

Comparison of Safety and Efficacy of Al-Hijama (Cupping) and Conventional Medical Therapy for Sinusitis (I)

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Abstract

The study aims to evaluate safety and efficacy of Al-Hijama (wet-cupping) either as an adjuvant or an alternative to conventional medication therapy among adult patients with sinusitis. A randomized controlled clinical trial was conducted at Prophetic Medicine Research Cupping Clinic, King Abdulaziz University Hospital, Jeddah Saudi Arabia. The study used a simple randomization technique. Sixty (60) patients of chronic or recurrent acute sinusitis were divided equally into 3 groups. The first group had Hijama with drug therapy, second had Hijama plus salt nasal solution and mild analgesic if needed, and the third was treated with ordinary medicine regularly. The effect of Al-Hijama on sinusitis symptoms, use of medications, were studied. The results showed that both alternative and adjuvant Al-Hijama therapies were superior to conventional therapy with regard to the reduction of symptom frequency, severity, duration and use of medication. Al-Hijama therapy was effective, simple, affordable, acceptable, and safe when used correctly. It is expected that all patients with sinusitis would benefit from Al-Hijama.

Keywords

Sinusitis; Al-Hijama; Cupping; Prophetic medicine

Introduction

Sinusitis (rhinosinusitis), an inflammation of mucous membrane that lines the paranasal sinuses (*i.e.*, air-filled spaces in the skull and facial bones), is one of the most common health problems worldwide that affects 1 in 7 individuals in United States annually. Sinusitis may be acute (lasting for ≤ 4 weeks), chronic (lasting for 4–12 weeks or longer), or recurrent (attacks return several

times within 1 year). Quality of life scores for chronic sinusitis is also related with serious illnesses^[1,2]. Sinusitis may be caused by a viral (main cause) or bacterial infection, allergies, air pollution, or dysfunctional nasal morphology. Common sinusitis symptoms include a thick nasal mucus, plugged nasal passages, and facial pain; although, other symptoms including fever, headache, poor sense of smell, sore throat, and cough (worsens at night) have been reported^[3].

Current recommendations indicated symptomatic or adjunctive therapies as initial treatment for acute sinusitis^[4]. Most sinusitis cases are viral and will resolve without antibiotics within 10 days^[5]. However, antibiotics are often administered unnecessarily for such cases. In addition to being ineffective for viral infection, recurrent antibiotics usage weakens the immune system, causes antibiotic resistance, and can result in a chronic condition.

For chronic sinusitis or symptoms that persist or worsen over 7–10 days, amoxicillin is recommended as the initial treatment of choice for bacterial sinusitis, and corticosteroids may also be helpful. However, surgery may be indicated for resistant chronic or recurring sinusitis^[6,7]. Other complementary treatment choices have been reported, including apitherapy and aqua-puncture^[8,9]. If not treated timely and adequately, sinusitis can lead to serious complications including inflammation or abscesses of the skull bones, infections of the eye, abscesses under the periosteum or of the orbital, thrombosis of the cavernous sinus, loss of smell, meningitis, and/or epidural, subdural, or other brain abscesses^[10].

Arabic word Al-Hijama means “cupping”. Prophet Mohammad (Peace be upon Him) says, *“If any of your treatment modalities are beneficial, the benefit will be from the blade puncture in cupping therapy, a dose of honey, and cauterization, but I do not like cauterization”*^[11].

Currently, cupping therapy is practiced in many countries worldwide^[12]. Two main types of cupping therapy are used, including dry and wet^[13,14]. The wet cupping (Al-Hijama, as in Prophetic medicine) comprises a three-step technique involving suction, scarification, and suction. Taibah theory states that Al-Hijama clears causative pathological substances (CPS) from the blood and interstitial fluids^[15,16]. Previous studies have found that wet-cupping could successfully treat patients with headache in a primary care setting, and Al-Hijama yields better results when performed at pain sites^[17]. Al-Hijama was reported to increase the pharmacological effects of drugs, improve the immune system and remove pathogenic, allergenic, and inflammatory factors from the blood, lymph, and interstitial fluid. Additionally, previous studies have not reported any complications, caused by correctly performed Al-Hijama^[12,15].

Cupping is recommended as a complementary treatment modality for many chronic medical

conditions. The study aims to compare the efficacy and safety of Al-Hijama as an adjuvant or alternative to pharmacological therapy versus conventional medical treatment for the symptoms and the use of drugs for sinusitis.

Methods

A randomized controlled clinical trial was conducted at Prophetic Medicine Research Cupping Clinic, King Abdulaziz University (KAU), Jeddah, Saudi Arabia from January 2016 to March 2017. The trial is registered with the National Committee of Biological & Medical Ethics under number HA-02-J-008. The referred patients were divided into three study groups according to the mode of treatment; after which, the author selected 20 patients from each group using a simple randomization technique (file number selection). Al-Hijama is clear for both patient and therapist, so trial was not blinded. All adult patients (male or female) diagnosed as chronic or recurrent acute sinusitis, aged between 15 and 65 years, stable cases, were not treated with Al-Hijama for sinusitis before. Sixty patients were divided equally into three groups of 20 patients:

- Group I received Al-Hijama as an adjuvant to the main sinusitis drug therapy.
- Group II received Al-Hijama as main treatment with a salt solution five times per day and mild analgesic as (paracetamol) if needed.
- Group III received conventional sinusitis medication regularly for one week. These treatments were: antibiotics as amoxicillin 500 mg three times a day (TDS) antihistamine once daily, nasal spray containing corticosteroid TDS as flixonase or nasonex.

