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PARTIAL EVALUATION OF TECHNIQUE USED IN CUPPING THERAPY

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Abstract

Cupping is an ancient mode of therapy for various ailments, practiced and recommended by ancient healers. Current study was aimed to scientifically evaluate the efficacy of the technique used in cupping, i.e. suction and removal of blood after giving superficial incisions on skin at various specific points on the body. Since the treatment lies simply in removal of blood from specific areas, and no medication is involved, hence the study was designed to evaluate the significance of alone removal of blood by comparing and analyzing the difference between the compositions of blood samples, obtained through cupping technique versus blood drawn intravenously. 25 healthy male individuals were selected randomly between ages 21-30. Blood samples were collected from vein and cupping site of each individual for the analysis of hematological and biochemical parameters.

There was a significant change in almost all parameters tested as compared to the venous blood samples; the quantity of blood drawn through both method was same i.e. 5 ml, yet significant difference in the composition of all cupping blood samples was observed. On the basis of result we can assume that there might be some unknown substance present in the blood which is drawn and discarded through cupping and removal of which might be creating a favorable balance between various vital parameters.

Keywords: Cupping therapy, alternative mode of treatment, bloodletting, Al-Hajama.

INTRODUCTION

Cupping therapy is a widely employed mode of treatment; classified in alternative medicine and gaining popularity worldwide. (Eisenberg, *et al*., 1998)

Presently, cupping therapy has been claimed to treat various disorders successfully, such as carpel tunnel syndrome (Andreas, *et al*., 2009), non specific low back pain (Khosro, *et al*., 2009).

Although this mode of treatment is not common in Pakistan, but some physicians are practicing it and hundreds of patients of various diseases have claimed that they benefited from cupping therapy. It has some religious roots too, since cupping has been called as a better mode of treatment among others (Bukhari: 5683).

There is lack of scientific evidence of efficacy of cupping; hence this study was aimed to evaluate the significance of this unique technique, i.e. drawing and disposal of blood from specific sites. (Chirali, *et al*., 1999)

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Materials and methods

At the beginning of each session of cupping; personal, social, medication and disease histories of the volunteers were documented. After that 5 ml of blood was drawn intravenously and transferred to gel tubes (3ml) and vacuum tubes (2ml) immediately.

After the collection of venous blood, the procedure of cupping was carried out as follows:

A point was selected at the back, just above the 7th cervical vertebral column at the level of shoulders. A cotton wick was adhered inside a glass and lit. Then the glass was placed at the selected point top down and pressed. The burning cotton consumed the air present inside the glass creating a vacuum strong enough to stick the glass to the skin firmly.

The glass was kept adhered for 5 to 10 minutes to maintain a force of suction at the site. Then the glass was removed, skin was washed with normal saline, cleaned with pyodine solution and then numerous superficial incisions were given with the help of a sterilized surgical blade.

After that 0.4 ml of EDTA solution was added to the glass, a cotton wick was adhered and lit to the inside of the glass and it was placed on the skin, which created a vacuum strong enough to suck the blood. Blood started trickling down of the incisions. Subject was allowed to

lean forward and place his head on a table so that the blood could mix with EDTA properly to prevent coagulation.

When sufficient amount of blood was collected, the glass was removed and blood was transferred quickly into the gel tube (3ml) and vacuum tube (2 ml) for testing. Incisions were cleaned; honey was applied on the cuts and then covered with sterilized cotton gauze.

Biochemical testing

Sera were immediately separated out by centrifuging the blood samples at 3000 rpm for 15 minutes and the parameters including lipid profile, hepatic enzymes, renal parameters and glucose were analyzed within 3 hours of sample collection on Humalyzer 3000, Semi-automatic chemistry analyzer (Human, Germany), using standard kits supplied by Merck.

Hematological testing

Hematological parameters were analyzed using automatic Humacount plus, Hematology analyzer. (Human, Germany).

Hematological parameters which were tested include RBC, WBC, hemoglobin, HCT, MCV, RDWc, MCH, MCHC, platelets, lymphocytes, monocytes and Granulocytes, in blood samples obtained from veins through standard procedure, and in blood samples obtained through the technique of cupping.

Statistical analysis

Statistical analysis was performed using Minitab. Values of all parameters in cupping and venous blood samples of each volunteer were compared to discover the difference in composition of both types of samples using paired student's test. Data were prepared as mean ± S.E.M and P value <0.05 was considered statistically significant and P value <0.005 was considered to be highly significant.

RESULTS

Hematological parameters

Table 1 reveals the comparison of concentration of hematological parameters in blood samples
Blood samples from cupping showed highly significant decline in WBC i.e. 4.93± 0.41 $x10^3/mm^3$ as compared to venous blood sample i.e. 7.03± 0.41 $x10^3/mm^3$.

Blood sample from cupping showed highly significant decline in RBC i.e. 4.01±0.28 $x10^6/mm^3$ as compared to venous blood sample i.e. 5.56± 0.14 $x10^6/mm^3$.

