Tips from Other Journals

Adult Medicine

Tips from Other Journals are written by the medical editors of *American Family Physician.*

The trade names of drugs listed in Tips from Other Journals are based on what is currently available and not necessarily the brand of drug that was used in the study being discussed.

Bright Light Therapy: Not Just for Seasonal Affective Disorder

Background: Bright light therapy improves the symptoms of seasonal affective disorder by activating the suprachiasmatic nucleus, which helps regulate the circadian rhythm. Because bright light therapy also activates depression-associated neurotransmitter systems (e.g., the serotonin, norepinephrine, and dopamine pathways), it could also improve the symptoms of major depressive disorder. This may be particularly useful in older persons, who have less overall suprachiasmatic nucleus stimulation because of age-related declines in photoreceptor activity and who tend to be exposed less often to bright environmental light. Lieverse and colleagues conducted a double-blind, randomized, placebo-controlled trial to determine the effectiveness of bright light therapy in older persons who have major depressive disorder.

The Study: Investigators randomized a total of 89 patients who were 60 years and older with major depressive disorder to receive light therapy via one of two types of light boxes. Participants received bright pale blue light treatment (7,500 lux) or a biologically inactive dim red light treatment (50 lux) for one hour each morning for three weeks. Depression severity was measured with the Hamilton Rating Scale for Depression (HAM-D) just before the start of treatment, at the end of the three-week intervention, and again three weeks after treatment concluded.

Results: At the end of the three-week intervention, no difference was noted between groups in the number of persons responding to therapy (20 in the bright light therapy group versus 18 in the placebo group; $P = .20$). However, mean HAM-D scores improved more in the bright light therapy group than in the placebo group (43 versus 36 percent reduction in depression severity, respectively; $P = .03$). Three weeks after the intervention ended, the difference in HAM-D score improvement was even more pronounced (54 versus 33 percent reduction, respectively; $P = .001$), and significantly more patients receiving bright light therapy had responded to treatment compared with those receiving placebo (23 versus 15, respectively; $P = .05$; number needed to treat = 5). No effect was noted when possible confounders were studied (e.g., antidepressant use, atypical depressive features, seasonality of symptoms, treatment resistance). No differences in adverse effects were noted between groups. No hospitalizations or suicides occurred in either group.

Conclusion: In older patients with nonseasonal major depressive disorder, bright light therapy improved depressive symptoms better than placebo after three weeks of treatment. The proportion of responders in the treatment group increased three weeks after completion of therapy, and depressive symptoms were further reduced during this time. These effect sizes are comparable to effects reported for antidepressant therapy. These findings support the use of bright light therapy for persons who decline or are unable to tolerate antidepressant therapy. Further studies are required to determine the prolonged effects, and effects of long-term use, of bright light therapy in this population.

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Source: Lieverse R, et al. Bright light treatment in elderly patients with nonseasonal major depressive disorder: a randomized placebo-controlled trial. *Arch Gen Psychiatry.* January 2011;68(1):61-70.

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Which Rule Effectively Diagnoses Deep Venous Thrombosis?

Background: Deep venous thrombosis (DVT) is an uncommon yet potentially serious condition in patients presenting to primary care physicians. When DVT is suspected, most patients are referred for further testing, including compression ultrasonography. Although ultrasonography is safe and easily available, it requires an additional patient visit and increases medical costs. The Wells rule is a clinical decision rule that is used in many hospitals. The rule combines patient history and physical examination, followed by D-dimer assay to determine which patients need ultrasonography. The combination of low clinical suspicion, based on the decision rule, and a negative D-dimer assay effectively rules out DVT and precludes the need for ultrasonography.

The accuracy of the Wells rule in primary care has been questioned. A validation study showed an unacceptable failure rate, even when the results of the D-dimer assay were applied. This led to the development and validation of a primary care–specific decision rule *(see accompanying table)* that included elements of patient medical history, physical examination, and D-dimer assay, but, unlike the Wells rule, it does not include the estimated probability of an alternative diagnosis. To determine the safety and effectiveness of the primary care rule, van der Velde and colleagues compared the Wells rule with the primary care rule in an unselected primary care population.

The Study: More than 300 primary care physicians in the Netherlands participated in this study. Eligible participants presented with suspected DVT. Patients who were younger than 18 years and those who had received low-molecular-weight heparin or vitamin K antagonists were excluded. The physicians collected appropriate clinical data to apply both the Wells and primary care rules, and also performed a rapid point-of-care D-dimer assay and managed the patient clinically based on the score of the primary care rule. Under the primary care rule, patients with scores of less than 4 do not require treatment or referral for compression ultrasonography, whereas those with scores of 4 or greater should be referred for ultrasonography. All data were forwarded to the investigators. The physicians followed up with their patients five to nine days later.

In the 90 days after study entry, all patients received a questionnaire about signs and symptoms of venous thromboembolism, and subsequent medical information was collected from the primary care physicians if DVT was suspected. The investigators applied the Wells and primary care rules to each patient, with and without inclusion of the D-dimer assay result, and patients were stratified into low- or high-risk groups depending on their score. The primary outcome was the incidence of missed diagnosis of fatal or nonfatal pulmonary embolism or DVT. The number of patients referred for ultrasonography was also noted for each rule.

Table. Primary Care Rule to Rule out DVT

Variable	*Points*
Male sex	1*
Oral contraceptive use	1*
Presence of active malignancy (within six months)	1
Major surgery (within three months)	1
Absence of leg trauma	1*
Dilated collateral veins (not varicosed)	1
Calf swelling 3 cm or greater	2
Positive D-dimer assay	6*

NOTE: *A score of 3 or less rules out DVT without further testing.*

DVT = deep venous thrombosis.

**—Not present in the Wells rule.*

Adapted with permission from van der Velde EF, et al. Comparing the diagnostic performance of 2 clinical decision rules to rule out deep vein thrombosis in primary care patients. Ann Fam Med. *2011;9(1):32.*

Results: A total of 1,002 patients were evaluated for DVT. The mean age of participants was 58 years, and 37 percent were men. The most common clinical presentation was leg pain (87 percent) or leg swelling (78 percent) with a median duration of five days. DVT was diagnosed by objective testing in 129 patients who had high-risk scores and positive results on D-dimer assay. Of those patients, 23.2 percent were referred for ultrasonography based on the Wells rule, and 25.4 percent were referred based on the primary care rule. After three months, seven patients with low-risk scores and negative results on D-dimer assay were diagnosed with venous thromboembolism (1.6 percent from the Wells rule, 1.4 percent from the primary care rule), which is a missed diagnosis rate comparable to that of ultrasonography alone. For each 100 patients, using the Wells rule resulted in four more referrals for ultrasonography, whereas using the primary care rule resulted in 22 additional D-dimer assays. In this study, the costs were equivalent.

Conclusion: Both the Wells rule and the primary care rule are safe and effective for ruling out DVT in primary care; however, the primary care rule may be simpler to use.

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Source: van der Velde EF, et al. Comparing the diagnostic performance of 2 clinical decision rules to rule out deep vein thrombosis in primary care patients. *Ann Fam Med.* January/February 2011;9(1):31-36. ■