All participants were required to complete the questionnaire regarding symptoms recurrence, duration, presence, and severity. Drug therapies (if used), complimentary treatment use, degree of improvement after medical or Al-Hijama treatment, and the expectation of improvement from Al-Hijama, were graded on a 3-point Likert scale using clear, simple, and closed-ended phrases^[18].

Patients were examined during initial outpatient visits to University Medical Services Center General Clinic at KAU or the Ear, Nose, and Throat (ENT) clinic at KAU Hospital (KAUH). Patients who fulfilled the inclusion criteria were referred to Prophetic Medicine

Clinic, where they completed a questionnaire before cupping and provided written consent. During a one-month period, patients made three visits to the clinic at two-week intervals. Each session included cupping on 8 points, 6 points wet cupping (above and medial to both eyebrows over sinuses, over 7th cervical vertebra, 3 cm below it, on both sides of the neck behind and below both ears) and 2 points dry cupping (over sinuses on both sides of the nose above the alae nasal). According to the steps explained in the Taibah theory, shallow scarification incisions (approximately 1–2 mm long and <0.2 mm deep) were made. The patients were re-evaluated after three months, at which time they again completed questionnaires. The data was analyzed using the IBM SPSS Statistics for Windows, Version 20 (IBM Corp., Armonk, NY USA). Qualitative data are expressed as frequencies and percentages.

Results

Seventy-seven patients were referred; however, only 60 patients completed the questionnaire, representing 78% of response rate. 86% of the sample was consisted of Saudi nationals, 60% patients were aged between 36-50 years. 91.6% of the sample were females, 83.3% patients suffered from allergies, and 80% patients suffered from sinusitis for more than 3 years. Table 1 presents a comparison of post-treatment symptoms in the three studied groups. Patients in Groups I and II exhibited statistically significant improvements in the frequency, duration, severity and number of symptoms when compared with group III.

Table 2 presents a comparison of sinusitis symptoms before and after adding Al-Hijama treatment. Al-Hijama had significant positive effects on the frequency, duration, severity, and number of symptoms in both Al-Hijama-treated groups. A p-value < 0.05 is considered significant; a p-value < 0.001 is highly significant (chi-squared test).

Table 3 presents a comparison of using medication after treatment in the three studied groups. The groups exhibited highly statistically significant differences, with the use of drug therapy increasing in the group treated with medication only. Table 4 demonstrates a comparison of using medications before and after Al-Hijama treatment. Notably, medication use decreased drastically in both Al-Hijama-treated groups. A p-value < 0.05 was considered significant; a p-value < 0.001 was highly significant (chi-squared test). None of the

participants complained of or reported any adverse events after the Al-Hijama treatment.

Discussion

There were no potential sources of bias or limitations during the trial. According to the results, Al-Hijama improved sinusitis symptoms and reduced the use of medication therapy. As shown in Table 1, patients in both Al-Hijama groups exhibited significant improvements in the frequency, duration, severity, and types of symptoms when compared to patients treated with conventional medication alone. Furthermore, Table 2 revealed significant differences in patients' responses regarding the effects of Al-Hijama on the rate of sinusitis symptom recurrence. For instance, the rate of multiple recurrences per month was decreased from 85% before treatment to 0% after treatment in Group I and from 75% to 0%, respectively, in Group II; but remained at 55% in Group III. Furthermore, the rate of a single recurrence per three months was increased from 5% to 30% in Group I and from 5% to 30% in Group II, whereas the rate remained at 15% in Group III.

Additionally, patients reported significantly different symptom durations with regard to Al-Hijama usage. For example, the proportion of patients, who reported continuous symptoms, decreased from 30% to 0% in Group I and from 30% to 10% in Group II, whereas the proportion remained at 10% in Group III. The proportion of patients who reported that their symptoms only lasted for hours increased from 5% to 60% in Group I and from 5% to 35% in Group II but remained at 10% in Group III. In other words, the patients' views regarding the level of improvement in symptom quality and severity differed significantly and supported the use of Al-Hijama.

The study has compared sinusitis symptoms before and after treatment in two Al-Hijama treated groups and observed no difference in outcomes. It has been evaluated that Al-Hijama had a significant positive effect on symptom frequency, duration, type, and severity and that the two treatment modalities (pharmacological vs. nasal salt solution) did not yield different outcomes. However, this could indicate the misuse of medications by patients or physicians.

Tables 3 and 4 addressed the usage of treatments for sinusitis and related improvements. As shown in Table 3, a comparison of three studied groups showed

Table 1. Comparison of post-treatment symptoms among the three studied groups.