Blood samples from cupping showed highly significant decline in hemoglobin i.e. 11.25± 0.90 g/dl as compared to venous blood sample i.e. 14.29± 0.39 g/dl.

Blood sample from cupping showed highly significant decline in hematocrit i.e. 34.3± 2.4 % as compared to venous blood sample i.e. 47.44±5.45%.

Blood sample from cupping showed highly significant decline in Mean cell hemoglobin concentration i.e. 28.73± 0.26 g/dl as compared to venous blood sample i.e. 29.88± 0.26 g/dl.

Blood sample from cupping showed highly significant decline in Platelet count i.e. 149.6± 15 $x10^3/mm^3$ as compared to venous blood sample i.e. 283± 23 $x10^3/mm^{3.}$
Blood sample from cupping showed highly significant decline in monocytes i.e. 7.5 ± 0.44 % as compared to venous blood sample i.e. 5.55± 0.52 %.

Blood sample from cupping showed significant decline in Granulocytes i.e. 55.24± 1.9 % as compared to venous blood sample i.e. 60.91± 1.9 %.

Blood sample from cupping showed insignificant decline in RDWc i.e. 14.184± 0.16 % as compared to venous blood sample i.e. 14.252± 0.16%.

Blood sample from cupping showed insignificant decline in MCH i.e. 24.82 ± 0.66 pg/cell as compared to venous blood sample i.e. 25.55 ± 0.68 pg/cell.

Blood sample from cupping showed insignificant decline in lymphocytes i.e. 36.96 ± 2.0 % as compared to venous blood sample i.e. 34.28 ± 1.9%.

Biochemical parameters

Lipid profile

Table 2 reveals the comparison of HDL, LDL, cholesterol and triglycerides levels between blood samples obtained intravenously through standard procedure, with blood samples obtained through the technique of cupping.

Blood sample from cupping showed highly significant decrease in cholesterol i.e. 111 ± 9.1 mg/dl as compared to venous blood sample i.e.199.8±12 mg/dl.

Blood sample from cupping showed highly significant decrease in HDL level i.e. 4.18± 0.98 as compared to venous blood sample i.e. 16.5 ± 3.4 mg/dl.

Blood sample from cupping showed highly significant decrease in low density lipoproteins level i.e. 88.4± 8.5 mg/dl as compared to venous blood sample i.e. 145.8± 10 mg/dl.

Blood sample from cupping showed significant decrease in Triglyceride level i.e.107.2± 11 mg/dl as compared to venous blood sample i.e. 167 ± 22 mg/dl.

Renal parameters

Table 2 reveals the comparison of urea and creatinine levels between blood samples obtained from veins through standard procedure, with blood samples obtained through the technique of cupping.

Blood sample from cupping showed highly significant decrease in serum creatinine level i.e. 1.08 ± 0.32 mg/dl as compared to venous blood sample i.e. 3.5± 0.74 mg/dl. Blood sample from cupping showed highly significant decrease in serum urea level i.e. 27.3± 2.4 mg/dl as compared to venous blood sample i.e. 40.5± 3.2 mg/dl.

Liver enzymes

Table 2 reveals the comparison of SGPT and SGOT levels between blood samples obtained from veins through standard procedure, with blood samples obtained through the technique of cupping.

Blood sample from cupping showed insignificant decrease in serum SGPT level i.e. 13.2 ± 2.3 U/L in comparison to venous blood sample i.e. 20.2 ± 2.9 U/L (venous).

Blood sample from cupping showed insignificant decrease in serum SGOT level i.e. 14.4 ± 2.5 U/L in comparison to venous blood sample i.e. 19.3± 2.2 U/L.

Glucose

Table 2 reveals the comparison of glucose levels between blood samples obtained from veins through standard procedure, with blood samples obtained through the technique of cupping.

Blood sample from cupping showed highly significant decrease in serum glucose level i.e. 64.1 ± 3.9 mg/dl in comparison to venous blood sample i.e. 85.9 ± 4.1 mg/dl.

DISCUSSION

Although cupping therapy has proven efficacy in treating several disorders including some mentioned earlier and some others like migraine headache (Ahmadi, *et al*., 2008), generalized pain (Jong, *et al*., 2009). Cupping has oriental roots but now it is spreading in western world at a rapid rate. (Yoo, *et al*., 2004) A highly significant decrease was observed in WBC, RBC, Hemoglobin,

Table 1: Comparison of hematological parameters in cupping (hajama) and venous blood samples

