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Treatments for somnambulism in adults: assessing the evidence

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Abstract

Somnambulism, or sleep walking, is a parasomnia of non-rapid eye movement (NREM) sleep where movement behaviours usually confined to wakefulness are displayed during sleep. Generally, if sleep walking is causing distress or danger in spite of safety measures, medical or psychological treatment is indicated. Clinicians will need to assess the evidence for treatment options. Medline, Embase, Psycinfo and the Ovid EBM multifile databases were searched. No properly powered rigorous controlled trials were found for treatment of sleepwalking in adults. Seven reports described small trials with some kind of control arm, or retrospective case series which included 30 or more somnambulism patients. With no high quality evidence to underpin recommendations for treatments of somnambulism, full discussion with patients is advised. Adequately powered, well designed clinical trials are now needed, and multicentre collaborations may be required to obtain the sample sizes required.

Key words

Somnambulism

Clinical trials

Evidence based medicine

Treatments for somnambulism in adults: assessing the evidence

Background and aim for review

There are several recent reviews of somnambulism (sleepwalking)^{1, 2} and the larger field of parasomnias.³⁻⁷ These give clinical features, epidemiological information, genetics and the relationship of somnambulism to other sleep abnormalities. They also suggest medical treatments for the condition but usually without showing the evidence base for each treatment option. This review therefore provides brief background information, but focuses primarily on an examination of evidence to support treatments commonly suggested for somnambulism.

Somnambulism

Somnambulism (also known as sleep walking) is a type of parasomnia, disorders where usual distinctions between wakefulness, REM and NREM sleep are blurred.⁴ Somnambulism is a disorder of arousal occurring during NREM sleep (stages 3 and 4).⁷ NREM parasomnias are classified largely by behaviours displayed and somnambulism is closely related to other NREM parasomnias (confusional arousals, sleep terrors, sleep related sexual behaviour, and sleep-related violence). Sleep-related eating disorder is a further, recently described NREM parasomnia variant⁸ Parasomnias of REM sleep, such as REM-sleep behaviour disorder, are a separate classification and not included in this review.

While this review deals with somnambulism in adults, the condition is more common in children. The prevalence in adults is 2-3% with nightly sleepwalking in only 0.4%.¹ Some 80% of adult sufferers also had childhood somnambulism.⁹ Prevalence appears unaffected by gender or socio-economic status, but has a genetic basis.^{10, 11}

Various drugs, most recently Zolpidem,¹² have been reported to be associated with sleepwalking but this is controversial, being based on small numbers of cases and often without thorough investigation of alternative causation.¹³ Among those who exhibit sleep walking, an episode can follow sleep deprivation.¹ Early research looked for relationships between various psychopathologies and somnambulism^{2, 7} but

consistent relationships have not been found and purely physiological causes are now proposed.¹⁴⁻¹⁶

Sleepwalking episodes usually occur in the first third of the night, during non-dreaming, slow wave, sleep. Movements may be fairly minor but may extend to leaving the bed and walking. Eyes are often open and the sleepwalker may mumble. Movement is clumsy but if uninterrupted the person can usually safely return unaided or gently aided to a lying position and continue their sleep. At the extreme, complex behaviours such as driving a car have been documented. If interrupted and aroused, for example to prevent accidents, the sleep walker may or may not be agitated or violent. There is usually no memory on waking of the sleepwalking event.⁷

Measures such as avoiding sleep deprivation or other apparent priming factors, removing hazards and giving the sleepwalker quiet guidance back to bed if necessary, are advocated as first line treatment, along with reassurance that sleepwalking is not linked with underlying psychiatric illness.³ Medical treatment is needed for adult sleepwalking only if these measures have been taken and the condition is still causing distress or danger. In this situation, clinicians will wish to assess the evidence for treatment options.

Suggested treatments for trial with individual patients include the benzodiazepines diazepam, triazolam, temazepam, estazolam and clonazepam, zolpidem, tricyclic antidepressants including imipramine, the selective serotonin reuptake inhibitor antidepressant paroxetine and the related drug trazodone, and hypnosis, guided imagery and relaxation training.^{2, 3, 7, 17, 18} However treatments are frequently suggested without reference to supporting studies, or with reference to case reports only. Reports of systematic searches and appraisals of somnambulism treatments are not available. This review therefore presents a comprehensive search for evidence of effectiveness of treatments which have been advocated for somnambulism, an assessment of that evidence and implications for clinical practice and further research.

Search

Searches were carried out 17 July 2008 in Medline, Embase, Psycinfo and the Ovid EBM multifile database as follows.