Symptoms	Groups						Chi-square Test
	Hijama and Medication		Medication Only		Hijama with Salt Drops or Analgesic Only		
	No.	%	No.	%	No.	%	
The rate of recurrence of symptoms rate Hijama?							
I did not have any attacks after Hijama for 3 months	5	25.00%	0	0.00%	12	60.00%	40.376 <0.001
More than once per month	0	0.00%	11	55.00%	0	0.00%	
Once per month	9	45.00%	6	30.00%	2	10.00%	
Once per 3 months	6	30.00%	3	15.00%	6	30.00%	
How long did the symptoms persist after?							
Many hours and less than 2 days	12	60.00%	2	10.00%	7	35.00%	14.714 0.023
2-6 days	7	35.00%	8	40.00%	6	30.00%	
1-4 weeks	1	5.00%	8	40.00%	5	25.00%	
Continuous	0	0.00%	2	10.00%	2	10.00%	

Table 2. Comparison of sinusitis symptoms before and after adding Al-Hijama treatment.

Did you suffer from headache after?											
No	9	45.00%						0	0.00%	19.091	<0.001
Yes	11	55.00%						20	100.00%		
If you suffered from headache mention the degree after?											
Mild	17	85.00%	1	5.00%	18	90.00%				44.567	<0.001
Moderate	3	15.00%	5	25.00%	2	10.00%					
Severe	0	0.00%	14	70.00%	0	0.00%					
Did you suffer from heaviness in the head when bending over after?											
No	7	35.00%	0	0.00%	16	80.00%				27.215	<0.001
Yes	13	65.00%	20	100.00%	4	20.00%					
If you suffered from heaviness, mention the degree after?											
Mild	14	70.00%	0	0.00%	12	60.00%				40.088	<0.001
Moderate	5	25.00%	8	40.00%	8	40.00%					
Severe	1	5.00%	12	60.00%	0	0.00%					
Did you complain of nasal secretions after?											
No	11	55.00%	2	10.00%	15	75.00%				17.813	<0.001
Yes	9	45.00%	18	90.00%	5	25.00%					
If you complained of nasal secretions, mention the degree after?											
Mild	15	75.00%	1	5.00%	15	75.00%				39.174	<0.001
Moderate	4	20.00%	4	20.00%	5	25.00%					
Severe	1	5.00%	15	75.00%	0	0.00%					
What was the color of secretions in case of its existence after?											
Colorless (runny nose)	7	35.00%	12	60.00%	4	20.00%				20.967	<0.001
Yellow	10	50.00%	1	5.00%	15	75.00%					
Green	3	15.00%	7	35.00%	1	5.00%					
Did you complain of secretions at the back of the throat after?											
No	9	45.00%	4	20.00%	13	65.00%				8.281	0.016
Yes	11	55.00%	16	80.00%	7	35.00%					
If you complained of secretions at the back of the throat, mention the degree after?											
Mild	12	60.00%	3	15.00%	14	70.00%				27.898	<0.001
Moderate	7	35.00%	5	25.00%	6	30.00%					
Severe	1	5.00%	12	60.00%	0	0.00%					
Did you suffer from sneezing after?											
No	8	40.00%	2	10.00%	14	70.00%				15.000	<0.001
Yes	12	60.00%	18	90.00%	6	30.00%					
If you suffered from sneezing mention the degree, after?											
Mild	11	55.00%	6	30.00%	11	55.00%				16.106	0.003
Moderate	9	45.00%	7	35.00%	9	45.00%					
Severe	0	0.00%	7	35.00%	0	0.00%					
Did you suffer from cough that intensified during the night after?											
No	15	75.00%	10	50.00%	19	95.00%				10.398	0.006
Yes	5	25.00%	10	50.00%	1	5.00%					

Table 2. (Continuation) Comparison of sinusitis symptoms before and after adding Al-Hijama treatment.

If you suffered from cough that intensified during the night, mention the degree after?										
Mild	12	60.00%	2	10.00%	10	50.00%	17.167	0.002		
Moderate	7	35.00%	12	60.00%	10	50.00%				
Severe	1	5.00%	6	30.00%	0	0.00%				
Did you suffer from red eyes after?										
No	16	80.00%	6	30.00%	19	95.00%	21.412	<0.001		
Yes	4	20.00%	14	70.00%	1	5.00%				
If you suffered from red eyes, mention the degree after?										
Mild	11	55.00%	3	15.00%	13	65.00%	19.111	<0.001		
Moderate	9	45.00%	11	55.00%	7	35.00%				
Severe	0	0.00%	6	30.00%	0	0.00%				
Did you suffer from nasal blockage after?										
No	8	40.00%	1	5.00%	17	85.00%	26.199	<0.001		
Yes	12	60.00%	19	95.00%	3	15.00%				
If you suffered from nasal blockage, mention the degree after?										
Mild	15	75.00%	0	0.00%	12	60.00%	36.062	<0.001		
Moderate	4	20.00%	8	40.00%	8	40.00%				
Severe	1	5.00%	12	60.00%	0	0.00%				
Did you suffer from weakness in the sense of smell after?										
No	12	60.00%	11	55.00%	19	95.00%	9.048	0.001		
Yes	8	40.00%	9	45.00%	1	5.00%				
If you suffered from weakness in the sense of smell, mention the degree after?										
Mild	9	45.00%	2	10.00%	9	45.00%	15.500	0.004		
Moderate	9	45.00%	10	50.00%	11	55.00%				
Severe	2	10.00%	8	40.00%	0	0.00%				
Did you suffer from weakness in the sense of taste after?										
No	16	80.00%	15	75.00%	20	100.00%	5.490	0.064		
Yes	4	20.00%	5	25.00%	0	0.00%				
If you suffered from weakness in the sense of taste, mention the degree after?										
Mild	8	40.00%	5	25.00%	14	70.00%	11.441	0.022		
Moderate	12	60.00%	13	65.00%	6	30.00%				
Severe	0	0.00%	2	10.00%	0	0.00%				
Did you complain from change in sound after?										
No	13	65.00%	7	35.00%	19	95.00%	15.824	<0.001		
Yes	7	35.00%	13	65.00%	1	5.00%				
If you complained from change in sound, mention the degree after?										
Mild	9	45.00%	2	10.00%	9	45.00%	23.158	<0.001		
Moderate	11	55.00%	9	45.00%	11	55.00%				
Severe	0	0.00%	9	45.00%	0	0.00%				
Did you complain of high temperature with sinusitis after?										
No	17	85.00%	12	60.00%	18	90.00%	6.088	0.048		
Yes	3	15.00%	8	40.00%	2	10.00%				

