Effect of Cupping (Al-Hijima) on Hematological and Biochemical Parameters for some Volunteers in Missan Province

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Abstract

Objective: The aim of Cupping is to extract the blood which is believed to be harmful for the body which in turn rids the body of potential harm from symptoms leading to a reduction in stressful condition. The study was performed to evaluate the effects of cupping (Hijama) on the hematological and the biochemical parameters in the patients before and after making the cupping.

Subjects and Method: The study was performed in period between (first November -2018 to May- 2019) and conducted on (30) volunteers coming to Hijama centers in different parts of Missan province in ages between (30-50) years with . Five (5ml) of venous blood samples were collected the first sample was taken before and after one week of cupping and two weeks later after cupping . Each sample of blood was separated into two tubes for hematological assessment and the serum was stored in -20°C freezer till handled for biochemical analysis ,determined lipid profile and serum electrolytes level. These parameters were performed in laboratories of Al- Sadder Teaching Hospital – Amarha City according to the standard methods that described in the Analysis Kits that used in this study was products of Spinach Company Spin react.

Results: The obtained results for hematological analysis observed significant increase in (RBCs) after one and two week of making Hijima in ($p< 0.05$).as compared results before making hijjama ,significant decrease in haematocrit(HCT) ,hemoglobin (Hb) ,Platelets (Plt) , neutrophiles and lymphocytes percentages after one and two week of making Hijama as compared results before making hijama . Total cholesterol were observed significant decrease in ($P>0.05$) after one and two weeks of hijima in compared with the total cholesterol before making the hijima ,decrease in (LDL), (vLDL) and Triglyceride after one week and two week of hijima as compared before making the hijima .High density lipoprotein (HDL-ch) observed significant increase in ($P>0.05$) after one week and two weeks of making hijima as compared with (HDL-ch) before making the hijima. The biochemical analysis observed significant decrease in levels of ALP enzyme,creatinine ,blood urea nitrogen and blood glucose in($P>0.05$) after one and two weeks of Hijima, significant increase in levels of total proteins , AST and ALT in($P>0.05$) after one and two weeks of making Al-hijima as compared with levels before making the hijima. Serum electrolytes level showed an significant decline in serum Calcium ions (Ca+2) in ($P>0.05$) after one and two weeks of making Al-hijima as compared to the serum calcium level before making of Al- hijama. Also observed insignificant decline in serum sodium(Na+2), chloride ions (Cl-) and potassium ions(K+) as compared to level of sodium ,chloride and potassium ions before making of Al- hijama.

Key Words: *Cupping, volunteers, hematological, biochemical parameters, Hijama centers.*

Introduction

In the Arab and Muslim world, Al-Hijamah is a deeply rooted religious technique supported by many authenticated sayings (hadiths) of Prophet Mohammad (PBUH) who recommended its use in human ailments more than 1400 years ago [14] . There are three types of cupping include dry, wet, and massage cupping. In dry cupping stationary cups are placed on the skin and left for a period of five to 15 minutes in one location without incisions, while in wet cupping (hijama) the process of using a vacuum at different points on the body but with incisions in order to remove 'harmful' blood which lies just beneath the surface of the skin. In massage cupping, oil is applied on the skin to facilitate smooth movement and discover the areas of tension and congestion prior to applying the cup [13]. Cupping therapy can be divided into two broad categories; dry cupping and wet cupping. Dry cupping simply pulls the local underlying tissue up into the suctioning cup, whereas wet cupping uses the same technique, but adds scarification and bloodletting [2]. Many theories explain the mechanism of action of cupping, suggested the immunemodulation theory, cupping and acupuncture had the same mechanisms of action. Immunemodulation theory suggests that changing the microenvironment by skin stimulation could transform into biological signals and activate the neuroendocrine immune system [7] .

[5] suggested that skin's mechanical stress (due to subatmospheric pressure) and local anaerobic metabolism (partial deprivation of O2), during cupping suction could produce physiological and mechanical signals which could activate or inhibit gene expression. In wet cupping therapy, superficial scarifications could activate the wound-healing mechanism and gene expression program.

