Advances in Treatment

Current Treatment Recommendations For Seasonal Affective Disorder

Erin E. Michalak, PhD1, Raymond W. Lam, MD, FRCPC2, Anthony J. Levitt, MD3

Abstract: A relatively large body of research has now accumulated concerning the treatment of seasonally occurring depression or what is referred to as seasonal affective disorder (SAD). The bulk of this research examines the treatment effects of light therapy. A smaller number of studies, however, also examine the effects of antidepressants or alternative interventions upon SAD. This article provides a brief overview of this body of literature and offers a range of treatment recommendations based on available evidence.

Résumé: Recommandations de traitement actuelles du trouble affectif saisonnier
Un nombre relativement élevé d’études se sont accumulées sur le traitement de la dépression à caractère saisonnier qu’on appelle aussi le « trouble affectif saisonnier » (TAS). En grande partie, cette recherche examine les effets du traitement de la photothérapie. Toutefois, un nombre plus restreint d’études examinent aussi les effets des antidépresseurs ou d’interventions parallèles sur le TAS. Cet article offre un bref aperçu de cet ensemble de la documentation ainsi qu’une série de recommandations de traitement selon les données probantes disponibles.

Key Words: seasonal affective disorder, treatment, light therapy, antidepressants

Seasonal affective disorder (SAD) is now a well-described form of recurrent major depression. Typically, onset of SAD occurs in the early winter months and continues to spring, followed by full remission of depressive symptoms. Seasonal depression is often characterized by atypical depressive symptoms, such as increased appetite, weight gain and hypersomnia, in addition to typical depressive symptomatology.

Since Rosenthal and colleagues first described the condition in 1984 (1), nearly 1,000 articles have been indexed on Medline under the heading “seasonal affective disorder.” Many of these deal with treatment-related issues, and there is now a wide and sometimes confusing range of information available concerning the optimal treatment of SAD. This article aims to provide a brief overview of this body of literature and some treatment recommendations that are based on current evidence. Further, it addresses the use of light therapy, antidepressant medications and alternative treatments for SAD, respectively. Some of this article’s content can be examined in more detail in the Canadian Consensus Guidelines for the Treatment of Seasonal Affective Disorder (2).

Light Therapy

What is light therapy?
SAD is thought to relate to reduced levels of daylight during the winter months, and early research concentrated on treating the condition by, in effect, mimicking bright light conditions. Light therapy involves daily exposure of the patient to bright artificial light, and various light therapy devices are now available. These range from fluorescent light boxes to head-mounted units known as light visors and dawn simulators. Nevertheless, the fluorescent light box demonstrates the best evidence for clinical efficacy. The light emitted via the light box differs from that encountered under normal indoor lighting conditions in several ways. First, the intensity (usually expressed in terms of “lux,” a photometric unit of luminance) of the light is greater. Light boxes deliver high-intensity light (ranging between 2,500 and 10,000 lux), compared with normal-intensity light (where daytime indoor lighting levels might range between 50 to 300 lux). Second, light boxes contain filters that screen out the potentially harmful effects of ultraviolet wavelengths, which are not thought to be critical in successful treatment with light therapy. Commercial light boxes and other light devices are widely available without prescription in medical supply stores and via mail order. Many vendors have a short-term rental program, while others have a 30-day return policy. The cost of a light box ranges from $300 Cdn to $500 Cdn.

Is light therapy an effective treatment for SAD?
Over 70 controlled studies of light therapy for SAD have now been conducted. Most have shown superiority of bright light over placebo, as have three metaanalyses (3–5). The size of the body of literature examining light therapy for SAD, however, should not overshadow the
fact that many of these studies could be criticized on methodological grounds. Several early studies, for example, used small sample sizes, differing diagnostic criteria, crossover designs and relatively short treatment periods, compared with those used in drug trials for depression. In addition, the difficulty of finding a credible placebo for bright light remains a controversial issue.

Even so, over recent years, trials of light therapy have shown increasingly more rigorous methodologies. Two relatively large and well-designed studies, in particular, have shown efficacy for fluorescent light boxes over placebo (6,7), and it is estimated that about 64 per cent of patients with SAD will have a good clinical response to light therapy (8). In clinical practice, using the 10,000 lux light box for 30 minutes daily (preferably in the morning) has become the standard, although the 2,500 lux light box can alternatively be used for one to two hours daily. Response to treatment often occurs within one week, although some patients may require two to four weeks to respond. As with all treatment interventions for depression, however, emphasis should be placed upon the complete abatement of symptoms, along with obtaining treatment response.

What are the potential side effects of light therapy?
Light therapy has been shown to produce relatively limited or mild side effects, with the most common being headache, eye strain, nausea or agitation. Rare reports of hypomania or mania as a result of light therapy have occurred. Consequently, patients with bipolar disorder should be monitored closely during treatment. There are no absolute contraindications to light therapy, and no evidence exists that it associates with ocular or retinal damage. Nevertheless, patients with ocular risk factors (for example, retinal disease, diabetes, macular degeneration, photosensitizing medications, such as lithium, St. John’s Wort, and phenothiazine antipsychotics) should have a baseline ophthalmological consultation prior to starting light therapy and should undergo periodic monitoring.

