EDITOR'S CHOICE

Randomised controlled trial

Bright light treatment is effective in treating older patients with non-seasonal major depression

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Commentary on: **Lieverse R,** Van Someren EJ, Nielen MM, *et al.* Bright light treatment in elderly patients with nonseasonal major depressive disorder: a randomized placebo-controlled trial. *Arch Gen Psychiatry* 2011;**68**:61–70.

Implications for practice and research

- Major depression is common in older people, and treatment response is often inadequate.
- Bright light treatment as an effective and well-tolerated treatment should be used more often in major depression in older people.

Context

Treatment for major depression is unsuccessful in a larger proportion of patients, and newer treatment modalities are thus welcomed.[1 2] Major depression in older people is common, and depression episodes tend to be long and debilitating. Bright light treatment has now been used for three decades and has been shown to be effective for non-seasonal depression,[3 4] but specific evidence for efficacy in older people is still sparse.

Methods

Lieverse and colleagues investigated 89 non-seasonally depressed patients aged 60 years and above. Patients were randomised to morning light treatment with either 1 h red, dim light treatment (50 lux) or 1 h pale blue, bright light treatment (7500 lux) and were assessed at baseline (T0), after a 3-week light treatment period (T1) and at end of a 3-week follow-up period in which no light treatment was given (T2). Patients were monitored with actigraphy (activity/rest movement measurement), and saliva cortisol, saliva melatonin and 24 h urinary cortisol excretion were sampled and analysed. Patients were allocated from outpatient clinics and general practitioners. The study was designed as a double-blind randomised placebo-controlled trial. Primary outcome was the percentage reduction in Hamilton depression scores and response rates (greater than 50% reduction from baseline).

Findings

A greater reduction in depression scores was found in the bright light treated group compared with the dim light treated group at T1 (difference 7%, p=0.03) and at T2 (difference 21%, p=0.001). Response rates were 41% (dim light) and 50% (bright light) at T1 (p=0.20, non-significant) and 34% (dim light) and 58% (bright light) at T2 (p=0.05). Effect sizes were above 0.40 (moderate) at T1 and above 0.80 (large) at T2. A third of the patients were in continued antidepressant treatment. Expectancy ratings were similar in the two treatment groups.

Sleep measures showed a small advance in get-up time and a small increase in sleep efficiency in the bright light treated group. Twenty-four-hour cortisol measurements showed normalisation of elevated baseline cortisol excretion in the bright light treated group. Saliva cortisol samples showed similar results. Melatonin measurements showed an increased steepness of the naturally occurring evening melatonin rise indicating that morning bright light treatment enhances evening rise in melatonin level. Bright light treatment was well tolerated.

Commentary

The results showed that pale blue bright light treatment was effective in the treatment of older patients with major depression. Effect sizes are comparable to those found with antidepressant treatment.[5] The hormonal outcome measures saw elevated cortisol levels approaching normal and positive changes in the circadian rhythm of sleep and melatonin.

Even though blue is the wavelength that is specific for the biological clock, bright white light contains blue and is less likely to have ophthalmological side effects. The precise onset of action of bright light treatment cannot be established as patients were only assessed at 3-week intervals – the study would have benefited from a more frequent assessment.

The study is somewhat underpowered, and the main finding does come out statistically significant, at end of light treatment period, only when using a one-sided significance test, whereas the difference is more robust at the end of follow-up period. Treatment duration is short, and it is clear from other studies[6] that continued light treatment would have an additional effect above 3 weeks of treatment. Adopting longer study periods will enable us to see what the maximum effect of light treatment really is. In this context, it is a shortcoming that no remission rates are presented. At the bottom line, we want the patients to attain remission, nothing less!

The present study expands the evidence for bright light treatment as an effective treatment for major depression. The authors should be commended for using a high-quality design and presenting measurements of effect size that enables valid comparisons with other treatment studies.

Competing interests None.

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