

Examining the Efficacy of Cupping Therapy for Alleviating Rheumatoid Arthritis Symptoms

Aamna Qazi¹, Saadia Abubakar², Waris Rafique³, Shafique Rehman⁴, Furqan Khan⁵, Arshad Bhutto⁶, Azka Qazi⁷, Zunaira Qazi⁸

- 1 *Fellow Resident, Department of Rheumatology, Jinnah Postgraduate Medical Center, Karachi Pakistan*
Concept, Drafting, Layout, Data collection
- 2 *Post Graduate Resident, Department of Cardiology, Liaquat National Hospital, Karachi Pakistan*
Concept, Writeup, Drafting, Data Collection, Layout
- 3 *Resident, Department of Medicine, Patel Hospital, Karachi Pakistan*
Concept, Drafting, Literature review, Data collection
- 4 *Assistant Professor & Head, Department of Rheumatology, Jinnah Postgraduate Medical Center, Karachi Pakistan*
Concept, Drafting, Layout
- 5 *Senior Registrar, Department of Rheumatology, Jinnah Postgraduate Medical Center, Karachi Pakistan*
Data entry, Statistical analysis, Writeup
- 6 *Post Graduate Resident, Chandka Medical College (CMC), Larkana Pakistan*
Data entry, Statistical analysis, Writeup
- 7 *Resident, Department of Medicine, Civil Hospital, Karachi Pakistan*
Data entry, Statistical analysis, Writeup
- 8 *MBBS Student, Dow Medical College, Karachi Pakistan*
Data entry, Statistical analysis, Writeup

CORRESPONDING AUTHOR

Dr. Aamna Qazi

Post Graduate Resident, Department of Rheumatology, Jinnah Postgraduate Medical Center, Karachi Pakistan
Email: draamnaqazi@gmail.com

Submitted for Publication: 29-04-2022
Accepted for Publication 16-12-2022

How to Cite: Qazi A, Abubakar S, Rafique W, Rehman S, Khan F, Bhutto A, Qazi A, Qazi Z. Examining the Efficacy of Cupping Therapy for Alleviating Rheumatoid Arthritis Symptoms. *APMC* 2022;16(4):252-255. DOI: 10.29054/APMC/2022.811

ABSTRACT

Background: Cupping therapy is used to treat various illnesses of the body, there is increasing interest in the use of the technique to treat a variety of musculoskeletal disorders. **Objective:** This study evaluated the effectiveness of cupping therapy for managing persistent rheumatoid arthritis (RA) and associated disabilities in RA patients. **Study Design:** This is a cross-sectional study. **Settings:** A large tertiary care hospital in Karachi, Pakistan. **Duration:** Seven months from March 2022 to September 2022. **Methods:** The study included 30 RA patients between the ages of 25-50 years, out of 50 patients who received cupping therapy in a at our center. The researchers collected blood samples before and after wet cupping therapy to evaluate hematological changes, ESR, CRP, and RF as diagnostic tools for RA. **Results:** The post-treatment results showed a significant decrease in inflammatory markers, particularly RF ($p < 0.007$), CRP ($p < 0.05$), WBCs ($p = 0.03$), and neutrophils ($p < 0.011$), which are sensitive markers of inflammation. No adverse effects were reported by the patients after the therapy. **Conclusion:** In conclusion, the study suggests that cupping therapy has a beneficial effect on RA symptoms by reducing inflammatory markers, and it is recommended as an adjunctive therapy for RA. However, further studies are needed to confirm these findings and develop new concepts of cupping therapy in the future.

Keywords: Cohort study, Cupping, Rheumatoid arthritis, Inflammatory markers, Biochemical parameters, Hematological changes.

INTRODUCTION

Cupping is an ancient healing technique that has been used for centuries to manage pain and improve physical function. It is considered an integral part of complementary and alternative medicine (CAM) and has its roots in early Egyptian and Chinese medical practices.¹⁻¹³ The exact origin of cupping is unknown, but the technique involves the application of localized pressure to specific areas of the skin using glass, plastic or bamboo cups.²⁻⁶ The marks left behind by cupping can indicate different types of injuries or illnesses.^{3,4}

Overall, cupping is a unique and holistic therapy that can offer benefits for those seeking alternative or complementary treatments for pain or other health issues. However, it is important to consult with a qualified practitioner and ensure that cupping is a safe and appropriate therapy for an individual's particular health needs.⁴ Cupping therapy has been found to be effective in treating various types of pain, including RA. The proposed mechanism of action for cupping therapy is through hematological, immunological, and neural effects, and it is believed that it can modulate the inflammatory markers involved in RA.⁵