Cupping therapy has reported benefits in the treatment of lower back pain, neck and shoulder pain, headache and migraine, knee pain , facial paralysis , brachialgia , carpal tunnel syndrome , hypertension , diabetes mellitus , rheumatoid arthritis , and asthma. These diseases can be categorized into localized diseases (neck pain, lower back pain, and knee pain) and systematic diseases such as diabetes mellitus, hypertension, and rheumatoid arthritis [3, 15].

Material and Method

The study was performed in period between (first November -2018 to May- 2019) and conducted on (30) volunteers in ages between (30-50) years with average age (40)years contact with Hijjama centers in different parts of Missan province. Five (5ml) of venous blood samples were collected from each volunteer, the first sample was taken before cupping and second sample was taken after one week of cupping ,while the third sample was taken in two weeks later after cupping . Each sample of blood was separated into two tubes. The first tube with EDTA for hematological assessment and second blood tube was centrifugation for 10 minutes at 3000rpm, the serum was stored in -20°C freezer till handled for biochemical analysis for determined lipid profile and serum electrolytes level.

Complete blood picture were shown from the collected blood samples by automatic methods (System X kx-21n automated hematology analyzer; JAPAN CARE CO., LTD) including hemoglobine (Hb), white blood cells (WBCs), red blood cells (RBCs), Platelets and Haematocrit or packed cell volume (PCV).

Statistical Analysis

The results were expressed as mean ± standard error (SE). Statistical analyses were made with one-way analysis of variance (ANOVA) using SPSS 17. The criterion for statistical significance was (P<0.05).

Results

The obtained results for hematological analysis the blood samples collected form (30) volunteers in Hijima centers before and after one and two week of hijama,observed significant which increased (RBCs) after one and two week of making Hijima as compared results before making hijjama ($p<0.05$),also observed significant decrease in haematocrit(HCT) ,hemoglobin (Hb) ,Platelets (Plt) , neutrophiles and lymphocytes percentages after one and two week of making Hijima as compared with the results before making hijjama ($p< 0.05$), Tab(1).

Lipid profile values were detected in blood samples that obtained from volunteers before and after one week and two weeks of hijima which include total cholesterol ,LDL-ch,HDL-ch ,Triglyceride and VLDL-ch where

the total cholesterol levels were observed significant decrease in (P>0.05) after one and two weeks of hijima in compared with levels of the total cholesterol before making the hijima ,also the results observed significant decrease in Low-density lipoprotein (LDL),very Low density lipoprotein (vLDL) and Triglyceride in(P>0.05) after one week and two week of hijima as compared with the levels before making the hijima ,Tab(2).

While the high density lipoprotein (HDL-ch) observed significant increase in (P>0.05) after one week and two weeks of making hijima as compared with the levels of (HDL-ch) before making the hijima,Tab(2).

Table-2: Show lipid profile parameters for the patients before and after one and two weeks of Hijima. (N:30 volunteers).

Parameters	Groups		
	B.Hijima	**A. week of Hijima**	**A. two week of Hijima**
T.Cholestrol (mg/dl)	208.89±80.8	165.656±56.7	141.39±41.8
HDL-cholestrol(mg/dl)	33.98±80.8	41.59±11.23	53.85±14.54
LDL-cholestrol(mg/dl)	172.67±42.3	146.78±36.2	130.19±28.4
Triglycerides (mg/dl)	285±103.16	187.22±56.33	143.76±32.23
VLDL-cholestrol(mg/dl)	87.63±55.8	54.68±42.2	39.75±35.5

The biochemical analysis of the blood serum that obtained from volunteers before and after making Al-hijima observed significant decrease in levels of alkalinephosphatase enzyme, creatinine ,blood urea nitrogen and blood glucose in(P>0.05) after one and two weeks of making Al-hijima as compared with level of these biochemical parameters before making the hijima, Tab(3).On other hand there was significant increase in levels of total proteins , Aspartate aminotransferase and Alanin anino tranferase in(P>0.05) after one and two weeks of making Al-hijima as compared with levels of total proteins , Aspartate aminotransferase and Alanin anino tranferase before making the hijima, Tab(3).

