P-0465 – Effects of Ba-Duan-Jin on physical and psychosocial outcomes among diabetes patients: a systematic review

YU, Xingfeng¹; Chau, JPC¹; HUO, Lanting²

¹The Nethersole School of Nursing, Faculty of Medicine, The Chinese University of Hong Kong; Hong Kong

²Faculty of Nursing, Health Science Center, Xi'an Jiaotong University, Xi'an, P. R. China

Background

Diabetes mellitus (DM) has become a worldwide health issue which needs to be addressed urgently. Recent reports suggest that 415 adults have DM and 318 million adults are suffering from impaired glucose tolerance, indicating a greater risk of developing DM [1, 2]. Among all cases, type 2 diabetes mellitus (T2DM) accounts for more than 90% [1, 3].

Physical activity is an important determinant of optimal control over the disease for T2DM patients [4]. Being an aerobic exercise which combines physical activity, controlled breath and meditation, Qigong is gaining popularity in the management of DM all over the world [5]. The effectiveness of Ba-Duan-Jin, also called Eight Section Brocade Qigong, for T2DM patients has been intensively investigated in clinical trials.

However, to date, no review has been identified to systematically synthesize the evidence on the effectiveness of Ba-Duan-Jin for T2DM patients.

Objective

To synthesize and present the best available evidence on the effects of Ba-Duan-Jin on physical and psychosocial outcomes among T2DM patients.

Methods

- This systematic review was conducted in accordance with the PRISMA statements [6].
- Ten English or Chinese electronic databases, including MEDLINE, EMBASE, PsycINFO, CINAHL Complete, AMED and Cochrane Central Register of Controlled Trials, CNKI, Wan Fang, SinoMed and Airtiti Library, were search through their inception to December 2016.
- This systematic review considered all journal articles reporting randomized controlled trials (RCTs) or controlled clinical trials (CCTs) that investigated the effects of Ba-Duan-Jin on physical or psychosocial outcomes, including haemoglobin A, glycosylated (HbA1c), fasting blood glucose (FBG), blood pressure, depression and quality of life (QOL), among adult T2DM patients.
- Two independent reviewers selected studies according to the pre-specified inclusion and exclusion criteria and appraised the risk of bias of the included studies. Discrepancies were solved by discussion or consulting to the third reviewer when consensus cannot be reached.
- When feasible, data were statistically pooled in a meta-analysis. Otherwise, narrative summaries were utilized.

Results

- ❖ Twelve studies (1,019 participants) were included in this systematic review.
- ❖ In general, the included studies were subject to substantial risk of bias. All studies compared the effectiveness of Ba-Duan-Jin with the usual care.

- ❖ The pooled analysis of the 10 studies measured HbA1c demonstrated that Ba-Duan-Jin was effective in lowering HbA1c level among T2DM patients, with a pooled effect size of -0.77% ($p < 0.05$; Figure 1). The effects size estimation was free from publication bias as indicated by the funnel plot (symmetry) and the Egger's test ($\alpha=0.27$, 90% CI: -0.03 to 0.57, $p>0.1$).

Figure 1 Forest plot of studies on Ba-Duan-Jin reporting HbA1c

- ❖ FBG was measured in 9 studies, the pooled analysis showed a statistically significant beneficial effect of Ba-Duan-Jin on reducing FBG (MD: -0.82 mmol/L, 95% CI: -1.05 to -0.59, $p < 0.01$; Figure 2).

Figure 2 Forest plot of studies on Ba-Duan-Jin reporting FBG

- ❖ Ba-Duan-Jin did not result in significant improvements in participants' QOL (2 studies) and depression (2 studies).
- ❖ None of the included studies measured blood pressure.

Conclusions

- This systematic review showed that Ba-Duan-Jin is effective in reducing HbA1c and FBG.
- Due to the limited number of studies that evaluated the effects of Ba-Duan-Jin on QOL, depression and blood pressure, further studies are necessary before conclusions could be drawn.
- The findings of this systematic review should be interpreted with the consideration of the risks of bias in the included studies and the susceptibility of publication bias (for other outcomes except HbA1c) of the review itself.

References

1. International Diabetes Federation. IDF Diabetes Atlas, 7th edn. Brussels, Belgium: International Diabetes Federation; 2015. <http://www.diabetesatlas.org>
2. American Diabetes Association. Standards of Medical Care in Diabetes—2015. Diabetes care. 2015;38(Supplement 1):S1-S93.
3. World Health Organization. Global report on diabetes. Geneva: 2016.
4. Powers MA, Bardsley J, Cypress M, Duker P, Funnell MM, Fischl AH, et al. Diabetes self-management education and support in type 2 diabetes: a joint position statement of the American Diabetes Association, the American Association of Diabetes Educators, and the Academy of Nutrition and Dietetics. Diabetes Educ. 2017;43(1):40-53.
5. Xin L, Miller YD, Brown WJ. A qualitative review of the role of qigong in the management of diabetes. The Journal of Alternative and Complementary Medicine. 2007;13(4):427-34.
6. Moher D, Liberati A, Tetzlaff J, Altman DG, Prisma Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. PLoS med. 2009;6(7):e1000097.