	Parameters	Hajama Blood Value	Venous Blood Value
1	WBC	4.93 ± 0.41 x10^3/mm^3 **	7.03 ± 0.41 x10^3/mm^3
2	RBC	4.01 ± 0.28 x10^6/mm^3 **	5.560 ± 0.14 x10^6/mm^3
3	HGB	11.25 ± 0.90 g/dl **	14.29 ± 0.39 g/dl
4	HCT	34.3 ± 2.4 % **	47.44 ± 5.45%
5	RDWC	14.184± 0.16%	14.252± 0.16%
6	MCH	24.82 ± 0.66 pg/cell	25.55 ± 0.68 pg/cell
7	MCHC	28.73 ± 0.26 g/dl **	29.88 ± 0.26 g/dl
8	PLT	149.6 ± 15 x10^3/mm^3 **	283 ± 23 x10^3/mm^3
9	LY%	36.96 ± 2.0%	34.28 ± 1.9%
10	MO%	7.50 ± 0.44 % **	5.55 ± 0.52%
11	GR%	55.24 ± 1.9 % *	60.91 ± 1.9%

n =25; Average Values ± S.E.M.,*P< 0.05: Significant as compared to control,**P< 0.001:Highly significant as compared to control

Table 2: Comparison of biochemical parameters in cupping (hajama) and venous blood samples

	Lipids	Hajama Blood value	Venous Blood value
1	Cholesterol	111.0 ± 9.1 mg/dl **	199.8 ± 12 mg/dl
2	Triglyceride	107.2 ± 11 mg/dl *	167 ± 22 mg/dl
3	HDL	4.18 ± 0.98 mg/dl **	16.5 ± 3.4 mg/dl
4	LDL	88.4 ± 8.5 mg/dl **	145.8 ± 10 mg/dl
5	Creatinine	1.08 ± 0.32 mg/dl **	3.50 mg/dl ± 0.74
6	Urea	27.3 ± 2.4 mg/dl **	40.5 mg/dl ± 3.2
7	SGPT	13.2 ± 2.3 U/L	20.2 ± 2.9 U/L
8	SGOT	14.4 ± 2.5 U/L	19.3 ± 2.2 U/L
9	Glucose	64.1 ± 3.9 mg/dl **	85.9 ± 4.1 mg/dl

n = 25, Average Values ± S.E.M., *P< 0.05: Significant as compared to control. **P< 0.001: Highly significant as compared to control

Mean cell hemoglobin concentration, Platelet count and monocytes in cupping samples as compared to venous samples.
A significant reduction was observed in granulocytes in cupping samples as compared to venous samples.

In all the other parameters, a decline was observed also, although, not statistically significant.

Highly significant decrease in most of the parameters in lipid profile was observed in cupping samples as compared to venous samples including; cholesterol, HDL and LDL. A significant decline was observed in Triglyceride in cupping samples as compared to venous samples.

In renal parameters, a highly significant decline was observed in both creatinine and urea in cupping samples as compared to venous samples.

In biochemical parameters, glucose was tested and highly significant decline was observed in cupping samples as compared to venous samples.

Liver enzymes were also reduced in cupping samples as compared to venous samples, although not statistically significant.

This observation indicates towards numerous possibilities and there might be more than one explanation for this uniformity of data and persistent decline in all the values of tested parameters in cupping blood samples.

The above mentioned results become more thought provoking as the quantities of both the samples were same in all the samples i.e. 5 ml approximately, and yet the values of the parameters were persistently found to be reduced in all categories. This may lead to establish the presence of some undetected substance in the blood samples obtained through cupping.

CONCLUSION

Assessing the uniform pattern of decline in the values of tested parameters of cupping blood samples in comparison to venous blood samples; it can be safely assumed that there is a marked difference in the composition of blood drawn through the technique of cupping as compared to the blood drawn intravenously. The reason for this significant difference is yet not known, however it can be assumed that it may be due to the presence of some unidentified substance in the blood samples from cupping site.

REFERENCES

Abu Abdullah Muhammad Bin Ismail Bukhari, Hadith no. 5683, kitab-ul-ilaaj, Sahih Bukhari, markazi jamiat ahl-e-Hadis hind, vol.7 281

Ahmadi A, Schwebel DC, Rezaei M. 2008.The efficacy of wet-cupping in the treatment of tension and migraine headache. *Am J Chin Med*; 36:37-44.

Andreas, MS., Bock, RL., Thomas R., Marcus B., Jürgen B., Jost L., Frauke M. and Gustav JD. 2009. Effects of traditional cupping therapy in patients with carpal tunnel syndrome: A Randomized Controlled Trial .The Journal of Pain; 10:601-608.

Chirali I.Z. and Scott J., 1999. Cupping therapy: traditional Chinese medicine, Elsevier, Philadelphia. 3.

Eisenberg, DM., Davis, RB and Ettner, SL. *et al.* 1998., Trends in alternative medicine use in the United States, 1990–1997: results of a follow-up national survey, *JAMA* 280:1569-1575.

Jong, IK., Myeong SL., Dong-Hyo L., Kate B and Edzard E., 2009 Cupping for treating pain: A systematic review, Evidence based complementary and alternative medicine, 1-7.

Khosro F., David CS., Morteza S., Mansour C., Reza M., Alireza A. 2009. The effectiveness of wet-cupping for nonspecific low back pain in Iran: A randomized controlled trial. *Complementary Therapies in Medicine* 17: 9-15.

Yoo SS and Tausk, F. 2004. Cupping: East meets West, *International Journal of Dermatology* 43: 664-665.