Table-3: Show serum biochemical parameters for the patients before and after one and two weeks of Hijima.(N:30 volunteers).

Parameters	Groups		
	B.Hijima	**A. week of Hijima**	**A. two week of Hijima**
Alkaline phosphatase (IU/l)	134.8±3.98	122.3±8.1	18.7 ±7.51
T.protein (gm/dl)	6.37±0.35	6.90±0.75	7.87±1.15
Creatinine (mg/dl)	1.85±0.05	1.35±0.25	1.1±0.12
Aspartate aminotransferase AST (IU/l)	239±94	335.2±24.3	370.4±37.8

Cont... **Table-3: Show serum biochemical parameters for the patients before and after one and two weeks of Hijima.(N:30 volunteers).**

Alanin anino tranferase ALT (IU/l)	234 ± 45	289 ± 65	292 ± 54
Blood urea nitrogen (mg/dl)	14.1±3.55	14.4±2.29	13.9 ±1.85
B. Glucose (mg/dl)	135.3±8.2	110.5±8.2	95.8 ± 5.3

Table (4) and figure (1) shows the comparison of serum electrolytes level before and after one and two weeks of hijama. Blood samples obtained after hijama showed an significant decline in serum Calcium ions (Ca+2) in (P>0.05) after one and two weeks of making Al-hijima as compared to the serum calcium level before making of Al- hijama.

The results also observed insignificant decline in serum sodium(Na+2), chloride ions (Cl-) and potassium ions(K+) as compared to level of sodium ,chloride and potassium ions before making of Al- hijama.

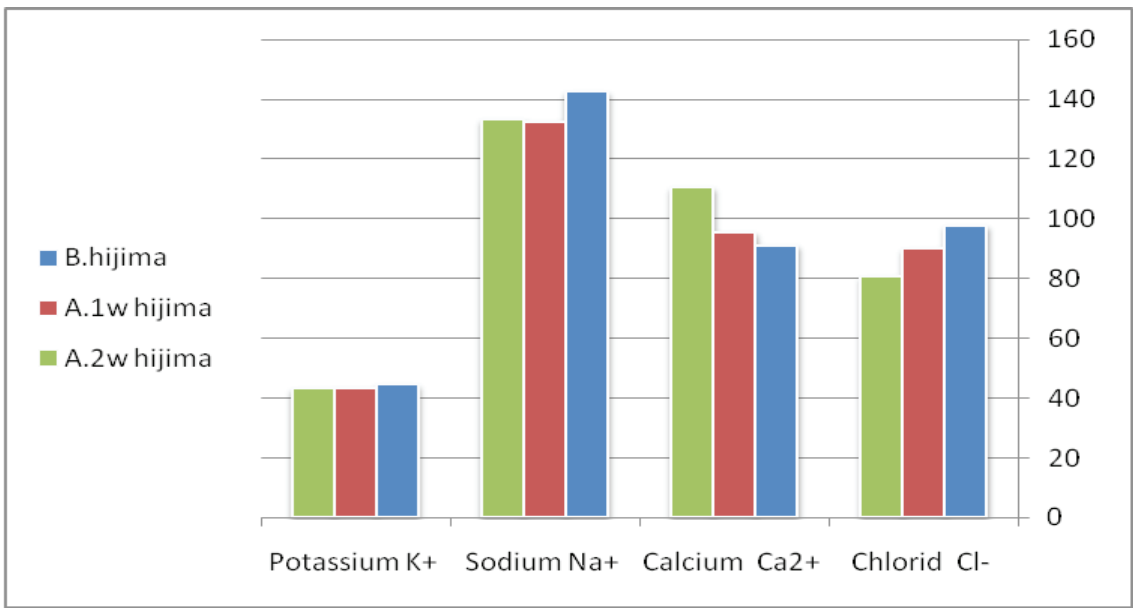

Figure (1) :Shows serum electrolytes changes for the patients before and after one and two weeks of Hijima.(N:30 volunteers).