Antidepressant Medication
Are antidepressants an effective treatment for SAD?
Although several pilot studies have addressed the efficacy of antidepressants in treating SAD, only two randomized controlled trials with reasonable numbers of participants have been conducted to date. In the first, 68 patients were randomized to five weeks of either fluoxetine (20 mg daily) or placebo following a week-long, wash-out period (9). Significantly higher rates of clinical response were observed in the fluoxetine group than in the placebo group (59 per cent vs 34 per cent). In the second study, 187 patients were randomized to either sertraline (titrated up to 200 mg daily) or placebo for an eight-week treatment period. Sertraline was shown to be significantly superior to placebo on several outcome measures, including reduction in continuous depression scores (10). Both studies reported effect sizes in the region of 0.5, which are in the same range as those obtained for antidepressants in the treatment of nonseasonal depression. Several other antidepressants were assessed in the treatment of SAD, including moclobemide, citalopram, tranylcypromine and bupropion. Most often, these studies were small and were either an open or an idiosyncratic design, making it difficult to draw conclusions. Still, it is likely that other antidepressants are also effective in the treatment of SAD.

What are the potential side effects of antidepressants?
Patients with SAD appear to tolerate treatment with selective serotonin reuptake inhibitors (SSRIs) quite well. In the Lam and others sertraline study, commonly reported side effects included headache, flu-like symptoms, rhinitis and pharyngitis (9). In the Moscovitch and others fluoxetine study, commonly reported side effects included nausea, insomnia and diarrhea (10).

Light therapy vs antidepressant medications
Current evidence does not indicate conclusively whether light therapy or antidepressants should be considered a first-line treatment for SAD. Some experts consider light therapy the treatment of choice for seasonal depression, particularly if one considers the intervention’s rapid onset of action and low side effect burden. Further, research indicates that antidepressants are generally unpopular with the general public. However, without direct comparisons showing clear superiority in efficacy, tolerability, safety or patient preference of one treatment over another, we must base treatment decisions upon individual assessment of benefits and risks. Table 1 summarizes factors to consider when making this decision.

Management Issues
When should you combine light therapy and medications?
No studies exist that combine treatment with light therapy and antidepressants. Generally, one treatment should be used at a time to minimize clinical confusion about the therapeutic effects and side effects of treatment. Yet, for some clinical situations, combined treatment should be considered, including cases where there has been a partial response to either therapy alone or a partial response to treatment in past episodes.

How long should a patient with SAD be treated within a season?
A therapeutic trial of light therapy should be two to four weeks; antidepressant trials in patients with SAD should be six to eight weeks. Because of relapse risk, patients should continue treatment for the entire winter season until the time of their natural spring or summer remission. Intervention is not usually recommended during the summer months. Following a season of successful treatment, restart the intervention in subsequent years either with onset of mild symptoms or in advance of the onset of such
symptoms. Consider preventative year-around antidepressant treatment if patients are poorly compliant or motivated, if they take a long time to taper on and off medications, and if they are unable to recognize early signs and symptoms of depression or have transient symptoms during the summer.

**Alternative Treatments**

Several small studies have looked at nonantidepressant medications in the treatment of SAD, including l-tryptophan, hypericum (St. John’s Wort), propranolol and melatonin. These medications, however, require further study prior to their recommendation for SAD treatment.

Growing evidence reveals that exercise may help regulate mood in nonseasonal depression, and preliminary work has examined the benefits of using exercise as a conjunctive treatment for SAD. For example, fitness training in bright-light conditions has been found to result in greater relief from the atypical symptoms of SAD than training in ordinary room light (11). While this area of research is still in its infancy, combining bright light and exercise seems reasonable, especially if it has the added benefit of reducing weight gain during the winter months.

Other work indicates that patients with SAD experience cognitive impairments similar to those with nonseasonal depression. That psychotherapy might benefit in treating the cognitive consequences of SAD seems plausible. However, the efficacy of this form of therapy for SAD, either alone or combined with light therapy, has yet to be evaluated. Finally, novel treatment interventions for SAD have also included high-density negative ions and sleep deprivation protocols, but both require further study before recommendation as a treatment protocol.

**Conclusions**

Despite some methodological problems with early research in this area, there is now good evidence that light therapy is an efficacious treatment for SAD. There remains a paucity of data concerning the treatment of the condition with antidepressants, but preliminary research indicates that the SSRIs are also an effective treatment intervention for the condition. Currently, little evidence is available concerning alternative treatments for SAD such as exercise, psychotherapy, nonantidepressant medications or novel interventions.

