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Review Article

Evidence-Based Therapeutic Benefits of Cupping Therapy (*Hijāma*): A Comprehensive Review

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Abstract

Ilaj bi'l tadbeer (regimenal therapy) is one of the preferred treatment methods used in Unani system of medicine since ancient times. *Hijāma* is one of the effective modalities of treatment in *Ilaj bi'l tadbeer*. It is a unique therapeutic procedure in which cup like vessels are placed on the body surface by creating a vacuum to either let out blood from below the skin surface or just plain suction without bloodletting. The objective of this comprehensive review paper is to address the claims of *Unāni* physicians and clinical studies conducted on the efficacy of *Hijāma*. Various published clinical trials showed the efficacy of *Hijāma* in the management of a number of diseases. Though, the effect showed by some clinical trials was short term. Hence, it is suggested that rigorous, well-designed, controlled, randomized and long duration follow up clinical trials on large sample size are to be conducted by trained clinicians or researchers to establish the efficacy of *Hijāma* in the management of various diseases.

Keywords: *Ilaj bi'l tadbeer*, *Hijāma*, Therapeutic Benefits

Introduction:

Al Hijāma is an Arabic word which means application of cups and the literary meaning of *Hijāma* is sucking^{1,2,3,4}. It is a technique carried out by application of cup shaped glass vessels on the body surface, creating vacuum by heat or by special suction apparatus, in order to evacuate the morbid materials, to divert the material from the diseased part and to encourage the blood flow to the affected site^{1,5,6}. *Rāzi* stated that cupping is a process of releasing the blood (toxic) from superficial small vessels located in muscles⁷. *Hijāma* can be defined as a minor surgical excretory procedure that creates superficial skin scarification to open skin barrier and creates a pressure gradient and a traction force across the skin and underlying capillaries to drain interstitial fluids and enhances blood clearance and waste excretion through skin⁸.

Classifications of *Hijāma* in Unani Medicine:

On the basis of scarification *Hijā ma* has been classified into two main types.

1. ***Hijāma bish-Sharṭ*** (wet cupping /cupping with scarification)
2. ***Hijāma bilā-Sharṭ*** (dry cupping /cupping without scarification)^{9,10,11,12, 13, 14,15}

Apart from these two types, *Abul-qāsim-al-Zahrāwī* has mentioned a third type of *Hijāma* in hisbook as follows¹⁶.

3. ***Hijāma-i-Āabi* (Hydro cupping)**

Hijāma bilā Shart is further divided into two types

- a) ***Hijāma-Nāriyah/ba-ātish*** (cupping with fire)
- b) ***Hijāma-Ghair-Nāriyah/be-ātish*** (cupping without fire)

Further *Hijāma* is of two kinds on the basis of condition and situations

1. ***Hijāma Iḍtirārī*** (Mandatory)
2. ***Hijāma Ikhtiyārī*** (Optional)^{9,17}

On the basis of movement of cups, *Hijāma bilā-Sharṭ* is

further subdivided into two types:

1. *Hijama-i-Ghair Mutharrika* (Stationary cupping)
2. *Hijama-i-Mutaharrika* (Gliding or moving cupping)¹⁸

Mechanism of Action in *Unani* Medicine:

Unani system of medicine which elaborates that cupping therapy works on the basis of two following fundamentals.

1. *Tanqiya-i-Mawād* (Evacuation of morbid matter)
2. *Imāla-i-Mawād* (Diversion of morbid matter)

In case of *Hijāma bila Sharṭ* (Dry cupping) which works on the principle of *Imāla-i-Mawād* causes the diversion of morbid matter from one site to another.

In case of *Hijāma bish Sharṭ* which works on the principle of *Tanqiya-i-Mawād* evacuates the morbid matter from the affected site^{19,20,21}. *Jālinūs* has mentioned that when the humours become thick in affected joint, *Hijāma* becomes very useful²². It opens the pores of the skin, enhances the blood circulation, nourish the affected area with fresh blood and improves the eliminative function which allows the *Akhlāt-i-fāsida* to be evacuated from the body. It helps to draw out and eliminate the imbalanced qualities i.e. *Ḥār* (heat), *Bārid* (cold), *Raṭab* (moistness), *Yābis* (dryness)¹⁹.

Mechanism of Action of in Modern Medicine:

Exact mechanism of *Hijāma bish Sharṭ* is still unknown but many researchers tried to explain the mechanism of action of *Hijāma bish Sharṭ* through some theories like Pain gate theory, Prostaglandin theory, Endorphins and Enkephalin production theory, Nitric oxide theory and Taibah theory etc. The short description of each of these theories is given as under²³.

Pain gate theory: This theory states that there is a gate or channel to transfer pain signals from its actual site of origin to the brain. When suction cup is applied, it produces pain which interfere with the actual pain which can't be transmitted in the same gate or channel and in this way, elimination of pain occurs²³.

Prostaglandin theory: Prostaglandins are produced as a result of inflammation in our body and these prostaglandins transmit pain signals to the brain. By doing *Hijāma bish Sharṭ*, we take these products out from the body and this results in reduction of pain^{23,24}.

