-8 weeks, while valerian extracts at a dose of 300-600 mg per day for 5 days-4 weeks produced inconsistent results. Evidence is insufficient regarding the effectiveness of a single dose intervention as a sleep aid. It is desirable to develop effective standardization methods. Meanwhile, using whole plant substances (root/rhizome) rather than extracts,

Finally, due to the subjective nature of sleep problems and associated mood disorders, it remains difficult to determine the best measure of the effectiveness of interventions. The ultimate goal of any therapy, whether traditional, conventional or integrative, beyond “curing” disease or modulating, is to improve the quality of life of patients. While objective in vitro measurements provide valuable information and mechanistic insight, it may be useful to consider additional and more important factors that need to be considered specifically for each individual. Such measures and individualized approaches necessarily involve sufficient interaction and communication between patients and practitioners. Developing effective testing strategies to address this issue is a challenge for the future.

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