2013

What Health Education Interventions Reduce the Progression of Prediabetes to Overt Diabetes in High-Risk Groups?

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disorders. They received 4 to 6 sessions of ECT (time frame not specified). Assessments were made before ECT and 3 days after the last ECT session.

The number of tender points decreased significantly with ECT from 16 to 6.7 points ($P=.0006$) at 3 days. Scores on a 0–10 visual analog pain scale decreased significantly with ECT from 7.5 to 3.2 at 3 days ($P=.0006$) and remained low at 3 months ($4; P=.0013$). The Beck's depression inventory (maximal score is 63) did not change significantly at 3 days (from 13 to 12; $P=.29$).

A case-matching study was done comparing outcomes of chronic pain and major depression in 25 inpatients on a Chronic Pain Treatment Service treated with ECT and medications and 22 controls treated with medications only. Both groups received the same behavioral and pharmacological treatments for depression and chronic pain. Patients usually received ECT 3 times a week for a total of 10 to 12 treatments. Patients were matched on sex, age, admission date, psychiatric diagnoses, and, as much as possible, on race and pain syndrome diagnosis. The most common pain diagnosis, in 12 of the cases, was low-back pain. Outcome measures included 0–10 pain rating scales and the Montgomery-Åsberg Depression Inventory (scoring range 0–60). Measurements were made on the first 2 days of admission and the last 3 days of admission.

The percent change in the depression score did not differ significantly between the ECT and control groups (56% vs 41%; $P=.166$). The ECT group’s pain score decreased from 8.1 to 3.4, while the control group’s score decreased from 6.9 to 5.5 (improvement of 60% vs 16%; $P<.0001$). Limitations of the study included the lack of blinding and no follow-up data on the duration of the analgesic effects.

A review of the medical literature through 2000 (that did not describe the search methodology) discussed 17 case series involving more than 156 patients who received ECT for a variety of pain syndromes. Despite the heterogeneity of the clinical cases and no attempt to combine data in a meta-analysis, the reviewers drew several conclusions: (1) a pain syndrome clearly secondary to depression is likely to respond to ECT; (2) a chronic atypical pain syndrome without an associated depression has a much smaller chance of receiving any benefit from ECT; and (3) there may be pain syndromes that do respond to ECT even in the absence of depression, such as reflex sympathetic dystrophy and phantom limb pain. Conversely, the authors concluded that patients with poststroke thalamic pain did not appear to benefit from ECT.

**Evidence-Based Answer**

Diet counseling, exercise, and the combination of diet and exercise counseling are more effective than limited diet advice in reducing the risk of progression to diabetes in patients at risk (SOR: B, meta-analysis of RCTs with an inconsistent RCT).

A meta-analysis of 21 RCTs involving 8,084 patients with impaired glucose tolerance reviewed different aspects of prevention of type 2 diabetes, such as lifestyle interventions or pharmacological interventions. The lifestyle interventions included diet modification and exercise programs to encourage weight loss in participants. The pharmacological interventions included acarbose, lumamine, glipizide, metformin, phenformin, or orlistat.

There was a significant reduction of progression to diabetes with lifestyle interventions (7 trials; N=1,978) including targeted dietary education (HR 0.67; 95% CI, 0.49–0.92; NNT=6), exercise recommendations for 3×/week to daily (HR 0.49; 95% CI, 0.32–0.74), and diet/exercise combinations (HR 0.49; 95% CI, 0.40–0.59) compared with limited advice and support on diet and exercise. Pharmacological interventions were pooled as oral diabetes medications or weight-loss medications. Oral diabetes medication (9 trials; N=6,714; HR 0.70; 95% CI, 0.62–0.79; NNT=10) and orlistat (2 trials; N=3,952; HR 0.44; 95% CI, 0.28–0.69; NNT=5) showed a statistically significant risk reduction compared with a placebo.

Another RCT, published after the meta-analysis, evaluated the prevention of type 2 diabetes in...
102 patients who were older than 40 years and overweight (body mass index >25 kg/m²), and had impaired glucose tolerance.² The overall cumulative incidence of progression to diabetes was not significantly reduced in the intervention group, which included individual motivational interviewing that focused on weight reduction, increased physical activity, increased fiber and carbohydrate intake, and decreased fat intake, compared with the control group (RR 0.45; 95% CI, 0.2–1.2).

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What is the long-term prognosis for patients with coronary artery disease and von Willebrand’s disease?

Evidence-Based Answer
The long-term prognosis is unknown. No clinical studies have evaluated long-term outcomes in patients with von Willebrand’s disease (vWD) and comorbid coronary artery disease (CAD). It is also unknown if there is an association between coronary heart disease (CHD) risk and decreased von Willebrand’s factor (vWF) levels in the general population (no SOR, conflicting cohort studies and meta-analysis).

vWD is an inherited defect in vWF protein whose function is to promote formation of the platelet plug in hemostasis.

A prospective cohort study of 625 men with major coronary events and 1,266 men without known CAD (mean age 52 years) compared baseline vWF levels to evaluate whether vWF concentrations are prospectively related to CHD risk in the general population.¹ Over a 16-year period, men in the top third of vWF levels (>126 IU/dL) were significantly more likely to have had a coronary event compared with those in the lowest third (<90 IU/dL) (OR 1.8; 95% CI, 1.4–2.4; P<.0001), with little change after adjustment for smoking and other risk factors (OR 1.8; 95% CI, 1.4–2.4; P<.001).

These authors also performed a meta-analysis (including their own study) of 6 prospective cohort studies (N=21,354, mean age 56 years) comparing 1,524 patients with CAD with 19,830 control patients to evaluate whether serum vWF concentration was related to CHD in the general population. There was a significantly increased risk of myocardial infarction (MI) for patients with vWF levels in the highest third (>126 IU/dL) compared with those in the lowest third (<90 IU/dL) (OR 1.5; 95% CI, 1.1–2.0).¹

A subsequent prospective cohort study of 9,758 men (aged 50–59 years) with no known CAD who were followed more than 5 years examined the association between plasma vWF levels and fatal or nonfatal MI and stable or unstable angina pectoris.² A total of 158 MIs and 142 angina pectoris events were observed. Baseline levels of vWF were higher for individuals who subsequently developed an MI, but not angina pectoris. After adjustment for conventional cardiovascular risk factors (hypertension, hyperlipidemia, smoking, and/or diabetes), the risk of MI was higher in individuals with plasma vWF in the highest quartile than in those in the lowest quartile (RR 3.0; 95% CI, 1.6–5.8; P<.01).

Finally, in a more recent large prospective study evaluating the predictive value of serum markers of CHD (N=18,569 patients without known CAD at recruitment) followed for more than 17 years, there were 2,549 major coronary events (72% men, mean age 55 years, 1,073 CHD deaths and 701 nonfatal MI; 28% women, mean age 55 years, 385 CHD deaths and 300 nonfatal MI).³ There was no difference in the incidence of CHD for individuals with vWF levels in the top third (>124 IU/dL) versus the lowest third (≤88 IU/dL) adjusted for age, sex, smoking, lipids, and other risk factors (OR 1.1; 95% CI, 0.97–1.7).

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