The use of light therapy to lower agitation in people with dementia

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Agitation and sleep disturbance are problematic for people with dementia and their carers, and have been linked to disrupted circadian rhythms caused by a lack of exposure to light. Bright light therapy (BLT) offers a powerful and cost-effective alternative to pharmacological options, and can be easily incorporated into care routines. This article describes practical issues faced when implementing light therapy in a nursing home setting, and attempts to address existing perceptions about its effectiveness.

There has been debate about the use of some atypical antipsychotic drugs in the management of agitated behaviour in dementia care. This has left health care professionals searching for alternative treatments.

Research conducted in recent years has aimed to develop an awareness that non-pharmacological treatments could enhance the management of patients with such behaviours, with one of these therapies being bright light therapy (BLT).

**Nature of agitation**

Agitated behaviours are particularly common in the latter stages of a dementia-type illness. Agitation and sleep disturbances can be troublesome for those with dementia and their carers (Lyketsos et al, 1999).

Many patients living in residential care facilities become agitated. Agitation is not a diagnostic term, rather it is used to describe a group of symptoms (Cohen-Mansfield et al, 1989), which include aggression, wandering, calling out, screaming and verbal abuse.

These behaviours pose a challenge for nursing staff. There has been a gradual introduction of non-pharmacological therapies, such as aromatherapy, therapeutic touch and behaviour modification (Douglas et al, 2004; Ballard et al, 2002).

While antipsychotics have been shown to moderately improve symptoms of agitation and psychological distress (Sultzer, 2003), there is an increasing concern among health care professionals about their propensity for adverse side-effects.

**Sleep disturbance**

Campbell et al (1995) estimate that half the population aged over 65 years have chronically disrupted sleep (sleep maintenance insomnia), and this is especially a concern for people with dementia. In 1993, Bliwise found that out of 47 residents with Alzheimer’s disease in a special care unit, 24 per cent had moderately disturbed sleep. Patients with dementia can often lose their circadian organisation and experience increased daytime napping, early morning waking and frequent nocturnal interruptions. These are characteristics of circadian disorganisation (Martin et al, 2000).

This phenomenon has been closely linked with behavioural disturbance, (McCurry et al, 2000). Pollak and Perlick (1991) say that behavioural restlessness during the night can be a major factor in a carer’s decision to have a relative institutionalised.

Previous research with BLT suggests that light levels are an important modulator of circadian rhythms (Van Someren et al, 1997).

**Why is light important?**

Many patients in nursing and residential homes are exposed to limited daylight. Some staff seem reluctant to take patients out of the building, even to sit outside. Often only those patients visited by relatives enjoy the luxury of being outdoors in natural light.

Light helps to regulate the body clock (Van Someren, 2000). It seemed feasible that light therapy might be useful in an institution as an alternative to pharmaceutical interventions, and a randomised controlled trial of bright light therapy (Bliwise et al, 1997) was conducted in a special care unit in the Royal Derby Hospital, Derbyshire, in 1997.

**TABLE 1. ASPECTS OF LIGHT THERAPY**

<table>
<thead>
<tr>
<th>Positive aspects</th>
<th>Negative aspects</th>
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<tbody>
<tr>
<td>Low cost</td>
<td>Time consuming</td>
</tr>
<tr>
<td>Non-pharmacological</td>
<td>Resource issues</td>
</tr>
<tr>
<td>Few side-effects</td>
<td>May only be beneficial in winter months</td>
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<tr>
<td>Reduced reliance on sleeping tablets</td>
<td>Difficulty keeping residents engaged</td>
</tr>
<tr>
<td>Easily integrated into daily routine</td>
<td>Exclusion for sight problems</td>
</tr>
<tr>
<td>Practical</td>
<td>Very bright light</td>
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**BOX 1. CASE STUDY**

Joan Rider (not her real name) was given a diagnosis of Alzheimer’s disease in 2001. She had presented to the mental health team five years previously complaining of memory difficulties. Her pre-illness history showed Ms Rider to be sociable, playing an active role in local government.

On assessment she showed a severe degree of cognitive impairment, defined by the mini-mental state exam (Folstein et al, 1975). Low mood was also detected using the Cornell scale (Alexopoulos et al, 1998). The main assessment tool used was the Cohen-Mansfield agitation inventory (Cohen-Mansfield et al, 1989), which measures level of agitation.

Ms Rider was unable to communicate verbally, was restless and agitated and did not sleep restfully most nights. She had also become socially isolated on the ward. It was hoped bright light therapy would decrease her agitation and increase restful sleep, and that a change of environment and routine would lift her mood. It was suggested that Ms Rider have her breakfast in the light treatment room to allow BLT to be incorporated into her normal daily routine.

During the initial sessions, Ms Rider appeared to indicate reluctance to look into the light box, looking away regularly, with facial grimacing. In the second week of treatment, changes started to be observed in Ms Rider’s behaviour. She appeared less agitated and the facial grimacing completely stopped. She started to try and move from her chair, something she had not done for many years. Staff commented that she had been trying to communicate with them verbally, which was a dramatic change.