Rheumatoid arthritis (RA) is a common inflammatory arthritis that can cause disability and have significant social and economic costs. It primarily affects the small joints in the hands and feet, and patients often experience a decline in quality of life and increased anxiety and depression as the disease progresses.¹³⁻¹⁵ Despite current treatment guidelines, many patients struggle with loss of efficacy and serious adverse events. As a result, many patients seek out complementary and alternative medicine (CAM) treatments, such as cupping therapy, which is increasingly popular due to its low cost and minimal side effects. Cupping therapy has been found to be effective in treating various types of pain, including RA. The proposed mechanism of action for cupping therapy is through hematological, immunological, and neural effects, and it is believed that it can modulate the inflammatory markers involved in RA. Therefore, a study was designed to investigate the effects of cupping therapy on RA patients.

METHODS

The study included 30 RA patients, consisting of 15 males and 15 females, out of a total of 50 available subjects within a specific territory and timeframe. The study was conducted through a cohort design, in which cupping therapy was performed on the patients. The study lasted for seven months, from March 2022 to September 2022, during which the first five months were used for sample collection and the last two months for laboratory analysis.

The study was conducted with the necessary official approval from the Institutional Review Board (IBC) of the Faculty of Medicine at our hospital. Prior to participating in the study, all individuals were provided with an informed consent form and were given a clear explanation of the study's purpose and nature. They were required to sign the consent form before participating in the study.

For this study, all patients diagnosed with RA were selected. Information sheets were provided to the subjects, which explained the research procedures, the methods of specimen collection, and the criteria for inclusion in the study. The erythrocyte sedimentation rate (ESR) is a blood test that confirms joint examination findings and correlates with symptoms such as morning stiffness, fatigue, and arthritis. The principle of the ESR test is that red blood cells (RBCs) normally settle gradually in a vertical column due to negative charges on their surfaces and their large surface-area-to-volume ratio, which resists settling. Under conditions that promote RBC aggregation into rouleaux, the ESR increases. To perform the test, anti-coagulated blood is mixed thoroughly, drawn into a tube up to the zero mark with a rubber bulb, and left undisturbed in a stand for 1 hour before recording the result.

C-reactive protein CRP was quantified with the assistance of a Cobas 6000 - c501 analyzer (Roche Diagnostics, Germany) following the manufacturer's directions. CRP is a responsive biomarker of inflammation that is involved in the systemic response to inflammation. Its concentration in plasma increases during inflammatory conditions and has long been a significant clinical marker. CRP is commonly used as a first-line test to detect the inflammatory process, and its measurement can be helpful in monitoring disease activity and response to treatment. However, it is more responsive to short-term changes than long-term changes.

Blood samples were collected following standard medical procedures, and the extracted serum was stored at a low temperature for further analysis. Rheumatoid Factor (RF) was measured using an automatic machine (Cobas 6000 - c501 analyzer, Roche Diagnostics, Germany) in accordance with the manufacturer's instructions. RF testing is helpful in managing patients with RA, and has a sensitivity of 60-90% and a specificity of 80-85%. In this test, diluted samples were mixed with purified RF antigen (human IgG) on a microtiter plate, and any RF-IgM antibody present bound to the immobilized human IgG, forming antigen-antibody complexes. Horseradish peroxidase-conjugated anti-human IgM was added to bind with the antigen-antibody complex, followed by washing and adding a substrate to initiate a hydrolytic reaction that led to color development. The intensity of the developed color was proportional to the amount of RF-specific IgM antibody bound to the wells, and the results were recorded and calculated using a spectrophotometer and a calibrator.

A fully automated machine from Roche Diagnostics in Germany was used to measure CBC and Trisodium citrate. For the measurement of CRP and RF, a fully automated machine called Cobas 6000 - c501 analyzer from the same manufacturer was used. Additionally, the Westergren tube was used in conjunction with trisodium citrate for blood sedimentation rate analysis.

The data obtained from the study were analyzed using statistical software programs SPSS version 25 and Sigma 12.5. The results were presented as Mean \pm SD for all parameters, except for ESR which was log-transformed as it was not normally distributed, and the geometric means were reported. The statistical significance and mean differences of all parameters were evaluated.

RESULTS

Out of 50 RA patients who were receiving cupping therapy, 30 patients (60%) were selected and examined for the study. The gender distribution was equal, with 50% males and 50% females. 20 patients (40%) were excluded from the study, either because they had co-

morbidities (18 patients) or because their age was either below 25 or over 50 years old (2 patients) refer to Table 1 for patient demographics.