Table 2. (Continuation) Comparison of sinusitis symptoms before and after adding Al-Hijama treatment.

If you complained of high temperature, mention the degree after?													
Mild	12	60.00%	12	60.00%	7	35.00%						3.337	0.189
Moderate	8	40.00%	8	40.00%	13	65.00%							
Severe	0	0%	0	0%	0	0%							
Did you suffer from fatigue due to sinusitis after?													
No	5	25.00%	1	5.00%	15	75.00%						22.857	<0.001
Yes	15	75.00%	19	95.00%	5	25.00%							
If you suffered from fatigue, mention the degree after?													
Mild	11	55.00%	2	10.00%	6	30.00%						21.189	<0.001
Moderate	7	35.00%	5	25.00%	11	55.00%							
Severe	2	10.00%	13	65.00%	3	15.00%							
Did you suffer from insomnia due to sinusitis after?													
No	7	35.00%	3	15.00%	17	85.00%						21.010	<0.001
Yes	13	65.00%	17	85.00%	3	15.00%							
If you suffered from insomnia what was its degree after?													
Mild	12	60.00%	0	0.00%	8	40.00%						40.825	<0.001
Moderate	7	35.00%	5	25.00%	12	60.00%							
Severe	1	5.00%	15	75.00%	0	0.00%							
Did you suffer from bad breath after?													
No	15	75.00%	8	40.00%	19	95.00%						14.762	0.002
Yes	5	25.00%	12	60.00%	1	5.00%							
If you suffered from bad breath, mention the degree after?													
Mild	14	70.00%	7	35.00%	11	55.00%						9.353	0.053
Moderate	6	30.00%	10	50.00%	9	45.00%							
Severe	0	0.00%	3	15.00%	0	0.00%							
Did you suffer from swelling around the eyes and cheeks after?													
No	12	60.00%	7	35.00%	19	95.00%						15.646	<0.001
Yes	8	40.00%	13	65.00%	1	5.00%							
If you suffered from swelling around the eyes and cheeks, mention the degree after?													
Mild	16	80.00%	7	35.00%	9	45.00%						17.405	0.002
Moderate	4	20.00%	8	40.00%	11	55.00%							
Severe	0	0.00%	5	25.00%	0	0.00%							
Did you suffer from nausea due to sinusitis after?													
No	15	75.00%	10	50.00%	19	95.00%						10.398	0.006
Yes	5	25.00%	10	50.00%	1	5.00%							
If you suffered from nausea, mention the degree after?													
Mild	14	70.00%	8	40.00%	6	30.00%						20.637	<0.001
Moderate	6	30.00%	6	30.00%	14	70.00%							
Severe	0	0.00%	6	30.00%	0	0.00%							
Did you feel pain in the forehead after?													
No	9	45.00%	1	5.00%	17	85.00%						25.859	<0.001
Yes	11	55.00%	19	95.00%	3	15.00%							

Table 2. (Continuation) Comparison of sinusitis symptoms before and after adding Al-Hijama treatment.

If you felt pain in the forehead, mention the degree after?										
Mild	14	70.00%	4	20.00%	8	40.00%	34,573	<0.001		
Moderate	6	30.00%	4	20.00%	12	60.00%				
Severe	0	0.00%	12	60.00%	0	0.00%				
Did you feel pain in your cheeks after?										
No	10	50.00%	3	15.00%	19	95.00%	25,848	<0.001		
Yes	10	50.00%	17	85.00%	1	5.00%				
If you felt pain in your cheeks, mention the degree after?										
Mild	16	80.00%	2	10.00%	13	65.00%	35,340	<0.001		
Moderate	4	20.00%	6	30.00%	7	35.00%				
Severe	0	0.00%	12	60.00%	0	0.00%				
Did you feel pain in the sides of the nose after?										
No	8	40.00%	4	20.00%	18	90.00%	20,800	<0.001		
Yes	12	60.00%	16	80.00%	2	10.00%				
If you felt pain in the sides of the nose, mention the degree after?										
Mild	15	75.00%	5	25.00%	10	50.00%	33,333	<0.001		
Moderate	5	25.00%	3	15.00%	10	50.00%				
Severe	0	0.00%	12	60.00%	0	0.00%				

Table 3. Comparison of using medication after treatment among the three studied groups.