Endorphins and enkephalin production theory: These are natural components released in our body and these components are called 'endogenous please substances' which reduce the pain and enhance the mood^{23,24}.

Nitric Oxide theory: Nitric oxide is very important substance released in the body as a result of any trauma, and it is released also during or after *Hijāma bish Sharṭ*. The functions of nitric oxide are:

1. Vasodilatation- this allows more blood flow to the area
2. Two-way vasodilatation effects
3. Muscle relaxation which cures spasms
4. Anti-thrombotic- protects the vessels from thrombosis
5. Anti-inflammatory and prevents stenosis of blood vessels^{23,24}.

Taibah Theory: This theory is currently the most accurate scientific explanation of *Hijāma's* curative properties. It explains that *Hijāma bish Sharṭ* is a minor surgical excretory procedure and its effect is similar to the mechanism of

excretory function via glomerular filtration of the kidney as well as abscess drainage, by which pathological substances are removed from the body²³.

After reviewing many theories and discussion, it was concluded that wet cupping is dominated by control in (I) Neural, (II) Haematological, & (III) Immune system functioning^{25,26}.

In the neural system, effect occurs by regulation of neurotransmitters and hormones like serotonin, dopamine, endorphin, acetylcholine etc^{24,25,27}.

In the haematological system, main effects occur by these two pathways:

1. Regulation of coagulation and anti-coagulation systems like decrease in the level of haematological element such as fibrinogen
2. Decrease in the hematocrit followed by increase in the blood flow and in the end organ oxygenation^{24,27}.

In the immune system, main effects occur by these three pathways:

1. Irritation of the immune system by producing local simulated inflammation followed by activation of complementary system and increase level of immune products such as interferon and tumour necrotizing factors.
2. Organize of traffic of lymph and increase in the flow of lymph in the lymph vessels.
3. Effect on thymus^{24,25}.

Effect of Cupping therapy on Musculoskeletal system:

Farhadi K et al. conducted a randomized trial to evaluate the efficacy of wet cupping therapy for nonspecific low back pain and concluded that wet cupping care was significantly more effective in reducing bodily pain than usual care at 3-month follow-up²⁶. **Al Bedah A et al.**, through his study concluded that wet cupping is potentially effective in reducing pain and improving disability associated with persistent nonspecific low back pain at least for 2 weeks after the end of wet cupping period²⁸. **Kim JI et al.** conducted a randomized, waiting-list controlled, open-label, parallel-group pilot trial to evaluate the efficacy of wet cupping for persistent nonspecific low back pain and reported a significant improvement in pain in favor of wet cupping²⁹. Similarly, **Mardani-Kivi M et al.** conducted a randomized clinical trial to evaluate the efficacy of wet cupping on nonspecific low back pain and reported significant improvement in pain without any conventional treatment³⁰. **Lauche R et al.** conducted a randomized controlled pilot study to evaluate the efficacy of a series of five dry cupping treatments on pain and mechanical thresholds in patients with chronic nonspecific neck pain and claimed that the patients of the treatment group had significant improvement in pain score after receiving cupping therapy than patients of the waiting-list control group³¹. **Cramer H et al.** studied to determine the efficacy of pulsating cupping for treating chronic neck pain. It was a randomized controlled clinical trial with two parallel groups. The authors concluded that Pneumatic pulsation cupping therapy appears to be a safe and effective method to relieve pain and to improve function and quality of life in patients with chronic neck pain³². **Saha FJ et al.** conducted a randomized controlled trial to evaluate the efficacy of cupping massage in patients with chronic neck pain and concluded that cupping massage appears to be effective in reducing pain and increasing

function and quality of life in patients with chronic non-specific neck pain³³. **Arslan M et al.** conducted a pilot study to evaluate the effect of traditional wet cupping on shoulder and neck pain and the authors reported significant improvement in shoulder and neck pain³⁴. **Kim TH et al.** concluded that two weeks of cupping therapy and an exercise program is effective in reducing pain and improving neck function in video display terminal workers³⁵. **Lauche R et al.** through his study concluded that significant increases were found for physical function and quality of life in patients with chronic nonspecific neck pain suggesting that cupping treatment might have sustainable effects for up to 2 years³⁶. Similarly, **Wen M X et al.** through his study concluded that wet cupping therapy provide a rapid therapeutic effect in nerve-root type cervical spondylosis, thus exhibiting significant analgesic effects³⁷. **Khan AA et al.** conducted a randomized controlled clinical trial to evaluate the efficacy of dry cupping for osteoarthritis of knee. The authors reported a significant improvement in pain in favor of dry cupping³⁸. **Abdullah KS et al.** through his study concluded that cupping therapy has an ameliorative effect on Rheumatoid Arthritis by reducing the level of inflammatory markers such C-reactive protein (CRP) and rheumatoid factor (RF)³⁹. **Bilal M et al.** studied to determine the efficacy of wet cupping for treating sciatica pain. The authors reported a highly statistically significant effect of wet cupping in the treatment of sciatica pain and improvement in activities of daily livings⁴⁰. Similarly, **Shaikh N et al.** through his study concluded that there is significant reduction in severity of symptoms and signs of sciatica after completion of the study⁴¹. **Michalsen A et al.** conducted a randomized controlled trial to evaluate the effects of traditional cupping therapy in patients with carpal tunnel syndrome. The authors concluded that a single course of wet cupping of the shoulder triangle overlying the trapezius muscle appears to be effective in relieving symptoms and pain for at least 1 week⁴². Similarly, **Mohammadi S et al.** through his study concluded that cupping therapy in a routine physical therapy program can reduce the severity of symptoms and improve the distal sensory disturbance of the median nerve⁴³. **Abuzar et al.** concluded through a randomized controlled clinical trial that dry cupping is effective in the management of non-specific low back pain⁴⁴. A comparative study between the effects of dry cupping and soft and prolonged massage in the management of knee osteoarthritis was conducted by **Islam MU et al.** In this randomized controlled clinical trial, it was concluded that dry cupping is significantly effective in the management of knee osteoarthritis⁴⁵.

