EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 6
Issue: 4
492-495
Year: 2019

EFFECT OF WET CUPPING (AL-HIJAMAH) ON COAGULATION PROFILE AMONG DIABETIC MELLITUS AND HYPERTENSIVE PATIENTS IN KHARTOUM STATE

Mujtaba Khalid Musa[1], Nibras Altayeb Abd Alslam[1], Salma Adel Yousif[1], Sanaa Hashim Suleiman[1], Abuzar Elnager*[1]

Department of Haematology, Alzaiem Alazhari University, Khartoum, Sudan.

***Corresponding Author: Abuzar Elnager**
Department of Haematology, Alzaiem Alazhari University, Khartoum, Sudan.

Article Received on 19/02/2019 **Article Revised on 12/03/2019** **Article Accepted on 02/04/2019**

ABSTRACT

Background: Al-Hijamah therapy is the prophetic medicines in which the cups were to withdraw the blood from the body for therapeutic purposes. **Objective**: This study aimed to determine the effect of Al-Hijamah on coagulation profile among diabetes mellitus (DM) and hypertensive patients in Khartoum state. **Methodology**: A total of (66) DM and hypertensive patients were participated in this study. Three (3) ml venous blood was collected into tri sodium citrate from each subject at four period of times (before, immediate after cupping, after one week and after two weeks of wet cupping), then was centrifuged for 15 min to obtain platelet poor plasma (PPP). The APTT, PT and fibrinogen were measured using Coagulometer (biobase–Spain). The data was analyzed using RM ANOVA and paired t test. **Results**: The results for DM patients showed there were slight increased of PT and APTT within different period of time after blood collection and statistically insignificant ($p > 0.05$). The fibrinogen level showed increasing among DM and statistically insignificant ($p>0.166$). The results for hypertensive patients showed there were insignificant reduction of APTT and insignificant increasing of PT according to time of blood collection ($p>0.05$). The fibrinogen result showed significant decreasing according to time of blood collection ($p<0.001$) which indicated the positive effect of Al-Hijamah. **Conclusion**: This is study concluded that the APTT, PT and fibrinogen level were within the normal range of normal subjects which might indicated that the Al-Hijamah has positive effect among DM and hypertensive patients and there is no side effect on patients.

KEYWORDS: Cupping, DM, Hypertensive PT and APTT.

INTRODUCTION

The blood cupping history refers to the ancient time before Islam to 3300 BC in Macedonia. It is considered as one of oldest medical practice, which has been practiced among different ancient people.[1] Blood cupping was discovered by philosophies around the time of Hippocrates, who mentioned blood cupping, relied on dietary techniques, the rules of cupping and it is suitable time. According to an anecdotes of Islam blood cupping is Prophet tradition[2], Ibn Abbas (R.A) reported God's messenger (peace be upon him) as saying "There is a remedy in three thing: The incision of a blood cupping, a drink of honey, or cauterization by fire, but I forbid my people to cauterize", and Hadrat Anas (RA) reports that God's messenger (BMPH) said "The best medicine is blood cupping" and he underwent cupping his leg.[1] The blood cupping it is the most beneficial in the absence of others remedy especially in second half of the 1800s for instance to clear out the infected or weakened blood or its ability to cause hemorrhages to cease blood cupping persisted into the 20 th century and it is recommended today in the treatment of many diseases.[1]

The technique of blood cupping is a procedure of drawing some blood by applying a cup to scarified skin, where a cup is attached to the specific area of skin surface along the back to cause local congestion through the negative pressure created.[3] In that practice, the skin is pinched, sometimes at specific point of the body, in general the preferred sites for cupping the areas of the body that are fleshy, usually the cup is left for about five minutes until a redness is generated.[4] The function of blood cupping used for warming and promoting the flow of energy in the blood thus dispelling cold, dampness, toxins, and winds and as well as diminish pain.[5] In Arabic and Islamic world believes in the wet cupping is good for body health, increasing the memory and vision power. Nowadays wet cupping commonly used in for treatment of few diseases such as hemochromatosis and polycythemia.[6]

Al-Hijama is an Arabic word means "sucking" the method by which the harmful blood is drawn by vacuum from a small skin incision for therapeutic purposes. Al-Hijama or wet cupping therapy also defined as an