Symptoms	Hijama and medication			p*	Hijama with salt drops or analgesic only			p*	
	Before		After		Before		After		
	No.	%	No.		%	No.	%		
The rate of recurrence of symptoms before hijama.									
I did not have any attacks after Hijama for 3 months	0	0.00%	5	25.00%	<0.001*	0	0.00%	12	60.00%
Many times, per month	17	85.00%	0	0.00%		15	75.00%	0	0.00%
Once per month	2	10.00%	9	45.00%		4	20.00%	2	10.00%
Once per 3 months	1	5.00%	6	30.00%		1	5.00%	6	30.00%
How long did the symptoms persist before?									
many hours and less than 2 days	1	5.00%	12	60.00%	<0.001*	1	5.00%	7	35.00%
2-6 days	8	40.00%	7	35.00%		9	45.00%	6	30.00%
1-4 weeks	5	25.00%	1	5.00%		4	20.00%	5	25.00%
Continuous	6	30.00%	0	0.00%		6	30.00%	2	10.00%
Did you suffer from headache before?									
No	0	0.00%	9	45.00%	0.003	1	5.00%	0	0.00%
Yes	20	100.00%	11	55.00%		19	95.00%	20	100.00%
If you have suffered from headache, mention the degree before?									
Mild	2	10.00%	17	85.00%	<0.001*	0	0.00%	18	90.00%
Moderate	5	25.00%	3	15.00%		3	15.00%	2	10.00%
Severe	13	65.00%	0	0.00%		17	85.00%	0	0.00%
Did you suffer from heaviness in the head when bending over before?									
No	1	5.00%	7	35.00%	0.048	2	10.00%	16	80.00%
Yes	19	95.00%	13	65.00%		18	90.00%	4	20.00%
If you suffered from heaviness, mention the degree before?									
Mild	0	0%	14	70.00%	<0.001*	0	0%	12	60.00%
Moderate	5	25.00%	5	25.00%		6	30.00%	8	40.00%
Severe	15	75.00%	1	5.00%		14	70.00%	0	0.00%
Did you complain of nasal secretions before?									
No	6	30.00%	11	55.00%	0.201	8	40.00%	15	75.00%
Yes	14	70.00%	9	45.00%		12	60.00%	5	25.00%
If you complained of nasal secretions, mention the degree before?									
Mild	4	20.00%	15	75.00%	<0.001*	2	10.00%	15	75.00%
Moderate	6	30.00%	4	20.00%		6	30.00%	5	25.00%
Severe	10	50.00%	1	5.00%		12	60.00%	0	0.00%
What was the color of secretions in the case of its existence before?									
Colorless	9	45.00%	7	35.00%	0.631	7	35.00%	4	20.00%
Yellow	7	35.00%	10	50.00%		8	40.00%	15	75.00%
Green	4	20.00%	3	15.00%		5	25.00%	1	5.00%
Did you complain of secretions at the back of the throat before?									
No	3	15.00%	9	45.00%	0.085	5	25.00%	13	65.00%
Yes	17	85.00%	11	55.00%		15	75.00%	7	35.00%

Table 3. (Continuation) Comparison of using medication after treatment among the three studied groups.

Symptoms	Hijama and medication			p*	Hijama with salt drops or analgesic only			p*	
	Before		After		Before		After		
	No.	%	No.		%	No.	%		
If you complained of secretions at the back of the throat, mention the degree before?									
Mild	3	15.00%	12	60.00%	0.002	1	5.00%	14	70.00%
Moderate	7	35.00%	7	35.00%		7	35.00%	6	30.00%
Severe	10	50.00%	1	5.00%		12	60.00%	0	0.00%
Did you suffer from sneezing before?									
No	1	5.00%	8	40.00%	0.023	6	30.00%	14	70.00%
Yes	19	95.00%	12	60.00%		14	70.00%	6	30.00%
If you suffered from sneezing, mention the degree before.									
Mild	3	15.00%	11	55.00%	0.497	4	20.00%	11	55.00%
Moderate	6	30.00%	9	45.00%		12	60.00%	9	45.00%
Severe	11	55.00%	0	0.00%		4	20.00%	0	0.00%
Did you suffer from cough that intensified during the night before?									
No	8	40.00%	15	75.00%	0.055	12	60.00%	19	95.00%
Yes	12	60.00%	5	25.00%		8	40.00%	1	5.00%
If you suffered from cough that intensified during the night, mention the degree before?									
Mild	4	20.00%	12	60.00%	0.002	5	25.00%	10	50.00%
Moderate	5	25.00%	7	35.00%		6	30.00%	10	50.00%
Severe	11	55.00%	1	5.00%		9	45.00%	0	0.00%
Did you suffer from red eyes before?									
No	6	30.00%	16	80.00%	0.004	12	60.00%	19	95.00%
Yes	14	70.00%	4	20.00%		8	40.00%	1	5.00%
If you suffered from red eyes, mention the degree before?									
Mild	4	20.00%	11	55.00%	0.002	2	10.00%	13	65.00%
Moderate	7	35.00%	9	45.00%		13	65.00%	7	35.00%
Severe	9	45.00%	0	0.00%		5	25.00%	0	0.00%
Did you suffer from nasal blockage before?									
No	1	5.00%	8	40.00%	0.023	1	5.00%	17	85.00%
Yes	19	95.00%	12	60.00%		19	95.00%	3	15.00%
If you suffered from nasal blockage, mention the degree before?									
Mild	2	10.00%	15	75.00%	<0.001*	7	35.00%	12	60.00%
Moderate	2	10.00%	4	20.00%		5	25.00%	8	40.00%
Severe	16	80.00%	1	5.00%		8	40.00%	0	0.00%
Did you suffer from weakness in the sense of smell before?									
No	8	40.00%	12	60.00%	0.342	15	75.00%	19	95.00%
Yes	12	60.00%	8	40.00%		5	25.00%	1	5.00%
If you suffered from weakness in the sense of smell, mention the degree before?									
Mild	3	15.00%	9	45.00%	0.074	5	25.00%	9	45.00%
Moderate	11	55.00%	9	45.00%		14	70.00%	11	55.00%
Severe	6	30.00%	2	10.00%		1	5.00%	0	0.00%

