Bright Light Therapy in Parkinson's Disease: a Pilot Study


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Several observations suggest a beneficial effect of melatonin antagonism for Parkinson's disease (PD). Although bright light therapy (BLT) suppresses melatonin release and is an established treatment for depression and sleep disturbances, it has not been evaluated in PD. We examined effects of BLT on motor symptoms, depression, and sleep in PD in a randomized placebo-controlled double-blind study in 36 PD patients, using Parkinson's Disease Rating Scale (UPDRS) I-IV, Beck's Depression Inventory, and Epworth Sleepiness Scale. All patients received BLT for 15 days in the morning, 30 min daily. Illuminance was 7,500 lux in the active treatment group and 950 lux in the placebo group. Although group differences were small, BLT led to significant improvement of tremor, UPDRS I, II, and IV, and depression in the active treatment group but not in the placebo group. It was very well tolerated. Follow up studies in more advanced patient populations employing longer treatment durations are warranted.

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Primary and Secondary Features of Parkinson's Disease Improve With Strategic Exposure to Bright Light: A Case Series Study.


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The antagonism of melatonin in models of Parkinson's disease (PD) can reduce the severity of motor impairment associated with dopamine (DA) degeneration. In consideration of the potent antidepressant effects of bright light therapy (LT), that LT suppresses melatonin secretion, that depression is commonly observed in PD, and that exposure to constant light facilitates recovery from experimental PD, the object of the present study was to strategically administer LT to PD patients and observe the effects on depression, insomnia, and motor performance. Twelve patients diagnosed with PD were exposed to white fluorescent light for 1-1.5 h at an intensity of 1000 to 1500 lux once daily commencing 1 h prior to the usual time of sleep onset, approximately 22:00 h in most patients. All patients were assessed before LT commenced and at two weeks, five weeks, and regular intervals thereafter. Within two weeks after commencing LT, marked improvement in bradykinesia and rigidity was observed in most patients. Tremor was not affected by LT treatment; however, agitation, dyskinesia, and psychiatric side effects were reduced, as verified by decreased requirement for DA replacement therapy. Elevated mood, improved sleep, decreased seborrhea, reduced impotence, and increased appetite were observed after LT. LT permitted the reduction of the dose of L-dopa, bromocriptine, or deprenyl in some patients by up to 50% without loss of symptom control. Factors limiting the efficacy of LT included multiple disease states, treatment compliance, polypharmacy, emotional stress, advanced age, and predominance of positive symptoms. The results of this case series study confirms previous work describing light as efficacious in the treatment of PD and suggest that controlled trials may help to elucidate how LT might be used strategically as an adjunct therapy to improve the morbidity of PD patients.
Evolving Applications of Light Therapy.


Terman M.

The psychiatric intervention, light therapy, grew from an intensive 25-year research focus on seasonal affective disorder (SAD). Dosing and timing strategies have been honed to optimize the antidepressant effect, and efficacy relative to placebo has provided the evidence base for widespread implementation. A persistent question has been whether the model system for SAD has wider utility for psychiatric disturbance, even beyond depression. The circadian phase-shifting capacity of timed light exposure is universal, and chronobiological factors are at play across the disease spectrum. Recent promising initiatives extend to light treatment for nonseasonal major depressive disorder and bipolar depression, including drug- and electroconvulsive therapy-resistant cases. With light therapy, patients with antepartum depression may find an alternative to medication during pregnancy. Cognitive improvement under light therapy has been noted in adult attention deficit hyperactivity disorder. Motor function in Parkinson's disease has improved in parallel with the antidepressant effect of light therapy. The rest-activity disturbance of elderly dementia has been partially allayed under light therapy. In a new initiative, three major chronotherapeutic inventions-light therapy, sleep deprivation (wake therapy) and sleep time displacement (sleep phase advance therapy) are being combined to snap hospitalized patients out of deep depression and maintain long-term improvement.

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Insomnia in Patients With Neurodegenerative Conditions.

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Dauvilliers Y.

Comorbid insomnia and other sleep disturbances are common in patients with neurodegenerative disorders, such as Parkinson's or Alzheimer's disease. Insomnia in patients with neurological conditions may occur as a direct consequence of the disease itself or may be secondary to factors associated with the condition, such as pain, depression or the effects of medications. Disturbed sleep can have a significant impact on the patient's cognitive and physical function and may be associated with distress and depression. Insomnia also impacts patients' and caregivers' quality of life and is often cited as one of the primary reasons for patient institutionalization. Management of insomnia in patients with neurological disorders should be individualized to each patient's needs. The type of insomnia and any underlying causes of disturbed sleep must first be determined. Non-pharmacological interventions, such as behavioral modification, should be considered for all patients. Bright light therapy may be an effective treatment option for patients with disturbed sleep-wake patterns. Medications causing sleep problems should be withdrawn or doses and/or timing adjusted, whenever possible. Several pharmacological options are available to relieve the symptoms of insomnia as short-term treatment.