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Diabetes Care

In This Issue of *Diabetes Care*

Edited by Helaine E. Resnick, PhD, MPH

Computers/Devices Offer Modest Benefit for Diabetes Self-management

Rapid growth in technology—particularly mobile technology—has opened the door for development of novel strategies to improve diabetes self-management. Although face-to-face meetings have historically been the gold standard for improving self-management skills among people with diabetes, the practical challenges associated with attendance at these meetings (e.g., transportation, child care, lost wages) have resulted in a push to leverage the popularity of personal computers and mobile devices to access patients with diabetes for whom face-to-face meetings are inconvenient, impractical, or not desired. But how effective are these self-management technologies at improving key outcomes? A review and meta-analysis in this issue of *Diabetes Care* (**p. 1759**) concluded that at the current time, computer-based interventions for diabetes self-management have only a small benefit on key outcomes such as glucose control and that they have no impact on depression, quality of life, or weight. The new study included data from 16 randomized trials focusing on computer applications that used information input by the patient to provide a tailored response that aimed to improve one or more elements of diabetes self-management. Together, these studies used data from nearly 3,600 people with type 2 diabetes to whom interventions were delivered in clinics, by the Internet, and through mobile phones. Although the computerized technologies reduced HbA_{1c} by only –0.2% across the studies, the authors noted that the impact of the interventions on HbA_{1c} was larger in the subgroup of patients whose interventions involved mobile phones. In addition to the modest benefits that are summarized in the new report, the authors pointed out a number of methodological concerns in the design and implementation of the trials. These included issues as varied as randomization, selection bias, and attrition. The authors suggest that strategies for forward movement in this area should focus on improved design as well as exploration of protocols that focus on computerized interventions targeting both providers and patients. — *Helaine E. Resnick, PhD, MPH*

Pal et al. Computer-based interventions to improve self-management in adults with type 2 diabetes: a systematic review and meta-analysis. Diabetes Care 2014;37:1759–1766

Depression Common Among Adults With Type 1 Diabetes

The relationship between depression and unfavorable health outcomes is well known, and this relationship extends to people with type 1 diabetes. A new report in this issue of *Diabetes Care* (**p. 1563**) points out that most studies of depression in patients with diabetes have focused only on people with type 2 diabetes or that they combine the two types together, thereby obscuring the prevalence and correlates of depression among people with type 1 diabetes. To address this gap in the literature, the new study examined data from 6,172 adults with type 1 diabetes who were enrolled in the T1D Exchange clinic registry, a consortium of 70 endocrinology practices in the U.S. Patients completed a validated depression questionnaire, and this information was used to identify probable major depression. The investigators then related depression status to a variety of patient characteristics. The results of the new report showed that between 4.6% and 10.3% of adults with type 1 diabetes had probable major depression. Not unexpectedly, these patients had less favorable demographic, behavioral, and clinical profiles, including lower income and educational attainment, less exercise, and greater likelihood of having diabetes complications. Further, HbA_{1c} was higher among depressed patients, as was the frequency of diabetic ketoacidosis and hypoglycemic events. Results of the new study are in general agreement with past findings on depression in type 2 diabetes and signal the need to consider the role of depression in overall diabetes management. However, the authors also point out several limitations of their results including the cross-sectional nature of the data. Nonetheless, they stress that a better understanding of whether treatment of depression results in better outcomes for patients with type 1 diabetes may offer meaningful opportunities to improve quality of life for patients while simultaneously reducing costs. — *Helaine E. Resnick, PhD, MPH*

Trief et al. Depression in adults in the T1D Exchange clinic registry. Diabetes Care 2014;37:1563–1572

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Intensive Lifestyle Intervention Reduces Risk of Depressive Symptoms

The connection between type 2 diabetes and depression is well documented, as are the less favorable self-management practices and health outcomes among patients with both depression and type 2 diabetes. The link between diabetes and depression highlights the importance of understanding the potential impact that weight loss may have on depression among people with diabetes. Responding to this need, a new report in this issue of *Diabetes Care* (**p. 1544**) suggests that intensive lifestyle modifications result in favorable depression outcomes among obese people with type 2 diabetes. The report used data from the Look AHEAD study, a randomized clinical trial that compared two approaches to weight loss among obese people with type 2 diabetes. One group received diabetes support and education (DSE), and the other received a multifaceted intensive lifestyle intervention (ILI) aimed at reducing body weight by 7%. The study followed patients for a median of 9.6 years, and at study end, those in DSE and ILI arms lost 3.5% and 6.0% of their initial body weight, respectively. Results also showed that among people who did not have depressive symptoms at baseline, the risk of developing mild or greater depression was 15% lower in the ILI arm compared with that in the DSE arm. Importantly, there were no differences between the groups in the proportion of participants who started using antidepressant medications after the baseline exam. Further, among participants who had depression at baseline, there were no differences between the groups in worsening of symptoms, suggesting that ILI did not exacerbate depression among symptomatic individuals. These results support the idea that ILI reduced the risk of depression among obese people with type 2 diabetes—an observation that was not attributable to initiation of antidepressant use. — *Helaine E. Resnick, PhD, MPH*

The Look AHEAD Research Group. Impact of intensive lifestyle intervention on depression and health-related quality of life in type 2 diabetes: The Look AHEAD trial. Diabetes Care 2014;37:1544–1553

Varied Associations Between Diabetes and PAD Phenotypes

A study in this issue of *Diabetes Care* (**p. 1636**) suggests that the association between diabetes and peripheral vascular disease (PVD) may be more complex than originally thought. Historically, studies of diabetes and PVD have focused on peripheral arterial disease (PAD), often measured with the ankle-brachial index (ABI). Fewer studies have examined diabetes in relation to other peripheral vascular subtypes such as carotid artery stenosis (CAS) and abdominal aortic aneurysm (AAA), and no large studies have simultaneously explored diabetes in relation to all three vascular territories. The new report is notable for its large sample size: The authors used data from nearly 3.7 million people in the Life Line Screening survey, a vascular survey administered between 2003 and 2008 at more than 20,000 screening sites in all 50 U.S. states. The survey ascertained diabetes via self-report and use of hypoglycemic medications, PAD was measured with ABI, and both CAS and AAA were evaluated by ultrasound. The prevalence of the three vascular phenotypes was based on a combination of these direct measures and report of key events such as revascularization, vascular repair, and stroke. Almost 11% of the Life Line Screening sample had diabetes, and all three vascular phenotypes were more common in participants with diabetes. However, when the authors adjusted the association between diabetes and the three vascular phenotypes for potentially confounding demographic and clinical factors, a different picture emerged. The adjusted odds of PAD among people with diabetes relative to those without was 1.42—a finding that was very similar to the adjusted association for CAS (odds ratio [OR] 1.45). In contrast, adjustment for confounding factors suggested that diabetes was associated with decreased odds of AAA (OR 0.86). The reduced risk of AAA appeared to be largely due to a 21% reduction in AAA among diabetic men, an association that was absent in women. Future studies may help shed light on the heterogeneity of these important relationships as well as their implications for clinical practice. — *Helaine E. Resnick, PhD, MPH*

Shah et al. Diabetes and vascular disease in different arterial territories. Diabetes Care 2014;37:1636–1642

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