Table 3. (Continuation) Comparison of using medication after treatment among the three studied groups.

Symptoms	Hijama and medication				p*	Hijama with salt drops or analgesic only				p*
	Before		After			Before		After		
	No.	%	No.	%		No.	%	No.	%	
Did you suffer from weakness in the sense of taste before?										
No	15	75.00%	16	80.00%	0.753	19	95.00%	20	100.00%	0.490
Yes	5	25.00%	4	20.00%		1	5.00%	0	0.00%	
If you have suffered from weakness in the sense of taste, mention the degree before?										
Mild	1	5.00%	8	40.00%	0.003	2	10.00%	14	70.00%	<0.001*
Moderate	13	65.00%	12	60.00%		13	65.00%	6	30.00%	
Severe	6	30.00%	0	0.00%		5	25.00%	0	0.00%	
Did you complain from change in sound before?										
No	6	30.00%	13	65.00%	0.058	5	25.00%	19	95.00%	<0.001*
Yes	14	70.00%	7	35.00%		15	75.00%	1	5.00%	
If you have complained of change in sound, mention the degree before?										
Mild	2	10.00%	9	45.00%	0.003	4	20.00%	9	45.00%	0.019
Moderate	11	55.00%	11	55.00%		10	50.00%	11	55.00%	
Severe	7	35.00%	0	0.00%		6	30.00%	0	0.00%	
Did you complain of high temperature with sinusitis before?										
No	12	60.00%	17	85.00%	0.157	14	70.00%	18	90.00%	0.236
Yes	8	40.00%	3	15.00%		6	30.00%	2	10.00%	
If you have complained of high temperature, mention the degree before?										
Mild	5	25.00%	12	60.00%	0.007	3	15.00%	7	35.00%	0.036
Moderate	8	40.00%	8	40.00%		12	60.00%	13	65.00%	
Severe	7	35.00%	0	0%		5	25.00%	0	0%	
Did you suffer from fatigue due to sinusitis before?										
No	0	0.00%	5	25.00%	0.056	2	10.00%	15	75.00%	<0.001*
Yes	20	100.00%	15	75.00%		18	90.00%	5	25.00%	
If you suffered from fatigue, mention the degree before?										
Mild	0	0.00%	11	55.00%	<0.001*	2	10.00%	6	30.00%	<0.001*
Moderate	4	20.00%	7	35.00%		3	15.00%	11	55.00%	
Severe	16	80.00%	2	10.00%		15	75.00%	3	15.00%	
Did you suffer from insomnia due to sinusitis before?										
No	2	10.00%	7	35.00%	0.129	2	10.00%	17	85.00%	<0.001*
Yes	18	90.00%	13	65.00%		18	90.00%	3	15.00%	
If you suffered from insomnia, what was its degree before?										
Mild	2	10.00%	12	60.00%	<0.001*	2	10.00%	8	40.00%	<0.001*
Moderate	3	15.00%	7	35.00%		8	40.00%	12	60.00%	
Severe	15	75.00%	1	5.00%		10	50.00%	0	0.00%	
Did you suffer from bad breath before?										
No	12	60.00%	15	75.00%	0.499	13	65.00%	19	95.00%	0.048
Yes	8	40.00%	5	25.00%		7	35.00%	1	5.00%	

Table 3. (Continuation) Comparison of using medication after treatment among the three studied groups.

