Hijama improves overall quality of life in chronic renal failure patients: A pilot study

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Abstract: Present study assesses the therapeutic effectiveness of Hijama (blood letting) inpatients of chronic renal failure undergoing hemodialysis for past several years with almost no urinary output.24 patients from Sindh Government Qatar Hospital Karachi were selected randomly under going dialysis 2-3 times/week for an average of 3 years under supervision of Dr. Khurram Danial, in-charge nephrologist at dialysis Centre Sindh Government Qatar Hospital Karachi after the written consent from patients. Each patient was subjected to Hijama session once a week after dialysis for a period of one year in a nearby hospital Aligarh Shifa with the consent of the ethical committee of the hospital. Serum urea, creatinine, complete blood count and electrolytes were determined prior to hijama as baseline values and were again recorded on monthly basis for twelve months of Hijama sessions. The patient's feedback regarding quality of life after each hijama session shows that almost all the patients reported a significant recovery from severe fatigue which they used to face during the interval between the dialysis sessions. There was significant recovery in all patients from anorexia and insomnia with the improvement in quality of life as compared to patients not undergoing hijama. Both systolic and diastolic blood pressures were shifted towards normal in almost all patients after Hijama. Serum Creatinine level was declined significantly, while electrolyte and hematological parameters were also improved significantly. The hemoglobin of all patients undergoing hijama was maintained near normal without any blood transfusion, which was frequently needed in patients not undergoing hijama sessions. There was insignificant improvement in Urinary output in 2 out of 24 patients. Results of the present study suggest that hijama may be performed safely in patients of chronic renal failure on dialysis with overall improvement in quality of life, since there was reduction in fatigue, improvement in appetite, quality of sleep and platelet count.

Keywords: Hijama, cupping therapy, hemodialysis, chronic renal failure, nephropathy.

INTRODUCTION

Chronic renal failure (CRF) is a condition, which develops slowly over a long period of time when renal function is gradually lost. If the situation is not managed by fluid replacement or kidney transplant, the disorder is usually fatal. Initially, it is manifested only as a biochemical abnormality, but eventually there is loss of excretory, metabolic and endocrine functions of the kidney that leads to the clinical symptoms of renal failure referred as uremia. End-stage renal failure (ESRF) is likely to cause death without renal replacement therapy (National Kidney Foundation, 2002).

The elevated levels of serum urea and creatinine are usually considered as biochemical indicators of CRF i.e. serum urea >50gm/dl and creatinine greater than 1.2 gm/dl are indicators of CRF. The ESRF patients usually show the serum creatinine around 10gm/dl and serum urea levels around 100 gm/dl. The important causes of CRF are shown in table 1 (National Kidney Foundation 2002).

Hijama, also known as bloodletting or wet cupping therapy, is an alternative mode of treatment, which relies solely on removal of subcutaneous blood (which is presumably the stagnant, toxin containing blood), and hence is effective in treating many conditions including low back pain, acute gouty arthritis, asthma, cardiac arrhythmia, insomnia, neck pain and migraine (Ahmadi *et al.*, 2008).

The effectiveness of Hijama in patients of chronic renal failure has never been examined; hence this study was designed to investigate its efficacy in CRF.

MATERIALS AND METHODS

This study was conducted under supervision of Dr. Khurram Danial, Incharge Nephrologists at Dialysis Centre Sindh Government Qatar Hospital, Karachi. Twenty-four patients were randomly selected from the Hospital under going dialysis 2-3 times/week for at least three years after their written consent. Selected patients were subjected to hijama session in a nearby hospital Aligarh Shifa once a week after dialysis for a period of one year with the consent of the ethical committee of the hospital. Serum urea, creatinine, complete blood count and electrolytes were determined prior to hijama as baseline values and were again recorded on monthly basis for twelve months of Hijama sessions.

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Table 1: Causes of renal failure

Disease	Proportion of ESRF %	Comments
Congenital & Inherited	5	Poly cystic Kidney disease
Renal artery stenosis	5	
Hypertension	5-25	Racial or diagnostic differences
Glomerular Diseases	10-20	IgA nephropathy is most common
Interstitial Diseases	5-15	
Systemic Inflammatory Diseases	5	SLE, Vasculitis
Diabetes Mellitus	20-40	Large racial and national differences
Unknown	5-20	

Inclusion criteria

Patients only suffering from chronic/end stage renal failure and undergoing 2-3 sessions/week for dialysis was selected randomly.

Exclusion criteria

Patients with co morbid diseases and hemoglobin level below 7g/dl were excluded from the study; moreover patients, whose condition was not stable, particularly having high temperature, were also not included in the study.

Procedure of hijama

Hijama was performed only once a week after a session of dialysis. 2-4 cups with a capacity of about 20ml were applied in a single session as needed. The patients were advised not to eat 3 hours before Hijama and avoid bath at least 3 hours before Hijama particularly in winter.