Table 1: Patient demographics:

Parameters		Values	Percentage
Gender	Male	15	50%
	Female	15	50%
Average age		38.5 years	
Previous cupping therapy		12	30%

Table 2: Biochemical markers before and after cupping therapy

Parameters	Before therapy	After therapy	P-value
WBC (109/L)	6.20±1.02	5.70 ± 1.05	0.033
Neutrophil (109/L)	3.30±1.07	2.50±0.91	0.012
Lymphocyte (109/L)	2.76 ± 0.98	2.44 ± 0.78	0.044
Monocyte (109/L)	0.43 ± 0.21	0.33 ± 0.11	0.027
Eosinophil (109/L)	0.30 ± 0.29	0.26 ± 0.37	0.483
Basophil (109/L)	0.11 ± 0.16	0.09 ± 0.09	0.555
RBC (1012/L)	5.20 ± 0.63	4.90 ± 0.69	0.039
HB (g/dL)	13.7 ± 2.11	13.2 ± 2.10	0.36
PCV (%)	45.9 ± 4.64	43.8 ± 5.27	0.07
MCV (fL)	88.7 ± 7.33	88.9 ± 6.94	0.86
MCH (pg)	25.9 ± 2.46	26.3 ± 1.74	0.80
MCHC (g/dL)	29.27 ± 2.74	29.31 ± 2.10	0.87
RDW (%)	13.53 ± 0.98	13.53 ± 1.42	1.00
Platelets (109/L)	253.52± 71.9	269.19±66.3	0.086
MPV (fL)	8.72±1.45	8.45±1.74	0.344

Effect of Cupping on CBC: The study found that cupping therapy caused a significant decrease in the levels of white blood cells, neutrophils, lymphocytes, and monocytes in RA patients (with p-values less than 0.03, 0.01, 0.04, and 0.02, respectively) compared to before cupping therapy, as shown in Table 2. Additionally, the levels of red blood cells and hemoglobin also decreased slightly after cupping therapy (with p-values of 0.039 and 0.36, respectively). Other components did not show any significant changes.

Effect of Cupping on ESR: The study showed a slight decrease in the rate of erythrocyte sedimentation after cupping therapy (with a p-value of less than 0.3), but this reduction was not statistically significant when compared to the values of RA patients before undergoing cupping therapy.

Effect of Cupping on CRP and RF: Previous research has established that CRP and RF are useful indicators in patients with RA. These markers tend to increase in RA patients when compared to healthy individuals. The results depicted demonstrate that serum CRP levels decreased significantly (p-value<0.05) in RA patients following cupping therapy. Likewise, RF levels followed a similar trend where serum RF levels decreased remarkably (p-value<0.007) in RA patients after undergoing cupping therapy. RF is considered to be one of the primary sensitive markers in RA patients.

DISCUSSION

Over the past decade, community surveys in the US have reported that more than one-third of Americans use complementary and alternative medicine (CAM) treatments each year.⁶ It is believed that individuals with psychiatric problems are more likely to use CAM therapies because of common symptoms such as fatigue, chronic pain, insomnia, anxiety, and depression. Studies have shown that up to 80% of the US population has tried a therapy such as acupuncture or mind/body medicine, and almost 40% of Americans rely on some form of alternative therapy as part of their regular healthcare program. Despite the significant role of modern medicine in disease management, it is often unable to prevent or control chronic diseases. CAM has been shown to be effective in this regard, and this type of medicine is referred to as integrative medicine. The aim of our study was to investigate the effect of cupping therapy on inflammatory markers in patients with rheumatoid arthritis, including changes in complete blood cell count (CBC), erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), and rheumatoid factor (RF). Our results showed that WBC and neutrophil counts were significantly higher in RA patients before cupping compared to after cupping, which is consistent with previous studies.⁷⁻¹² This is because cupping helps the body eliminate toxins from the blood. Additionally, the RBC count was slightly higher in RA patients before cupping, which is likely due to the role of cupping in the excretion of old RBCs.¹³⁻¹⁹ The increase in RBCs is related to hematocrit levels.

The study investigated the effects of cupping therapy on rheumatoid arthritis (RA) patients, focusing on changes in various blood parameters and inflammatory markers. The use of complementary and alternative medicine (CAM) is prevalent among Americans, especially those with psychiatric issues. Despite modern medicine's role in managing diseases, it is often not effective in preventing chronic illnesses. The study found that cupping resulted in a significant reduction in WBC, neutrophil, lymphocyte, and monocyte counts, as well as a slight decrease in RBC and HB counts. Platelet counts were slightly higher after cupping. The study also found

that cupping led to a significant decrease in inflammatory markers, such as RF and CRP, but ESR was not significantly changed. The results suggest that cupping may help excrete toxins and waste material from the body, leading to improvements in certain blood parameters and inflammatory markers in RA patients.