Symptoms	Hijama and medication				p*	Hijama with salt drops or analgesic only				p*
	Before		After			Before		After		
	No.	%	No.	%		No.	%	No.	%	
If you suffer from bad breath, mention the degree before?										
Mild	0	0.00%	14	70.00%	<0.001*	1	5.00%	11	55.00%	<0.001*
Moderate	12	60.00%	6	30.00%		15	75.00%	9	45.00%	
Severe	8	40.00%	0	0.00%		4	20.00%	0	0.00%	
0-Did you suffer from swelling around the eyes and cheeks before?										
No	5	25.00%	12	60.00%	0.055	10	50.00%	19	95.00%	0.005
Yes	15	75.00%	8	40.00%		10	50.00%	1	5.00%	
If you suffered from swelling around the eyes and cheeks, mention the degree before?										
Mild	4	20.00%	16	80.00%	<0.001*	1	5.00%	9	45.00%	<0.001*
Moderate	10	50.00%	4	20.00%		7	35.00%	11	55.00%	
Severe	6	30.00%	0	0.00%		12	60.00%	0	0.00%	
Did you suffer from nausea due to sinusitis before?										
No	10	50.00%	15	75.00%	0.191	9	45.00%	19	95.00%	<0.001*
Yes	10	50.00%	5	25.00%		11	55.00%	1	5.00%	
If you suffered from nausea, mention the degree before?										
Mild	2	10.00%	14	70.00%	<0.001*	3	15.00%	6	30.00%	0.025
Moderate	7	35.00%	6	30.00%		11	55.00%	14	70.00%	
Severe	11	55.00%	0	0.00%		6	30.00%	0	0.00%	
Did you feel pain in the forehead before?										
No	3	15.00%	9	45.00%	0.085	1	5.00%	17	85.00%	<0.001*
Yes	17	85.00%	11	55.00%		19	95.00%	3	15.00%	
If you felt pain in the forehead, mention the degree before?										
Mild	3	15.00%	14	70.00%	<0.001*	2	10.00%	8	40.00%	<0.001*
Moderate	6	30.00%	6	30.00%		4	20.00%	12	60.00%	
Severe	11	55.00%	0	0.00%		14	70.00%	0	0.00%	
Did you feel pain in your cheeks before?										
No	6	30.00%	10	50.00%	0.333	4	20.00%	19	95.00%	<0.001*
Yes	14	70.00%	10	50.00%		16	80.00%	1	5.00%	
If you felt pain in your cheeks, mention the degree before?										
Mild	1	5.00%	16	80.00%	<0.001*	3	15.00%	13	65.00%	<0.001*
Moderate	8	40.00%	4	20.00%		6	30.00%	7	35.00%	
Severe	11	55.00%	0	0.00%		11	55.00%	0	0.00%	
Did you feel pain in the sides of the nose before?										
No	3	15.00%	8	40.00%	0.157	5	25.00%	18	90.00%	<0.001*
Yes	17	85.00%	12	60.00%		15	75.00%	2	10.00%	
If you felt pain in the sides of the nose, mention the degree before?										
Mild	1	5.00%	15	75.00%	<0.001*	0	0.00%	10	50.00%	<0.001*
Moderate	6	30.00%	5	25.00%		6	30.00%	10	50.00%	
Severe	13	65.00%	0	0.00%		14	70.00%	0	0.00%	

Table 4. Comparison of using medications before and after Al-Hijama treatment.table.

	The Use of Drug Therapy After		Groups						Chi-square Test	
			Hijama and Medication		Medication Only		Hijama with Salt Drops or Analgesic Only			
			No.	%	No.	%	No.	%		
Did you need to use medication to relieve your symptoms after?										
No	10	50.00%	0	0.00%	20	100.00%			40.000	<0.001
Yes	10	50.00%	20	100.00%	0	0.00%				
Did you use antibiotics drug to relieve symptoms after?										
No	18	90.00%	10	50.00%	20	100.00%			17.500	<0.001
Yes	2	10.00%	10	50.00%	0	0.00%				
Did you use antihistaminic drug to relieve symptoms after?										
No	16	80.00%	2	10.00%	20	100.00%			38.469	<0.001
Yes	4	20.00%	18	90.00%	0	0.00%				
Did you use nasal spray (antihistamine or cortisone) to relieve symptoms after?										
No	15	75.00%	5	25.00%	20	100.00%			26.250	<0.001
Yes	5	25.00%	15	75.00%	0	0.00%				
Did you use analgesics to relieve symptoms after?										
No	16	80.00%	6	30.00%	19	95.00%			21.412	<0.001
Yes	4	20.00%	14	70.00%	1	5.00%				
Did you use salty solution drops or spray to relieve symptoms after?										
No	19	95.00%	15	75.00%	20	100.00%			7.778	0.020
Yes	1	5.00%	5	25.00%	0	0.00%				
The extent of improvement you felt after the use of drug therapy after.										
No improvement	5	25.00%	0	0.00%	4	20.00%				
Mild	4	20.00%	9	45.00%	16	80.00%			50.684	<0.001
Moderate	1	5.00%	11	55.00%	0	0.00%				
Complete	10	50.00%	0	0.00%	0	0.00%				
Did you use any of the complimentary treatments to reduce your symptoms after?										
No	10	50.00%	14	70.00%	12	60.00%			1.667	0.435
Yes	10	50.00%	6	30.00%	8	40.00%				

that two groups, treated with Al-Hijama, decreased their use of medication as compared to those treated with medication only. Furthermore, Table 4 shows that both groups treated with Al-Hijama exhibited dramatic decreases in using medication from before to after treatment; specifically, 50% no longer required medicine, the rate of antibiotics use decreased from 60% to 10%, the rate of antihistamine use decreased from 80% to 20%, the rate of antihistamine- or cortisone-containing nasal spray use decreased from 80% to 25%, the rate of analgesic use decreased from 85% to 20%, and the overall rate of complete improvement after medication use increased from 5% to 50%. These results suggested that Al-Hijama has a significantly positive therapeutic effect when used either as an adjuvant or as a main treatment for sinusitis.