Islamic, natural, holistic, healing therapy.[7] Nowadays Al-Hijama used as complementary or alternative therapy and prophylaxis against different diseases. The DM and hypertension were considered as risk factors for atherosclerosis and thrombosis which is leading cause of death worldwide.[8]

Subject and method

This is an interventional experimental study was conducted from March to September 2017 among (66) patients with DM and hypertension with age ranged from (18-70) years old. These subjects were participated in this study with their agreements according to inclusion criteria and informed consent was obtained from the participants. Three (3) ml of venous blood were collected into tri-sodium citrate from each subject four times: before cupping at base line, after one week of cupping, and two week after wet cupping.

Ethical considerations

This study approved by ethical committee of Alzaeim Al Azhari University. Each participant in this study was signed written consent form before undertaking any study-related activities.

Procedure of patient preparation

Using a sterile disposable syringe (3) ml of blood was collected from veins from each subject at four intervals of times (before wet cupping, immediate after wet cupping, after one week and after two weeks after wet cupping, into tri-sodium citrate container. Then, the container was labeled clearly with the participant's number, after that the was centrifuged at 3000 rpm for 15min to obtain platelet poor plasma.

Procedure for wet cupping

The surface of skin was cleaned first then the cup was placed on the surface of the skin and vacuum was created by suction pump, which was maintained for 3-5 minutes. After that, the cup was removed and minor incisions were made using a cupping lancet with some distance was left between incisions, the cuts were made in line with skin contours, the incisions made were superficial and not deep.

Procedure for APTT

The PPP (0.1) ml was added to (0.1) ml of thromboplastin into a cuvette contained steal ball located in the coagulometer, then wait for 1–3 min to allow the mixture warm. Then, (0.1) ml of warmed CaCl2 was added and the results were recorded from instrument.

Test procedure for PT

The PPP (0.1) ml was placed into the cuvette contained steal ball located in the coagulometer, then (0.2) ml of the kaolin–phospholipid solution was added, then the result from instrument was recorded.

Fibrinogen Assay (Clauss Technique)

Principle

Diluted plasma is clotted with a strong thrombin solution; the plasma must be diluted to give a low level of any inhibitors. A strong thrombin solution must be used so that the clotting time over a wide range is independent of the thrombin concentration.

Procedure

The dilutions of the calibration plasma in veronal buffer was made to give a range of fibrinogen concentrations (1 in 5; 1 in 10; 1 in 20 and 1 in 40). About (0.2) ml of each dilution was warmed at 37°C, then, (0.1) ml of thrombin solution was added and the clotting time was measured. The clotting time was plotted in seconds against the fibrinogen concentration in g/l on log-log graph paper.

The dilution of 1 in 10 for each patient's sample was made and (0.2) ml of the dilution mixed with 0.1 ml of thrombin. The fibrinogen level was read directly off the graph.

Statistical analysis

Statistical analysis was done using PASW® Statistics 22 (SPSS, Chicago IL). The data was expressed as mean (SD). The comparison between different periods of time of PT and APTT before and after wet cupping was analyzed by repeated measures ANOVA. The comparison between fibrinogen level before and after wet cupping was analysed by paired t test. The p value ≤ 0.05 was considered to be statistically significant.

RESULTS

The results were divided into two groups' diabetic mellitus and hypertension.

1- Diabetic mellitus

Total of (30) patients with DM attending Hijama center in Omdurman locality were enrolled in this study, the participants were selected according to inclusion criteria.

Table (1) showed there was minor increased of PT and APTT within the normal range or non among DM patients according to the time of blood sample collection and statistically insignificant ($p>0.05$). However, there was an overall significant of PT and APTT levels mean differences between different periods of times of this study (<0.001) (table not shown). The results of PT and APTT were located within the normal range which indicated that the positive effect of wet cupping among DM patients.

Table (1) descriptive statistics results of PTT and PT for patients with DM attending Al-Hijama center (n =30).