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**References**


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**Table 1 Factors to consider when choosing between light therapy (LT) and antidepressant medications as first-line treatments**

<table>
<thead>
<tr>
<th>Light therapy</th>
<th>Medications</th>
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</thead>
<tbody>
<tr>
<td>Depression less severe</td>
<td>More severe depression</td>
</tr>
<tr>
<td>More atypical symptoms</td>
<td>More melancholic symptoms</td>
</tr>
<tr>
<td>Good compliance for LT</td>
<td>Low interest or motivation for LT</td>
</tr>
<tr>
<td>Warrants nonpharmacologic treatment (pregnancy and breast feeding)</td>
<td>LT too inconvenient</td>
</tr>
<tr>
<td>Able to make time commitment for LT</td>
<td>Unable to make time commitment for LT</td>
</tr>
<tr>
<td>Relative contraindications to drug therapy (hepatic disease and allergies)</td>
<td>Relative contraindications to LT (retinal disease and photosensitizing drugs)</td>
</tr>
<tr>
<td>Intolerant to medication side effects</td>
<td>Intolerant to LT side effects</td>
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<tr>
<td>Assessing costs: greater initial cost, but less expensive ongoing costs</td>
<td>Assessing costs: less initial cost but greater ongoing costs</td>
</tr>
<tr>
<td>light box covered by insurance?</td>
<td>medications covered by insurance?</td>
</tr>
</tbody>
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Note: None of these factors is absolute
Nominations for 2002 Alex Leighton Award
Mises en candidature pour le prix Alex Leighton de 2002

Nominations are open for the 2002 Alex Leighton Award. The Alex Leighton Award was created in September 1998 to honour this leading figure of Canadian Psychiatric Epidemiology. Professor Alex Leighton has been a pioneer and a leader in psychiatric epidemiology. He has brought innovative scientific endeavours together with humanistic values and social concerns. He has also been a great communicator and teacher, training and inspiring generations of psychiatric epidemiologists and scientists. The classic Stirling County study that has been conducted over the past 4 decades in Nova Scotia, and the famous book My Name is Legion, have ensured that Canadian studies are part of any textbook of Psychiatry and Psychiatric Epidemiology.

The Alex Leighton Award is a joint initiative of the Canadian Psychiatric Association (CPA) and the Canadian Academy of Psychiatric Epidemiology (CAPE). It is awarded yearly at the Annual meetings of CAPE and CPA. The goal is to recognize an individual or a group of individuals who have made a significant contribution to the advancement and diffusion of Canadian psychiatric epidemiology through innovative studies, methods, teaching, or transfer of knowledge. It can be related to lifelong activities or to a recent significant achievement made by more junior scientists. In either case, the work must be easily recognized as making a significant contribution to the field of psychiatric epidemiology in Canada and/or internationally through studies or activities conducted in Canada. Nominees may come from either CAPE or CPA members.

The previous awards were given to:
1999- Roger Bland
2000- Dan Offord
2001- Paula Goering

Nominations should include a 1-page summary by the nominator supporting the candidate’s achievements as they pertain to the eligibility for this award, and the candidate’s CV.

Please send your nominations for the year 2002 Alex Leighton Award before August 1st 2002 to Alain D. Lesage, MD, M.Phil., FRCP, CAPE President, e-mail: alesage@ssss.gouv.qc.ca

Les mises en candidature sont ouvertes pour le prix Alex Leighton de 2002. Le prix Alex Leighton a été instauré en septembre 1998 pour honorer cette figure de proue de l’épidémiologie psychiatrique au Canada. Le professeur Alex Leighton a été un pionnier et un meneur de l’épidémiologie psychiatrique.
Il a greffé à des entreprises scientifiques innovatrices des valeurs humaines et des préoccupations sociales. C’était également un grand communicateur et enseignant, qui a formé et inspiré des générations d’épidémiologistes psychiatriques et de scientifiques. L’étude classique du comté de Stirling qui a été menée au cours des 40 dernières années en Nouvelle-Écosse et le fameux ouvrage My Name is Legion ont fait en sorte que les études canadiennes font partie de tout manuel de psychiatrie et d’épidémiologie psychiatrique.

Le prix Alex Leighton est une initiative conjointe de l’Association des psychiatries du Canada (APC) et de l’Académie canadienne d’épidémiologie psychiatrique (ACEP). Il est décerné chaque année aux assemblées générales annuelles de l’APC et de l’ACEP. Il vise à reconnaître une personne ou un groupe de personnes qui ont contribué notablement à l’avancement et à la diffusion de l’épidémiologie psychiatrique canadienne par des études, des méthodes, des cours ou un transfert de connaissances innovateurs. Il peut couronner des activités de durée de carrière ou souligner une réalisation importante récente de jeunes scientifiques. De toute façon, les travaux doivent être reconnus apporter une importante contribution au domaine de l’épidémiologie psychiatrique au Canada ou sur la scène internationale par des études ou des activités menées au Canada.
Les candidats peuvent être membres soit de l’APC, soit de l’ACEP.

Les prix précédents ont été remis à :
1999- Roger Bland
2000- Dan Offord
2001- Paula Goering.

Les mises en candidature doivent comprendre un résumé d’une page par la personne qui appuie les réalisations du candidat admissibles à ce prix ainsi que le curriculum vitae du candidat.

Veuillez envoyer vos nominations pour le prix Alex Leighton de 2002 avant le 1er août 2002 à Alain D. Lesage, M.D., M.Phil., FRCP, président de l’ACEP, courriel : alesage@ssss.gouv.qc.ca