CONCLUSION

The current study findings indicate that wet cupping may provide significant short-term clinical benefits without any reported adverse effects. Cupping therapy was associated with a reduction in inflammatory markers such as CRP and RF, which significantly decreased after cupping, resulting in an improvement in RA symptoms. However, further research is needed to fully understand the underlying mechanisms of cupping therapy in RA treatment.

LIMITATIONS

This study had a relatively small sample size and was considered preliminary. To further investigate the effects of cupping therapy, it is recommended to conduct a more comprehensive study with a larger sample size and include control groups for comparison.

SUGGESTIONS / RECOMMENDATIONS

Through this study we came to know that through cupping there is improvement in clinical and lab parameters of RA patients and this can be used as a managing tool along with disease modifying drugs in deceased patients.

CONFLICT OF INTEREST / DISCLOSURE

None.

ACKNOWLEDGEMENTS

We like to thank all the patients and their caregivers who agreed to partake in the study, we would also like to thank our research team and staff at our hospital for their hard work and dedication in making this projects a success.

REFERENCES

1. Wang YL, An CM, Song S, Lei FL, Wang Y. Cupping Therapy for Knee Osteoarthritis: A Synthesis of Evidence. *Complement Med Res.* 2018;25(4):249-255.
2. Qureshi NA, Ali GI, Abushanab TS, El-Olemy AT, Alqaed MS, El-Subai IS, et al. History of cupping (Hijama): a narrative review of literature. *J Integr Med.* 2017 May;15(3):172-181.
3. Chirali IZ. *Traditional Chinese Medicine Cupping Therapy-E-Book.* Elsevier Health Sciences; 2014 Jun 27.
4. Alam MZ. *Herbal medicines.* APH Publishing; 2008.
5. Mahdavi MR, Ghazanfari T, Aghajani M, Danyali F, Naseri M. Evaluation of the effects of traditional cupping on the biochemical, hematological and immunological factors of human venous blood. *A compendium of essays on alternative therapy Croatia: InTech.* 2012;6:67-88.
6. Montazer R, Namavary D. Comparison biochemistries of obtained blood products between the hijama and phlebotomy techniques of traditional islamic remedy; healthy young adults at fasting state. *Journal of Hospital and Medical Management.* 2016;2:1-6.
7. Qureshi NA, Al-Bedah AM, Abushanab TS. Cupping Hijama Therapy Skin Marks: What Should We Know About Them? *Dermatology.* 2017;43(9):664-665.
8. Al-Rubaye KQ. The clinical and histological skin changes after the cupping therapy (Al-Hijamah). *Journal of the Turkish Academy of Dermatology.* 2012 Mar 1;6(1).
9. Abele J. *Das Schröpfen: eine bewährte alternative Heilmethode.* Elsevier, Urban&FischerVerlag; 2003.
10. Al-Bedah AMN, Elsubai IS, Qureshi NA, Aboushanab TS, Ali GIM, El-Olemy AT, et al. The medical perspective of cupping therapy: Effects and mechanisms of action. *J Tradit Complement Med.* 2018 Apr 30;9(2):90-97.
11. Lauche R, Cramer H, Hohmann C, Choi KE, Rampp T, Saha FJ, et al. The effect of traditional cupping on pain and mechanical thresholds in patients with chronic nonspecific neck pain: a randomised controlled pilot study. *Evid Based Complement Alternat Med.* 2012;2012:429718.
12. Ahmedi M, Siddiqui MR. The value of wet cupping as a therapy in modern medicine-An Islamic Perspective. 2014.
13. Firestein GS. Evolving concepts of rheumatoid arthritis. *Nature.* 2003 May 15;423(6937):356-61.
14. McInnes IB, Schett G. The pathogenesis of rheumatoid arthritis. *N Engl J Med.* 2011 Dec 8;365(23):2205-19.
15. Murphy NJ, Eyles JP, Hunter DJ. Hip Osteoarthritis: Etiopathogenesis and Implications for Management. *Adv Ther.* 2016 Nov;33(11):1921-1946.
16. Ndao-Brumblay SK, Green CR. Predictors of complementary and alternative medicine use in chronic pain patients. *Pain Med.* 2010 Jan;11(1):16-24.
17. Saad A. Reviving the Cupping therapy" Al-Hijama" through the frame work of developing health care tourism in Egypt. *Journal of Tourism and Hospitality.* 2015;4(5).
18. Aboushanab TS, AlSanad S. Cupping therapy: an overview from a modern medicine perspective. *Journal of acupuncture and meridian studies.* 2018 Jun 1;11(3):83-7.
19. Kim JI, Lee MS, Lee DH, Boddy K, Ernst E. Cupping for treating pain: a systematic review. *Evidence-Based Complementary and Alternative Medicine.* 2011 Jan 1;2011.