Research article

Adjunctive naturopathic care for type 2 diabetes: patient-reported and clinical outcomes after one year

Ryan Bradley, **Karen J Sherman**, **Sheryl Catz**, **Carlo Calabrese**, **Erica B Oberg**, **Luesa Jordan**, **Lou Grothaus** and **Dan Cherkin**

BMC Complementary and Alternative Medicine 2012, **12**:44 doi:10.1186/1472-6882-12-44

Published: 18 April 2012

Abstract (provisional)

Background

Several small, uncontrolled studies have found improvements in self-care behaviors and reductions in clinical risk in persons with type 2 diabetes who received care from licensed naturopathic physicians. To extend these findings and determine the feasibility and promise of a randomized clinical trial, we conducted a prospective study to measure the effects of adjunctive naturopathic care (ANC) in primary care patients with inadequately controlled type 2 diabetes.

Methods

Forty patients with type 2 diabetes were invited from a large integrated health care system to receive up to eight ANC visits for up to one year. Participants were required to have hemoglobin A1c (HbA1c) values between 7.5-9.5 % and at least one additional cardiovascular risk factor (i.e., hypertension, hyperlipidemia or overweight). Standardized instruments were administered by telephone to collect outcome data on self-care, selfefficacy, diabetes problem areas, perceived stress, motivation, and mood. Changes from baseline scores were calculated at 6- and 12-months after entry into the study. Six and 12-month changes in clinical risk factors (i.e., HbA1c, lipid and blood pressure) were calculated for the ANC cohort, and compared to changes in a cohort of 329 eligible, non-participating patients constructed using electronic medical records data. Between-cohort comparisons were adjusted for age, gender, baseline HbA1c, and diabetes medications. Six months was prespecified as the primary endpoint for outcome assessment.

Results

Participants made 3.9 ANC visits on average during the year, 78 % of which occurred within six months of entry into the study. At 6-months, significant improvements were found in most patient-reported measures, including glucose testing (P = 0.001), diet (P = 0.001), physical activity (P = 0.02), mood (P = 0.001), self-efficacy (P = 0.0001) and motivation to change lifestyle (P = 0.003).

Improvements in glucose testing, mood, self-efficacy and motivation to change lifestyle persisted at 12-months (all P < 0.005). For clinical outcomes, mean HbA1c decreased by 0.90 % (P = 0.02) in the ANC cohort at 6-months, a 0.51 % mean difference compared to usual care (P = 0.07). Reductions at 12-months were not statistically significant (0.34 % in the ANC cohort, P = 0.14; -0.37 % difference compared to the usual care cohort, P = 0.12).

Conclusions

Improvements were noted in self-monitoring of glucose, diet, self-efficacy, motivation and mood following initiation of ANC for patients with inadequately controlled type 2 diabetes. Study participants also experienced reductions in blood glucose that exceeded those for similar patients who did not receive ANC. Randomized clinical trials will be necessary to determine if ANC was responsible for these benefits.

**

Research article

Health economic evaluation of acupuncture along meridians for treating migraine in China: results from a randomized controlled trial

Zhuq-qing Deng, **Hui Zheng**, **Ling Zhao**, **Si-yuan Zhou**, **Ying Li** and **Fan-rong Liang**

BMC Complementary and Alternative Medicine 2012, **12**:75 doi:10.1186/1472-6882-12-75

Published: 14 June 2012

Abstract (provisional)

Background

To evaluate different types of acupuncture treatment for migraine in China from the perspective of health economics, particularly the comparison between treatment of specific acupoints in Shaoyang meridians and penetrating sham acupoints treatment.

Methods

Data were obtained from a multicenter, randomized controlled trial of acupuncture treatment in patients with migraine. Four-hundred eighty migraineurs were randomly assigned to 3 arms of treatment with genuine acupoints and 1 arm of penetrating sham acupoints. The primary outcome measurement was the cost-effectiveness ratio (C/E), expressed as cost per 1 day reduction of

headache days from baseline to week 16. Cost-comparison analyses, differences in the migraine-specific quality of life questionnaire (MSQ), and the incremental cost-effectiveness ratio were taken as secondary outcome measurements. In addition, a sensitivity analysis was conducted.

Results

The total cost per patient was CNY1273.2 (95% CI 1171.3-1375.1) in the Shaoyang specific group, CNY1427.7 (95% CI 1311.8-1543.6) in the Shaoyang non-specific group, CNY1490.8 (95% CI 1327.1-1654.6) in the Yangming specific group, and CNY1470.1 (95% CI 1358.8-1581.3) in the sham acupuncture group. The reduced days with migraine were 3.972+/-2.7, 3.555+/-2.8, 3.793+/-3.6, and 2.155+/-3.7 in these 4 groups ($P < 0.05$ for each genuine acupoints group vs the sham group), respectively, at week 16. The C/Es of the 4 groups were 320.5, 401.6, 393.1, and 682.2, respectively. Results of the sensitivity analysis were consistent with that of the cost-effectiveness analysis. The Shaoyang specific group significantly improved in all 3 MSQ domains compared with the sham acupuncture group.

Conclusions

Treatment of specific acupoints in Shaoyang meridians is more cost-effective than that of non-acupoints, representing a dramatic improvement in the quality of life of people with migraine and a significant reduction in cost. Compared with the other 3 groups, Shaoyang-specific acupuncture is a relatively cost-effective treatment for migraine prophylaxis in China.