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Research Article

Comparative Clinical Study of *Hijama bil shart* (Wet Cupping) and *Hijama bil nar* (Fire Cupping) in *Irq al- nasa'* (Sciatica)

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Abstract

Background: 'Irq al nasa' an Arabic term to which we call 'Sciatica' is clinically defined as the pain along with Sciatic nerve and its component nerve roots. Pain may vary from mild ache to severe burning or shooting, or tingling in nature. According to Unani literature, sciatica (Irq al-nasa') may be caused by accumulation of morbid matter or phlegm (*Khilt balgham galeez*) in the affected area. "*Hijama*" means "to suck" is a Unani regimental method of treatment, which helps to evacuate the morbid materials from the body and reassure the blood flow to the site of *Hijama*.

Objective: This study aims to compare the efficacy and safety of *hijama bil-shart* (wet cupping) and *hijama bil-nar* (fire cupping) in the management of sciatica.

Methods: In an open, randomized, controlled study out of 70 sciatica patients, 60 were randomly allocated in test and control group, 30 in each. The test group received wet cupping and control group were applied with fire cupping at 0th, 15th, 30th and 45th day.

Results: While observation of visual analogue scale for pain, limb movement, straight leg raising test, deep tendon reflexes at ankle and knee joint, and stiffness along with Bragard's sign, the intergroup comparison of pre and post treatment results showed wet cupping is more effective than fire cupping (p<0.001).

Conclusion: *Hijama bil-shart* (wet cupping) is more effective than *hijama bil-nar* (fire cupping) in managing sciatica. Both the therapies were generally well tolerated.

Keywords: Cupping, Hijama, Sciatica, Unani.

1. INTRODUCTION

'Irq al nasa' an Arabic term to which we call 'Sciatica' is clinically defined as the pain along with Sciatic nerve and its component nerve roots.¹ Sciatic pain mostly occurs unilaterally and may start suddenly with physical activity or has a gradual onset. Pain may be aching and sharp, may vary from mild ache to severe burning or shooting, or tingling in nature which is radiating along a broad line from the middle or lower buttock up to dorsolateral aspect of thigh in case of L5 nerve root compression, anteriolaterally in case of L4 compression and posteriorly in thigh when compression is at S1 root.^{2, 3} Sciatica may be acute, sub-acute or chronic. Low back pain & sciatica is a most common health problem around the world & major cause of disability which affect performance at work & general wellbeing. It imposes a high economic burden on individuals, families, society, industry and the Government. Being a relatively common disorder the prevalence of sciatica among the normal population varies between 2 % & 5 %.⁴ The lifetime prevalence of true sciatica has been reported as 5.3% in men and 3.7% in women.⁵ However, there are a wide range of Conditions that cause sciatica by irritating or compressing the SciaticNerve, these are; herniated disc, piriformis syndrome, stenosis, trauma,

osteoarthritis, spondylolisthesis, lumber plexitis, osteophyte around the sacro-iliac joint, disc rupture with compression of L4, L5, or S1 root, biceps femoris hematoma, tumors of the spinal column, pelvic and gynecological disease.^{3, 6} According to Unani literature, sciatica (Irq al-nasa') may be caused by accumulation of morbid matter in the joint,⁷ distemperament (*Sue mijaz*), Phlegm (*Khilt Balgham Galeez*),⁸ or raw phlegm (*Balgam khām*) mixed with blood and black bile.⁹ Sciatica is diagnosed by various clinical tests like straight leg raising test (SLRT), Braggard's test, femoral nerve stretch test, Crossover sign, and Bowstring sign. In Unani system of medicine sciatica has been managed from centuries using different remedies and regimental therapies, yet comprehensive scientific studies are still needed for evaluation of such treatment modalities. *Hijama* is one of such modalities performed since time immemorial in different ways with different importance among different geographic regions. "*Hijama*" that means "to suck" is a Unani regimental method of treatment which is carried out by application of a cup-shaped glass or plastic vessel on the body surface, creating vacuum by fire or by special suction apparatus, in order to evacuate the morbid materials, or to divert the material from the unhealthy part or to return a displaced organ to its natural position or to reassure the blood flow to the site of *Hijama*. In

fire cupping (hijama bil-nar) vacuum is created inside a glass cup, before applying, using fire. In case of wet cupping for which term hijama was originally designed and now appropriately called as hijama bil-shart a plastic cup is applied using different sucking apparatus to create vacuum and few incisions are given at the site prior to sucking to remove the morbid material. This type of hijama is considered to be more superior and is enormously narrated in Islamic and Greco-Arab medicinal literature.¹⁰ Various theories which explain the mechanism of action in hijama include; Pain-Gate Theory (PGT), Diffuse Noxious Inhibitory Controls (DNICs), Reflex Zone Theory, Release of Nitric Oxide Theory, Activation of Immune System Theory, Blood detoxification theory, Chinese theory, and Taibah theory.^{11, 12} In the much demanded current study, comparison of the safety and efficacy of wet cupping (hijama bil-shart) and fire cupping (hijama bil-nar) in Sciatica (Irq al-nasa') was evaluated.

