Seasonal affective disorder (SAD)

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As we enter the shortest days of the year, some patients may experience depression and for many this is a recurring event. Recurrent major depressive disorder with seasonal pattern, more commonly known as seasonal affective disorder (SAD), affects two to three per cent of all Canadians.[1] A milder form ("winter blues") affects up to 10 to 20 per cent.[2] Symptoms generally occur in the fall or winter and remit by spring, though a minority of patients experience the opposite pattern (summer SAD). The incidence increases with latitude, and is more common between 20 and 50 years, and in women.[1-3] The etiology of SAD remains unclear, but it is hypothesized that circadian rhythms and genetic factors are involved, and that serotonin, catecholamines, and melatonin also play a role.[1]

Light therapy remains one of the main treatments for winter SAD.[4,5] However, questions remain about what is optimal light therapy (e.g. spectrum and intensity/dose).[6,7] A Swedish health technology assessment found that light therapy improved depression scores in the first few weeks of therapy compared to placebo, but the effect diminished over time.[5] Light therapy had no benefit when looking at clinical response (a 50 per cent reduction in depression score) as the outcome. Side effects, however, tend to be mild and include agitation, headache, eye strain and nausea. Hypomania has been reported with the initiation of light therapy. Blue wavelength light may harm the retina.

Various drug therapies have been studied for SAD (Table 1), with the majority of studies focusing on SSRIs and newer antidepressants. Although there are many reports of positive effects with medications, the quality of evidence overall is also poor. Of note, tricyclic antidepressants are not recommended since their sedating effects can exacerbate sleepiness and lethargy that accompanies SAD[8], and there is a lack of evidence of benefit.

Extended-release bupropion is the only pharmacological therapy officially indicated for the *prevention* of SAD,[9,10] although other serotonergic antidepressants may also be effective.[11] Preventative treatment is usually started in the fall before the anticipated onset of symptoms, and tapered off in the spring, four to six months later.

Light therapy or drug therapy?

There are few direct comparisons between light therapy and medication so it is not possible to make a specific recommendation. Initial treatment decisions may be made on factors such as preference, convenience, and costs. Light therapy is considered generally "low risk",[4] but does require a daily time commitment.[12] A recent Canadian study comparing the total health care costs of light therapy versus fluoxetine (two therapies that have been reported to be equally effective) found that while purchasing a light box might cost more up front, after the first year of treatment light therapy starts to cost less, especially if fluoxetine doses are greater than 20 mg/d.[13]

Summary:

Patients suffering from seasonal affective disorder may benefit from light or drug, but the overall quality of evidence, especially for drug therapy is low. Bupropion is the most effective drug treatment.

Table 1: Drug therapies for SAD

SSRIs	Fluoxetine 20 mg/d vs placebo: clinical response* 59% vs 34% (p<0. n=68)[13] Fluoxetine 20 mg/d vs light therapy: fluoxetine response 65%; remis Bright light response 70%; remission 50%) (n=35) [15] Fluoxetine 20 mg compared to light therapy: 67% response in each fluoxetine 54% remission; light 50% (n=96)[16] Sertraline 50-200 mg/d x 8 weeks: significant reduction in anxiety a depression scores for sertraline compared to placebo, but no signifi difference in proportion of responders (56% vs 50%) (n=187)[17] Escitalopram 10-20 mg/d: response rate 95%, remission 85% (n=20, 8 weeks)[18]
Duloxetine (SNRI)	Duloxetine 60-120 mg daily for 8 weeks improved depression score social functioning, and reduced lost productivity in one open label s The median time to improvement was 4 weeks.[19]
Bupropion (NDRI)	Bupropion 200-400 mg/d produced complete or partial response in to severely depressed patients with SAD in one small open-label stu Bupropion XL 150-300 mg/d reduced recurrence of depression in pr studies by 44% compared to placebo (total n= 1042)[9]
Moclobemide	Moclobemide 400 mg/d was no better than placebo in improving ov depression scores after 3 weeks, but seemed to improve symptoms hypersomnia, hyperphagia, and carbohydrate craving.[21] Moclobemide 300-450 mg/d x 6 weeks was beneficial in about two- patients with SAD in one small open-label study (n=11)[22]
Melatonin	Low-dose melatonin (0.125 mg) given 8 and 12 hours after waking i depression scores compared to placebo in a small pilot study (n=10 In patients with subsyndromal SAD, controlled-release melatonin (2 hours before bed) improved sleep and vitality ratings compared to (n=13)[24]
St John's wort	900 mg daily of Hypericum extract LI 160 reduced depression score 70% in a small group of patients with SAD (n=20). There was a trend increased response in patients who received bright light treatment addition.[25]
Ginkgo biloba extract	Ginkgo biloba extract PN246 was no better than placebo in prevent depression (n=27)[26]
Vitamin D	Despite anecdotal claims that the sunshine vitamin helps winter de some evidence that it elevates mood, there is no strong evidence fo SAD.[27,28] Vitamin D supplementation did not result in differences in health scores among older women compared to placebo (n=2117)[29]
Other	There is some evidence that modafinil, tryptophan, the serotonin-n reuptake inhibitor reboxetine**, and the melatonin agonist agomel also be beneficial. Alprazolam, vitamin B12, and levodopa/carbidop effective.[30-35]

RCT – randomized controlled trial

* clinical response defined as a 50% reduction in depression rating scores

**not available in Canada

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