Medline [1950 forward]

somnambulism/th,dt OR parasomnias/th,dt

Embase [1980 forward]	sleep walking/th,dt OR paasomnia/th,dt
Psychinfo [1806 forward]	*sleepwalking/
Ovid All EBM Reviews - <i>Cochrane DSR, ACP Journal Club, DARE, CCTR, CMR, HTA, and NHSEED</i>	somnambulism\$ OR sleep?walk\$ OR parasomnia\$

In each case the relevant McMaster University HIRU high sensitivity filter for retrieval of scientifically sound studies of therapy evaluations was included.¹⁹

Abstracts were scanned, and full text obtained for reports likely to describe formal evaluations of therapy for sleepwalking as a primary complaint and in adults.

Reference lists of studies obtained were also assessed. Descriptions of management of single or small numbers (6 or less) of cases were rejected.

Results

No properly powered controlled trials were found for sleepwalking in adults. Seven reports described small trials with some kind of control arm, or case series which included 30 or more somnambulism patients.

- In a single blind prospective comparison of “active “hypnotherapy (n=7) compared to “suggestion” hypnotherapy (n=4) with some subsequent crossover, no benefit could be ascribed to active therapy.²⁰
- In a double-blind crossover trial of diazepam for sleepwalking in 5 adults, though authors stated that some or all self-reported symptoms were alleviated for some participants, results failed to show significant difference between placebo and diazepam.²¹
- Another report followed up 60 sleep walking young adults 1 year after they had been treated according to a defined protocol. Patients were assessed for sleep disordered breathing and offered CPAP or surgery if there was even mild SDB (all but 6 cases) or benzodiazepines if there was not. Patients with SDB and either compliant with CPAP or having had surgery reported resolution of sleep walking. Authors concluded that treating any comorbid SDB also resolved sleepwalking in young adults.²²

- Four reports of large mixed case series included patients with sleepwalking but did not report all outcomes separately for the sleep walking patients. One series included 61 patients treated with clonazepam, 28 of them having night terrors/sleep walking, and 83.6% of the 61 were reported as achieving “rapid and sustained control”. A further 22 patients with night terrors/sleep walking both learned and used self-hypnosis and 14 “achieved substantial benefit”.²³ In another mixed series 86% of 170 patients self-reported “complete/nearly complete” control after 4 months to 12 years of benzodiazepine treatment. Sixty nine of the group had “sleep terrors/sleepwalking”.²⁴ In a further case series 23 patients with sleepwalking were among a group of 27 available for follow-up after undergoing self hypnosis training. Twenty of the whole group self- reported “very much or much improvement” and a lower retrospectively estimated frequency of spells when contacted 6 months to 5 years after treatment.²⁵ Another series of 32 adults and 4 children referred by a sleep physician for hypnosis included 11 diagnosed with sleepwalking. Six of the 11 responded to 18month follow-up and 3 of the 6 said they were “spell-free or much improved” while the other 3 reported “little or no improvement”.²⁶

Discussion

Benzodiazepines are frequently recommended as an effective treatment for somnambulism. However, adequately powered randomised controlled trials are lacking for this and other medical and psychological treatments for somnambulism. Observational evaluations have generally been retrospective, have included no untreated comparison group, and have relied solely on self-report of improvement by patients available for follow-up as outcome measures. Clinicians may be surprised to learn that very low level evidence supports recommendations for treatments of somnambulism. Full discussion with patients is advised where this kind of “off-label” prescription is being considered and, if the decision is to prescribe, written patient consent is recommended.²⁷ As evidence is lacking for pharmacological treatments, clinicians may wish to ensure that patients are fully informed about all options including environmental safety measures.

Somnambulism is an infrequent but often distressing condition²⁸ and better evidence is needed to support treatment decisions by clinicians and patients. The low prevalence of somnambulism needing treatment, the low frequency of episodes in

many subjects, and difficulties in designing rigorous outcome measures may in the past have been barriers to well powered randomised controlled trials.²⁹ However there are now strategies to overcome these problems. Research designs and biostatistical approaches are available for trials in rarer diseases^{30, 31} and research collaborations can be formed for multicentre clinical trials which can recruit enough patients by including many centres nationally and internationally. New laboratory-based somnambulism episode-precipitating techniques³² and longer-term electronic self-reporting from home³³ are now available to provide for more rigorous outcome measurement in these trials.

The lack of good evidence for the usual pharmacological treatment of somnambulism is important, especially in view of the use of sleepwalking as a defence in medico-legal settings, and a well-designed multi-centre trial is now needed.

Practice points

- Benzodiazepines are often recommended but adequately powered randomised controlled trials are lacking for medical and psychological treatments for somnambulism.
- Both clinicians and patients should be aware of the lack of good evidence of effectiveness if medical treatment is being considered.

Research agenda

- Better evidence is needed to support treatment decisions in somnambulism.
- Adequately powered randomised controlled trials are now needed and can be conducted through multi-centre collaborations.

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