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• Research Article

Effects of wet-cupping on blood pressure in hypertensive patients: a randomized controlled trial

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ABSTRACT

BACKGROUND: Although cupping remains a popular treatment modality worldwide, its efficacy for most diseases, including hypertension, has not been scientifically evaluated.

OBJECTIVE: We aimed to determine the efficacy of wet-cupping for high blood pressure, and the incidence of the procedure's side effects in the intervention group.

DESIGN, SETTING, PARTICIPANTS AND INTERVENTIONS: This is a randomized controlled trial conducted in the General Practice Department at King Abdulaziz University Hospital, Jeddah, Saudi Arabia, between May 2013 and February 2014. There were two groups (40 participants each): intervention group undergoing wet-cupping (hijama) in addition to conventional hypertension treatment, and a control group undergoing only conventional hypertension treatment. Three wet-cupping sessions were performed every other day.

MAIN OUTCOME MEASURE: The mean systolic and diastolic blood pressures were measured using a validated automatic sphygmomanometer. The follow-up period was 8 weeks.

RESULTS: Wet-cupping provided an immediate reduction of systolic blood pressure. After 4 weeks of follow-up, the mean systolic blood pressure in the intervention group was 8.4 mmHg less than in the control group (P = 0.046). After 8 weeks, there were no significant differences in blood pressures between the intervention and control groups. In this study, wet-cupping did not result in any serious side effects.

CONCLUSION: Wet-cupping therapy is effective for reducing systolic blood pressure in hypertensive patients for up to 4 weeks, without serious side effects. Wet-cupping should be considered as a complementary hypertension treatment, and further studies are needed.

TRIAL REGISTRATION: *ClinicalTrials.gov* Identifier NCT01987583.

Keywords: blood pressure; hypertension; cupping therapy; randomized controlled trials

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1 Introduction

Hypertension is an important health problem, rated globally as the number one mortality risk factor in 2004[1]. Worldwide, approximately 40% of adults over age 25 are reported to be hypertensive[2]. In Saudi Arabia, the overall prevalence is 25.5% among 15–64 year olds[3]. Despite its prevalence, a real cure for the disease has yet to be discovered. All currently available anti-hypertension medications control blood pressure (BP) for a very limited time, never exceeding a single day, rather than actually being curative. Additionally, these medications are also associated with side effects and increased costs for the patients. As a result, the World Health Organization (WHO) stated that, currently, a more suitable long-acting, single dose/day anti-hypertension medication without side effects, that can also reverse the complications of hypertension, is still needed[4]. Thus, the search continues for a new anti-hypertension remedy.

Cupping is an ancient healing method that has been practiced for centuries in many parts of the world. Cupping therapy can be divided into two broad categories, dry- and wet-cupping. Dry-cupping is the process of using a vacuum on different areas of the body in order to collect blood in that area without any incisions[5]. Wet-cupping (or hijama in Arabic) is the process of using a vacuum at different points on the body, along with the use of incisions (small, light scratches made using a razor), to remove what was previously termed as 'harmful blood' (this represents accumulated blood that is located just beneath the skin surface)[5].

Although cupping remains a popular treatment modality in many parts of the world, its efficacy for most diseases, including hypertension, has not been scientifically studied. A recent systematic review involved searching 15 databases, without language restrictions, and included all relevant trials through June 2009[6]. Only 2 studies met the inclusion criteria, and only one assessed the effects of wet-cupping. In that study, 35 patients with acute hypertension were included, and all patients underwent three wet-cupping sessions every other day on the GV14 (Dazhui) acupuncture point; there was no control group. After a single wet-cupping session, acute hypertension improved in 71% of the patients[7]. The authors of the systematic review concluded that there was no strong evidence suggesting that cupping is an effective treatment for hypertension, and that further research is required[6]. A recent randomized controlled trial (RCT) assessed the efficacy of wet-cupping for the treatment of hypertension. The protocol randomly divided 42 participants into intervention and control groups. After 6 weeks of follow-up, a comparison of the mean BP differences between the intervention and control groups showed a significant difference in systolic BP (SBP), but not in diastolic BP (DBP)[8].

Thus, further evidence is needed to establish the efficacy of wet-cupping for lowering high BP. The present study investigated the efficacy of wet-cupping in lowering BP in hypertensive patients, and assessed the incidence of side effects among the treated participants.

2 Materials and methods

The present RCT was conducted in the General Practice Department at King Abdulaziz University Hospital, Jeddah, Saudi Arabia, between May 2013 and February 2014. *The Declaration of Helsinki* was followed and ethical approval was given by the Unit of Biomedical Ethics at King Abdulaziz University before data collection.

This two-armed study involved an intervention group, undergoing wet-cupping (hijama) in addition to conventional hypertension treatment, and a control group undergoing only conventional hypertension treatment. The study could not be blinded because blinding was impossible for this procedure, unlike that for dry-cupping[9].

2.1 Participants

The participants were included in the study if they had high (grade I or II)[4] BP at the time of the study (SBP ≥ 140 mmHg and/or DBP ≥ 90 mmHg). For patients with diabetes mellitus, high BP was defined as SBP ≥ 130 mmHg and/or DBP ≥85 mmHg[10]. Patients were required to be 19–65 years old, and both men and women were included. Patients were excluded if they had grade III hypertension (SBP ≥ 180 mmHg and/or DBP ≥ 110 mmHg), very high added risk according to the WHO hypertension management guidelines[4], or secondary hypertension, or were pregnant. Patients who had undergone dry-cupping, wet-cupping, or acupuncture within the previous six months were also excluded, as were those who required anti-hypertension medication dose or type changes within the follow-up period.

2.2 Randomization and ethical considerations

After checking for eligibility, written informed consent was obtained, and the participants were randomized into the treatment or control group using block randomization method. To preserve concealment, the randomization was performed using sealed opaque envelopes, such that neither the patient nor the observer could predict the group to which a participant was assigned. The randomization process and patient enrolment into their groups were done by the prime investigator. Patient confidentiality was ensured throughout the study, and participants were free to exit the study whenever they desired.

2.3 Intervention

The hijama procedure, performed on intervention group patients, involved cleaning the target area with an alcohol swab, placing the cup over the area, and starting suction. The cup was then gently removed, and five very superficial incisions were made parallel to each other. After creating