Hijama was applied to each patient on selected sites in following steps:

1. The selected site on the body was cleansed with 75% alcohol swabs.
2. A sterilized cup with a capacity of about 20 ml was placed on the site and vacuum was created by a manual vacuum pump, enough to adhere the cup to the skin and create a suction force on the site.
3. The cup was removed after 5 minutes to make superficial incisions with the help of a sterilized surgical blade and the cup was placed again on the site as described above.
4. 5-10 minutes later the cup was removed again and subcutaneous blood collected in the cup was safely discarded before the cup was destroyed.
5. The incised area under the cup was cleaned with medicated wipes and honey was applied, then sterilized gauze was placed and secured with a tape bandage (Bilal *et al.*, 2011).

Initially hijama was performed at two sites C7 and T2 at the back, which are the usual starting points for hijama. Altogether twenty-five points were repeatedly covered during the sessions of hijama according to the Meridian system of acupuncture for kidneys. However a maximum of four points were selected in a single session of hijama located at the level of kidney, lateral and medial fronts of the knees, above ankles and on the dorsal surface of feet just above the big toe (Xia *et al*., 2010).

The average volume of subcutaneous blood drawn was nearly 5ml/cup. The weekly sessions of hijama were continued for a period of one year and during this period biochemical parameters and arterial blood pressure were recorded once a month before dialysis, moreover health related quality of life parameters e.g. insomnia, anorexia and fatigue etc. were also recorded before and after hijama. Six months report of biochemical investigations of blood samples collected through venipuncture prior to hijama was also recorded and used as control against the parameters measured after hijama in blood samples collected through venipuncture.

STATISTICAL ANALYSIS

Paired t- test was performed to evaluate the statistical significance of the results before and after hijama values using Minitab software, p values <0.05 were considered significant and $p<0.001$ as highly significant in comparison to control.

RESULTS

Biochemical parameters

Table 2 reveals the comparison of urea, creatinine and glucose of blood samples before and after hijama. Blood samples obtained after hijama showed a significant decline in serum creatinine level of 7.57±0.25meq/L as compared to the serum creatinine level before hijama i.e. 8.52±0.31meq/L There was insignificant rise in serum urea level in blood samples after hijama i.e.132.60±3.65 mg/dl as compared to the serum urea level before hijama i.e. 128.20±3.94 mg/dl Blood samples obtained after hijama showed an insignificant rise in serum Glucose level i.e. 98.48±2.25mg% as compared to the serum Glucose level before hijama i.e. 93.52±2.44mg%.

Electrolytes

Table 3 shows the comparison of serum electrolytes level before and after hijama. Blood samples obtained after hijama showed an insignificant rise in serum calcium

Table 2: Comparison of biochemical parameters

Parameters	Normal values	Before Hijama	After Hijama
Urea (mg/dl)	10-50	128.20±3.94	132.60±3.65
Creatinine (meq/L)	0.6-1.5	8.52±0.31	7.57±0.25*
Glucose (mg %)	Up to 200	93.52±2.44	98.48±2.25

Table 3: Comparison of electrolytes

Parameters	Normal values	Before Hijama	After Hijama
Calcium (mg%)	8.50-10.4	9.12±0.01	9.45±0.11
Sodium (meq/L)	136-140	141.02±0.55	140.10±0.93
Potassium (meq/L)	3.60-5.2	4.38±0.06	4.14±0.05*
Chloride (meq/L)	98-107	97.71±1.41	100.63±0.63*

Table 4: Comparison of hematological parameters

Parameters	Normal values	Before Hijama	After Hijama
Hemoglobin (gm/dl)	11.50-16.5	10.32± 0.17	10.40±0.18
WBC ($x10^9$/L)	3.50-10.0	6.73±0.16	6.30±0.14
Platelet ($x10^9$/L)	100-400	146.25± 3.61	174.75±7.26**
HCT (%)	35-55	31.34± 0.58	31.80±0.61

Table 5: Comparison of arterial blood pressure

No.	Parameter	Normal values	Before Hijama	After Hijama
1	Systolic blood pressure (mm of Hg)	120	144.00±3.43	131.52±3.52*
2	Diastolic blood pressure (mm of Hg)	80	87.98±2.00	82.92±2.23

Table 6: Comparison of health related quality of life parameters

No.	Parameter	Scale Worst to Best	Before Hijama	After Hijama
1	Insomnia	0-10	2.17±0.21	6.25±0.32**
2	Anorexia	0-10	2.13±0.14	6.08±0.31**
3	Fatigue	0-10	2.58±0.16	6.58±0.24**
4	Quality of Life	0-10	1.83±0.14	5.67±0.15**
5	Physical Strength	0-10	1.71± 0.13	5.37±0.23**

n=24; Average values ±S.E.M, *p value<0.05: Significant and **p<0.001: Highly significant as compared to control

level i.e. 9.45±0.11mg% as compared to the serum calcium level before hijama i.e. 9.12±0.01mg%. Blood samples obtained after hijama showed an insignificant decline in serum sodium level i.e. 140.10±0.65meq/L as compared to the serum sodium before hijama i.e. 141.02 ± 0.55 meq/L.