Effect of Cupping therapy on Reproductive system:

Sultana A et al. studied to determine the efficacy of dry cupping for treating dysmenorrhea. The authors concluded that dry cupping is significant in reducing pain intensity in dysmenorrhea⁴⁶. **Dadmehr M et al.** studied a case report to evaluate the efficacy of dry cupping therapy in the management of uterine fibroid and concluded that dry cupping therapy is effective and safe in decreasing fibroid related symptoms like dysmenorrhea and excess bleeding and also the size of the fibroid⁴⁷. **Sultana A et al.** conducted a preliminary study to evaluate the efficacy of dry cupping on menorrhagia and concluded that dry cupping therapy is a useful treatment modality in decreasing the amount of menstrual blood flow in menorrhagia⁴⁸. **Abduljabbar H et al.** conducted a pilot study to evaluate the efficacy of wet cupping for treating female infertility. The authors claimed that wet cupping is beneficial in infertile women for attaining pregnancy⁴⁹. **Azizkhani M et al.** conducted a randomized controlled trial to evaluate the efficacy of dry cupping

therapy in the treatment of idiopathic menorrhagia and concluded that dry cupping is an effective treatment in reducing the intensity of bleeding during the menstrual period compared to medroxyprogesterone acetate⁵⁰. **Khan AA et al.** conducted a case report to evaluate the efficacy of wet cupping in the treatment of polycystic ovarian syndrome. The authors claimed that wet cupping regularizes menstrual cycle without fluctuating hormonal levels⁵¹. **Mokaberinejad R et al.** through his study concluded that Fennel seed infusion plus dry cupping therapy is effective and safe in reducing the days between two menstrual periods and manages oligomenorrhoea⁵².

Effect of Cupping therapy on Nervous system:

Ersoy S et al., conducted a randomized controlled trial to evaluate the efficacy of wet cupping therapy in migraine headache. The authors claimed that wet cupping therapy reduces pain and disability in migraine patients and that effectiveness increases as application continues⁵³. Similarly, **Seo J et al.** through his study concluded that cupping has potential therapeutic effects on treating migraine⁵⁴. **Ali M et al.** concluded that dry cupping along with Unani pharmacopeial formulation is effective in the management of hemiplegic stroke disabilities⁵⁵.

Effect of Cupping therapy on Circulatory system:

Aleyeidi NA et al. conducted a randomized controlled trial to evaluate the efficacy of wet cupping in hypertensive patients. The authors concluded that wet cupping therapy is effective in reducing systolic blood pressure in hypertensive patients for up to 4 weeks⁵⁶. **Husain NR et al.** conducted a single arm interventional study to evaluate the effect of wet cupping therapy on fasting blood sugar, renal function parameters, and endothelial function. The authors claimed that repeated wet cupping therapy improves the body's health which can lead to improvements in renal function and the prevention of metabolic diseases⁵⁷. **Nisari M et al.** conducted a randomized controlled trial to evaluate the effect of wet cupping therapy on serum lipid concentrations of among healthy young men. The authors recommended that wet cupping therapy may be an effective therapy for reduction of LDL cholesterol concentrations and consequently may have a protective effect against atherosclerosis⁵⁸. **Fadli et al.** conducted a randomized controlled trial to evaluate the effect of wet cupping against increased arterial baroreflex sensitivity in hypertensive patients. The authors concluded that wet cupping therapy effectively increases the sensitivity of arterial baroreflex with an indicator of decreased blood pressure in the elderly with hypertension up to a limit of 4 weeks after therapy⁵⁹.

Conclusion:

Hijāma is one of the procedures of *Ilaj bi'l tadbeer* (Regimenal therapy) described in Unani system of medicine which includes evacuation of morbid matter from the body using cup shaped vessels. From the above discussion it can be concluded that *Hijāma* plays an important role in maintaining normal health, it is beneficial in both preventive and curative regimen. *Hijāma* is used effectively for the management of musculoskeletal, reproductive, circulatory and nervous disorders. Hence, we suggest rigorous, controlled, randomized and long-duration follow-up studies on large sample size, to be conducted by trained clinicians or researchers to establish the efficacy *Hijāma* in the management of various diseases.

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