During the last week of treatment, night staff commented that Ms Rider had been sleeping much better and were amazed at the changes. Ms Rider’s agitation scores decreased dramatically during treatment: by 15 points in the first four weeks and a further 15 points by week 8.

This objective data confirms a reduction seen in agitated behaviour.

The distance from the light box and the angle of the eyes determined the degree of light received by each individual. For example, patients involved in this study received 10,000 lux (1 metre = 10,000 lux). This can be measured by using a light monitor.

Patients received the light treatment for two hours each morning, which was optimal for most patients in terms of their pre-treatment circadian rhythms.

**Overcoming administration difficulties**

For some patients it was difficult to engage their full attention on the light box. For example, those patients who were prone to wandering appeared to find it difficult to sit for long periods of time. This may present a challenging task for nurses. However, there are practical solutions which can be implemented (Table 2, p34).

**Was light therapy well received?**

**Nursing staff**

Initially many of the nursing staff did not feel convinced that bright light therapy could reduce agitated behaviour in patients who have a long-standing history of behavioural disturbances.

The researchers fully understood the lack of enthusiasm initially displayed by the staff as it is not immediately obvious how much such a simple intervention could help reduce agitated behaviours. If a nurse is considering implementing the therapy, it is important to anticipate such negative reactions.

However, as the treatment progressed less agitation was seen in the patients, particularly during the second week of treatment. As many of the patients had a high degree of cognitive impairment, it was not always most effective on shorter days in the winter months (Byrne et al, 2003). Studies have shown that limited sunlight exposure may cause circadian dysrhythmias, thus inducing agitation (Martin et al, 2000; Satlin, 1992).

Agitation in some older residents increases as the sun sets. This has been termed as the ‘sundown syndrome’ (Van Someren, 2000). Evans (1987) reported that 12.3 per cent of older institutionalised patients were more restless and verbally agitated in late afternoon. The prevention and alleviation of agitated behaviours is still very much under investigation. For example, Bliwise (1993) found seasonal variation in agitated behaviour.

Between 2000 and 2002, 48 patients living in two residential care homes took part in a study of BLT. Of these, 22 patients received BLT, while 26 were randomised for placebo light (Byrne et al, 2003).

A therapy room was established in each care home. Each room was pleasant and quiet, which was important to encourage compliance and to maintain a therapeutic environment. Four chairs were placed around a table, upon which four light boxes were situated. Patients were seated in upright armchairs which were comfortable and practical, and a notice was placed on the door to prevent any potential disruptions from outside.

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**REFERENCES**


easy to assess their experience of the light treatment. Although care must be taken with regard to inferring too much from behaviour, it appeared that the patients started to approach the researcher more readily during the treatment phase. Some patients began to show highly positive non-verbal communication, for example having their arms outstretched and smiling as the time for their light treatment approached. The nursing staff also began to comment on the positive effects they had observed, and night staff regularly reported that patients were sleeping for longer periods with unbroken sleep. Light treatment was continued at the weekend and nursing staff became more actively involved in administering the therapy. Sitting with four agitated patients for two hours, encouraging them to remain seated and look into a light is not an easy task. But as the study progressed, the nurses’ overall perceptions appeared to change and they became more enthusiastic about the potential of BLT to reduce agitated behaviour (Box 1, p33).

During the treatment periods, the researcher sat with the patients for two hours each week day in the treatment rooms. The researcher found that her own sleep became heightened and her appetite increased. The researcher also felt very relaxed while close to the light boxes although this is only a subjective observation and the potential of BLT to reduce agitated behaviour (Box 1, p33).

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Relatives

Previous studies have demonstrated that a majority of family caregivers perceive there to be direct benefits associated with involvement in research (Hudson, 2003). Hudson also suggests that some relatives found the assistance given them by the researcher to be a major benefit. They felt that they were able to voice their concerns and appreciated the opportunity for discussion and feedback.

Relatives of the patients receiving the light treatment viewed it in a positive way, and were hopeful of beneficial effects. Some patients were already prescribed a range of medications and were possibly experiencing side-effects. This alternative treatment was therefore highly welcomed.

Families of patients who were involved in the light therapy study expressed that they were pleased with the results of the treatment and reported observing positive changes in their relatives.

Conclusion

Living with dementia is never easy and when those who are affected are suffering with agitation and sleep disorders this can make the situation even more distressing. Bright light treatment can be a way forward to help these patients and can easily be integrated into any daily routine, for example having breakfast in front of the light box.

Most patients indicated that the light treatment was a pleasurable experience. With participation and support from nursing staff, BLT proved to be a cost-effective and relaxing therapy. Nurse involvement with the treatment on the wards can also allow a further development of the nurse-patient relationship.

As previously discussed, assisting the patient to focus on the light box can be challenging for the nurse. However, if the practical and simple solutions are followed then this non-pharmacological treatment may be easily implemented. In conclusion bright light treatment can help to reduce agitation, particularly during the winter months (Allen et al, 2003).