Discussion

Hematological analysis of the blood samples that collected form (30) volunteers in different Hijima centers in Missan province before and after one and two week of Hijama, observed significant increase in (RBCs) and decrease in haematocrit(HCT) ,hemoglobin (Hb) ,Platelets (Plt) , neutrophiles and lymphocytes percentages after one and two week of making Hijima as compared with results of these parameters before making hijjama .

The results of this study were agreed with [6] who stated that RBCS will increase gradually after two weeks of cupping with significant decrease in the percentage of WBCs ,lymphocytes ,monocytes , HGB, and HCT and platelets in the human venous blood, while Abdullah *et al.* (2014) were found insignificantly changes in hematological levels after cupping.

[1] were found slight improvement in hemoglobin levels ,RBCs,while WBCs observed with normal values duet to improvement in erythropoietin production after cupping and produced in adequate which make

hemoglobin to return to the normal values and increase production of RBCs and suggested that renal function has improved which may be related to the improved metabolism, electrolytes and appetite.

[6] were reported that cupping play an important role in excretion of old RBCs and replaced by new red blood cells when red blood cells increases, also decrease in hematocrit and blood viscosity makes the blood less thicker, and increase flow of the blood. [16] showed WBCs count decline less than this decrease statistically highly significant. In addition, there was an increase in WBCs count after 2 weeks. Lipid profile values were detected in blood samples from volunteers before and after one week and two weeks of hijima which include total cholesterol ,LDL-ch,HDL-ch ,Triglyceride and VLDL-ch. [10] showed reduction of LDL and cholesterol beside increase HDL and no change of triglyceride in all of subjects were treated with cupping in one time. [12] were reported that the Patients with hyperlipidemic who subjected to cupping showed a significant decrease in total cholesterol, LDL cholesterol, triglyceride and LDL/ HDL ratio in weeks 1 and 2 respectively by comparison before cupping. While there were significant changes and increase in serum HDL cholesterol in weeks 1 and 2 after Cupping. These results agreed with [6] for the biochemical parameters, significantly lower ALP levels in the cupping blood when compared to the venous blood.,where ALP has an important role in the metabolism by permitting the cells to uptake the inorganic form of phosphate . [20] were reported that serum ALP levels significantly decreased after the cupping therapy in humans. AST and ALT levels were observed to be non- significantly increased after 3 days after cupping, this increase was followed by decrease in its levels after 2, 4, and 8 weeks of cupping. However, AST can normally be detected in many different tissues such as the muscles, liver, kidney, brain, and heart, and its levels are increased if any damage occurs to one of these tissues; therefore, it is not considered as a specific indicator for mammalian liver profiles . [18] found a significant decrease in serum creatinine and potassium level after hijama and significant improvement in chloride concentration towards normal, hence all these changes indicates that there have been improvement in renal function in patients after making Al-hijama. Random blood glucose was decreased significantly, which might be one of the reasons for decrease in fatigue and increase metabolism and improvement in appetite [17]. The cupping therapy can increase the sensitivity of insulin which decreases its levels in the blood of diabetic patients; however, the adverse effects can be attributed to the health status of the animals and some species variations [17,19]. Blood samples that obtained after hijama showed significant rise in serum Calcium ions (Ca+2) after one and two weeks of making Al-hijima as compared to the serum calcium level before making of Al- hijama.

Conclusion

Repeated cupping (hijima) therapy was useful in improve complete blood picture (CBC), improved serum lipid such as the total cholesterol, LDL and Triglyceride levels,also improve HDL-ch which observed significant increase after two weeks of hijima. Al-hijima observed significant effect on some biochemical parameters, improvement in levels of total proteins and increase activity of liver function enzymes (AST and ALT) and significant rise in serum Ca+2 with decline in Na+2 , Cl- and K+ after one and two weeks of Al-hijima, for this results that observed in this study the cupping may be consider safe technique, might be associated with decreased risk of cardiovascular disease, obesity and enhanced and improved kidney function test . So we recommend to ministry of health to encourage the practice of prophetic medicine including (Alhijama) in hospitals officially in a pure medical atmosphere to close the way in face of unqualified mal practitioners.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Nursing College, Iraq and all experiments were carried out in accordance with approved guideline

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