Group	APTT Mean (SD)	PT Mean (SD)
pre cupping	28.23 (0.85)	12.43 (0.44)
Immediate after cupping	28.42(0.84)	12.93 (0.29)
One week after cupping	27.76 (0.83)	12.59 (0.26)
Two week after cupping	28.42 (0.88)	12.93 (0.25)

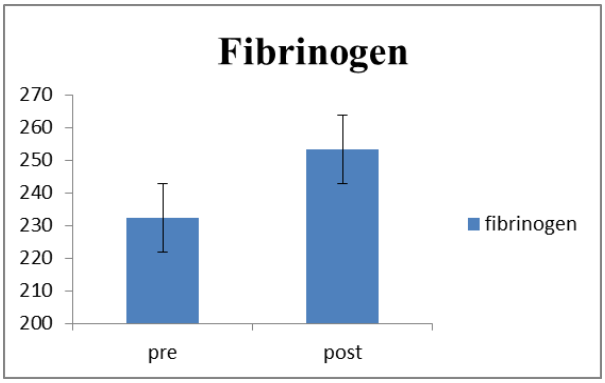

Figure (1): Comparison of fibrinogen level pre and post wet cupping among DM patients (n =27).

Figure (1) showed the comparison of fibrinogen level before and after two weeks after wet cupping among DM patients. There was slightly increased of fibrinogen level and statistically insignificant (p>0.166).

2- Hypertension

Total of (41) patients with hypertension attending for Al-Hijamah center in Omdurman locality were enrolled in this study, the participant were selected according to inclusion criteria. The results of APTT and PT for patients with hypertension after performing Al-Hijamah (wet cupping) showed slight reduction of APTT among hypertensive patients and slight increased in PT level among hypertensive patients according to the time of blood sample collection table (2). There was an overall significant PT and APTT levels of mean differences between different periods of times (<0.001). However, there were insignificant mean differences of PT and APTT within different period of time of blood collection for hypertensive patients, the p > 0.05 (table not shown). The results located within the normal range which indicated that the positive effect of wet cupping on PT and APTT among hypertensive patients.

Table (2) descriptive statistics results of APTT and PT for patients with hypertension after Al-Hijamah (n =41).

Group	**APTT Mean (SD)**	**PT Mean (SD)**
pre cupping	29.41 (0.63)	12.84 (0.40)
Immediate after cupping	29.94(0.79)	13.41 (0.21)
One week after cupping	28.43 (0.70)	13.44 (0.24)
Two week after cupping	28.17 (0.55)	13.30 (0.23)

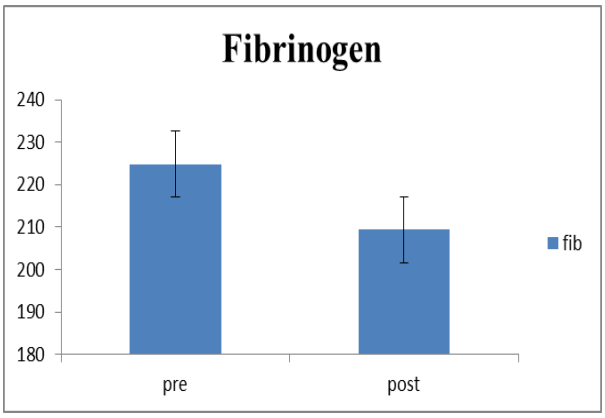

Figure (2): Comparison of pre and post cupping fibrinogen level among hypertensive patients (n = 25).

Figure (2) showed a total of (25) hypertensive patients were enrolled in this study, The fibrinogen level was lower among hypertensive patients in post cupping (after one week) compared with pre cupping and statistically significant (p <0.001). The results were proved the positive effect of wet cupping on fibrinogen level among hypertensive patients.

DISCUSSION

In this study the discussion part was divided into two main groups as mention earlier in the results section. The first group was DM patients and the second was hypertensive patients group. In the present study the PT, APTT and fibrinogen levels were used to assess the effect of wet cupping among both groups.

This study conducted among DM patients group and demonstrated that before and after wet cupping at different periods of time there was statistically insignificant differences between PT and APTT levels within different periods of times of blood collection (P>0.05). However, there was an overall significant mean differences between different periods of times of blood collection before and after wet cupping (P<0.05). The fibrinogen level showed statistically insignificant mean differences pre and post wet cupping among DM patients (P>0.05). These results may be attributed to the positive effect of wet cupping on these coagulation parameters and gave similar test result. Our study is the first study reported the effect of wet cupping on these coagulation parameters (PT, APTT and fibrinogen) levels.