Blood samples obtained after hijama showed a significant decline in serum potassium level i.e. 4.14±0.05meq/Las compared to the serum potassium before hijama i.e. 4.38± 0.06meq/L. Blood samples obtained after hijama showed an insignificant rise in serum chloride level i.e.100.63 ± 0.63meq/L as compared to the serum chloride level before hijama i.e. 97.71±1.41meq/L.

Hematological Parameters

Table 4 reveals the comparison of hematological parameters before and after hijama. Blood samples obtained after hijama showed an insignificant rise in hemoglobin level i.e.10.40 ±0.18gm/dl as compared to the hemoglobin level before hijama i.e.10.32±0.17 gm/dl.

Blood samples obtained after hijama showed an insignificant decline in WBC count i.e. 6.30±0.14 $x10^9$/L as compared to WBC count before hijama i.e.6.73±0.16 $x10^9$/L. Blood samples obtained after hijama showed a significant rise in platelet count i.e. 174.75±7.26 $x10^9$/Las compared to platelet count before hijama i.e.146.25±3.61 $x10^9$/L. Blood samples obtained after hijama showed an insignificant rise in hematocrit i.e. 31.80±0.61% as compared to hematocrit before hijama i.e.31.34±0.58%.

Arterial blood pressure

Table 5 reveals the comparison of systolic and diastolic blood pressure of the patients before and after hijama. Systolic blood pressure has declined significantly after hijama i.e. 131.52±3.52 mm of Hg as compared to the systolic blood pressure before hijama i.e. 144.00±3.43

mm of Hg. Diastolic blood pressure has declined insignificantly after hijama i.e. 82.92±2.23mm of Hg as compared to the diastolic blood pressure before hijama i.e. 87.98±2.00mm of Hg.

Health related quality of life parameters

Table 6 reveals the comparison of health related quality of life parameters before and after hijama such as insomnia, anorexia, fatigue and physical strength. There was overall highly significant improvement in all the parameters.

DISCUSSION

The study was aimed to evaluating the therapeutic effectiveness of hijama in CRF/ESRF patients. The objective as well as the subjective parameters selected for analysis is of clinical importance in the patients of chronic renal failure maintained on dialysis.

There was 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 hijama, since patients with CRF are unable to maintain normal levels of creatinine, urea, sodium, potassium, chloride and hematocrit (Howard, 1989). Random blood glucose was also increased significantly, which might be one of the reasons for decrease in fatigue. Increase in blood glucose may be due to improvement in appetite (American Diabetes Association, 2006).

Sodium level is crucial in the patients of renal failure, before hijama it was slightly higher than normal, however after hijama sodium levels were slightly reduced towards normal suggesting an improvement in the homeostasis and hence renal function (Pohl *et al.,* 2013).

In patients undergoing dialysis chloride was below normal range before hijama, however there was significant increase in its level after hijama, since the level of chloride is chiefly maintained by kidneys, hence the enhancement in its level is an indicator for improvement in renal function (Donald 2000).

There was a slight improvement in hemoglobin level although statistically insignificant but important clinically, since removal of blood during hijama instead of reducing hemoglobin level resulted in increased hemoglobin. Although in patients of ESRF erythropoietin is not produced adequately and hemoglobin remains at lower side. However this result suggests that renal function has improved which may be related to the improved metabolism, electrolytes and appetite (Aapro and Link, 2008).

Another important improvement observed in patients after hijama was a highly significant increase in platelet count which demonstrates that hijama is effective in reducing thrombocytopenia frequent in CRF/ESRF patients undergoing hemodialysis (Warkentin *et al.,* 2007).

Hypertension is a very common cause of chronic renal failure (National Kidney Foundation, 2002). Sometimes hypertension is not the cause of CRF but an outcome of CRF, however there was significant decline in systolic blood pressure, which endorses the hypothesis that renal function has improved after hijama. Though diastolic blood pressure also declined, but was statistically insignificant; however from clinical point of view even minimal fluctuations in diastolic blood pressure are very important.

The significance of subjective changes can be understood by observing the quality of life of ESRF patients. When the patients of chronic renal failure are advised dialysis, confidence of the patients falls instantly and a feeling of uncertainty and hopelessness ensues while maintained on dialysis for years to come. The main reasons behind low morale are the physiological adverse effects of dialysis e.g. severe fatigue, weakness, insomnia and anorexia common in ESRF patients (Evans *et al.,* 1985; Szabo *et al.,* 1997). However patients undergoing hijama reported reduction in all above mentioned physiological adverse effects and felt energetic, which helped in improving confidence and social relationship.

CONCLUSION

The results of this study suggest hijama to be an effective supportive therapy in the patients of chronic renal failure maintained on dialysis, since hijama caused improvement in biochemical parameters, electrolytes and hematological parameters. More importantly, it also resulted in improving quality of life of patients through relieving insomnia, fatigue, anorexia and overall morale of the patient. This alternative mode of treatment also seems to be safe since no side effects were reported in patients under going hijama.

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