Previous studies have reported findings related directly or indirectly to the subject of current study. In 2003, Zijlstra *et al.*^[19] investigated the effect of acupuncture on inflammatory diseases. In addition, complementary medicine practitioners frequently used acupuncture when treating patients with chronic sinus and nasal symptoms, as demonstrated in several randomized controlled trials. Furthermore, both acupuncture and dry cupping have been recommended as adjunct therapies for allergic rhinitis^[20,21].

Studies, using Al-Hijama for patients with chronic conditions, have reported promising positive effects on the health-related quality of life^[22]. USA Food and Drug Administration has approved the use of leeches (a type of Al-Hijama) as a means of treatment^[23] and Al-Hijama has also been used to treat inflammatory and allergic diseases and in removing the resulting congestion^[24]. Therefore, Al-Hijama appears to be a potentially useful mode of treatment, as it is an effective, simple, safe, inexpensive, rapid, and socially acceptable method for reducing sinusitis symptoms and related drug use. The current study is distinct from previous studies that discussed Al-Hijama and acupuncture in terms of the effects and roles of similar health problems but did not focus on sinusitis. Regarding limitations, 90% of selected patients are female so there is a potential of bias. Cupping was used with normal saline nasal drops five times a day with analgesic as needed to give synergetic effect. Acute cases and chronic mixed should be considered for analysis but mainly depending on patient's feedback on questionnaire, which still show that the effect of improvement of symptoms is much better with Al-Hijama. The contribution of this study is emphasized from the significant improvement of

symptoms using Al-Hijama based on patient's feedback on questionnaires.

Conclusion

This study demonstrated the marked superiority of Al-Hijama therapy, which is effective, simple, safe, affordable and not associated with complications, when used correctly, as an adjuvant or alternative treatment for the treatment of sinusitis symptoms. Al-Hijama enhances immune activity and promotes the removal of CPS, and additionally enhances the therapeutic effects of medications. Al-Hijama is expected to benefit every patient; although, the degree of health benefits may range from an improvement to a cure. It is expected that health officials will officially incorporate Al-Hijama into their health care regimens as an adjuvant or alternative treatment for sinusitis patients, as it will reduce the inappropriate use of antibiotics and other medications. Medical staff should be educated about the therapeutic role of Al-Hijama, and Al-Hijama should be practiced by a qualified licensed practitioner (*i.e.*, health official) in hospitals or clinics when indicated or advised. Further investigations are needed to confirm and verify the beneficial effects of Al-Hijama on the therapeutic outcomes of many diseases, including sinusitis.

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Ethical Statement

This study was conducted according to the ethical principles of the Declaration of Helsinki. The Committees of the Faculty of Medicine at KAU, Jeddah, Kingdom of Saudi Arabia approved the initiation of the outpatient cupping clinic at KAUH. The proposal of the current intervention study was approved by Institutional Review Board of KAUH, and the results were displayed periodically. The trial is registered with the National Committee of Biological and Medical Ethics (Number: HA-02-J-008). Consent was obtained

from each patient after completing an interview at the Prophetic Medicine Clinic. Patients were free to withdraw from the research at any time without any effects to the provision of services.

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مقارنة بين سلامة وفعالية الحجامة والعلاج الطبي التقليدي لإلتهاب الجيوب الأنفية (I) نبذة مختصرة

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المستخلص. تهدف هذه الدراسة إلى تقييم سلامة وفعالية استخدام الحجامة (الكاسات) إما كمساعد أو بديل للعلاج الدوائي التقليدي بين المرضى البالغين المصابين بالتهاب الجيوب الأنفية. أجريت تجربة عشوائية سريرية ذات شواهد في عيادة أبحاث الطب النبوي ، مستشفى جامعة الملك عبد العزيز ، جدة ، المملكة العربية السعودية. استخدمت الدراسة تقنية عشوائية بسيطة. تم تقسيم ٦٠ مريضا يعانون من التهاب الجيوب الأنفية المزمنة أو الحادة المتكررة بالتساوي على ٣ مجموعات. استخدم للمجموعة الأولى العلاج بالحجامة بالإضافة للعلاج الدوائي ، استخدم للمجموعة الثانية الحجامة بالإضافة إلى محلول الأنف الملحي ومسكن خفيف عند الحاجة ، وإستخدم للمجموعة الثالثة العلاج الدوائي فقط بانتظام. تمت دراسة تأثير الحجامة على أعراض التهاب الجيوب الأنفية ، وعلى حاجتهم لإستخدام الأدوية. وأظهرت النتائج أن إستخدام الحجامة كعلاج بديل أو مساعد للعلاج الدوائي كانت أفضل من العلاج الدوائي التقليدي فقط وذلك فيما يتعلق بتقليل تكرار الأعراض وحدتها ومدتها وكذلك فى الحاجة لاستخدام العلاج الدوائي. العلاج بالحجامة فعال سهل إقتصادي مقبول وآمن عند استخدامه بشكل صحيح. ومن المتوقع أن يستفيد جميع المرضى المصابين بالتهاب الجيوب الأنفية من الحجامة.