The second part of this study was performed among hypertensive patients which revealed that before and after wet cupping at different periods of times there was statistically insignificant mean differences of PT and PTT levels within different period of times of blood collection (P>0.05). However, there was an overall significant mean differences between different periods of times of blood collection (P<0.05) which is similar to the results of DM patients. In addition, the mean level of fibrinogen was decreased in after cupping compared to before cupping and statistically significant (P<0.05), which means that Al-hijama (wet cupping) decreased the risk of thrombosis, as fibrinogen level widely used as a marker for hyper-coagulable state.[9,10]

The reason for the significant difference between fibrinogen level pre Al-hijama and post Al-hijama is yet not known, we just can confess that these are the first steps to search about cupping mechanism and further investigations seems more crucial.

This study considered as a novel study due to the absence of similar study in litreture that focus on determining the effect of wet cupping on fibrinogen level; although there was a study done by Ahmad Akbari *etal*. 2013 which reported that there was an effect of wet cupping on various blood factors in patients suffering from diabetes type II.[11] Another interventional study was done in Egypt which reported that there was impact of Al-hijama on persistent non-specific lower back pain and client disability.[12] Other study was done about the effectiveness of wet cupping in treatment of Migraine and tension headaches.[13]

This is study concluded that the APTT, PT and fibrinogen levels were within the normal range which indicated that the wet cupping has positive effect among DM and hypertensive patients and there is no harm on such patients. This study recommended that the study should be done among patients with coagulation disorders and hyperfibrinogenemia to determine the real effect of wet cupping.

ACKNOWLEDGEMENT

The authors would like to thankful Mr. Badawi Mohammed Mahmoud, Seed Ahmed and Dr. Yasser Hamdna Allah for their support during this study.

REFERENCES

1. ALSHOWAFI, F.K., *Effect of blood cupping on some biochemical parameter.* The Medical Journal of Cairo University, 2010; 78(2).
2. Jorjani, S., *Zakhireh Kharazmshahi, corrected by Moharrari MR, vol. 1*. The Academy of Medical Sciences, 1997.
3. Ranaei-siadat, S., et al., *The effect of cupping (hejamat) on blood biochemical and immunological parameters.* Iranian Journal of Pharmaceutical Research, 2010; 31-32.
4. Huaiping, W., *Treatment of urticaria with cupping.* Journal of traditional chinese medicine, 1993; 13(2).
5. Huadong, J., *Cases of Frozen Shoulder treated by needling and Cupping.* Int. J. Clin. Acupunc, 9(3): 327-328.
6. Olynyk, J.K., *Hereditary haemochromatosis: diagnosis and management in the gene era.* Liver, 1999; 19(2): 73-80.
7. Qureshi, N.A., et al., *History of cupping (Hijama): a narrative review of literature.* Journal of integrative medicine, 2017; 15(3): 172-181.
8. El Sayed, S., H. Mahmoud, and M. Nabo, *Methods of wet cupping therapy (Al-Hijamah): in light of modern medicine and prophetic medicine.* Alternative & Integrative Medicine, 2013; 1-16.
9. Kannel, W.B., et al., *Fibrinogen and risk of cardiovascular disease.* Jama, 1987; 258(9): 1183-6.
10. Danesh, J., et al., *Plasma fibrinogen level and the risk of major cardiovascular diseases and nonvascular mortality: an individual participant meta-analysis*, 2005.
11. Akbari, A., et al., *The effect of hijama (cupping) on oxidative stress indexes & various blood factors in patients suffering from diabetes type II.* NATIONALPARK-FORSCHUNG IN DER SCHWEIZ (Switzerland Research Park Journal), 2013; 102(9).
12. Hanan, S. and S. Eman, *Cupping therapy (al-hijama): It's impact on persistent non-specific lower back pain and client disability.* Life Sci J, 2013. 10(4): 631-642.
13. Griggs, C. and J. Jensen, *Effectiveness of acupuncture for migraine: critical literature review.* Journal of advanced nursing, 2006; 54(4): 491-501.