2. MATERIAL AND METHODS

An open, randomized, controlled study comparing safety and efficacy of *Hijama bil shart* (wet cupping) and *Hijama bil nar* (fire cupping) in *Irq al-nasa'* (sciatica)" was conducted on patients attending OPD/ IPD of Regional Research Institute of Unani medicine (RRIUM), Srinagar J&K. A Comprehensive Protocol was framed and approval was obtained from the Institutional Ethics Committee (IEC) of RRIUM, Srinagar. The study was done within the ethical standards of IEC and declaration of Helsinki. After taking written consent, sciatica patients were selected and allocated randomly into control and test group. Diagnosis and selection of the cases was made on the basis of clinical features, along with other laboratory parameters (LFT, KFT, CBC, ESR, blood sugar Fasting & Post prandial, BT, CT, HbsAg, HIV, ECG, and X-ray (L-S spine).

2.1 criteria for selection of cases

a) Inclusion criteria

Patients Irrespective of the gender between 20 to 65 years of age, complaining of radiating shooting pain from back to anterior thigh muscles, posterior thigh muscles, Buttock, calf muscle, posterolateral or anterolateral foot, Ankle, and toe.

b) Exclusion criteria

- Patients below 20 and above 65 years of age
- Patients who fail to give consent

- Traumatic, infective, neoplastic conditions of spine
- Pregnancy
- Any chronic systemic illness, such as chronic liver disease, chronic kidney disease, cardiac illness, pulmonary disease, diabetes mellitus, hypertension, mental illnesses
- Radiologically evident cases of spinal injury, deformity etc
- Blood dyscrasias

2.2 Sample Size and Allocations of subjects: 60 patients, 30 in each test (A) and control (B) group.

2.3 Intervention

Test group (Group A) was applied with Hijama Bil Shart (Wet cupping) and control group (Group B) with Hijama Bil Nar (Fire Cupping) by two medium sized (No.2) cups on either side of lumbosacral spine and one large sized cup (No.1) on the calf muscle on the affected side were applied. Each group received respective therapy using two Cups on either side of lumbosacral spine and one Cup on the calf muscle on the affected side for 15 to 20 minutes. In group A amount of blood drained by each cup was approximately 10 ml in each sting. In both the groups (test and control) hijama cups were applied four times each at 0 day, 15th day, 30th day and 45th day.

2.4 Assessment

After the completion of study protocol duration of 45 days, the improvement in both group A and group B was assessed with the help of Visual Analogue Scale (VAS 0–10 Point Scale) for pain (0 for 'no' and 10 for 'agonizing pain'), muscle stiffness (present or absent), joint mobility scale (graded as 0 for free voluntary movement, 1 for partial voluntary movement, 2 for free passive movement, and 3 for partial passive movement), SLRT (angle between raised leg and horizontal is scored as 0 if >90°, 1 if 71° -90°, 2 if 51° -70°, 3 if 31° -50° and score 4 is given if angle is <30°), Bragard's sign (positive or negative), and Deep tendon reflexes at knee and ankle joints (scored as 0 when reflexes are absent, 1 for hypoactive, 2 for normal, 3 for hyperactive, 4 for hyperactive with clonus, and 5 for sustained clonus). 'Baseline' and 'after study' results were compared in both the groups (intragroup comparison) as well as between the groups (intergroup comparison), to observe the improvement in subjective and objective parameters. Various safety parameters were also checked before and after study to evaluate the safety of the regimes. The patients' summary is given by consort flow diagram below in figure 1.

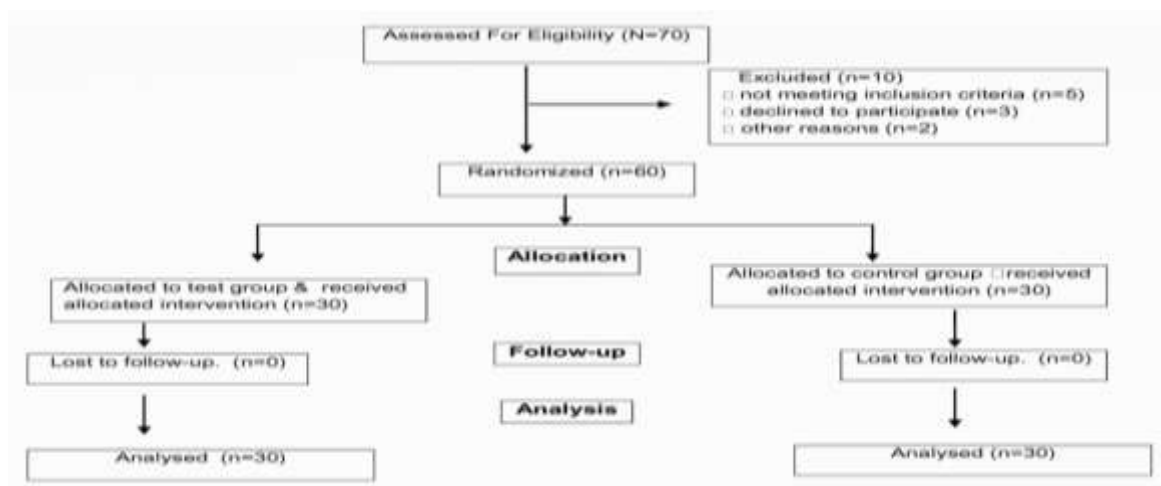


Figure 1: Patients' Summary (CONSORT Flow Diagram)

2.5 Data analysis

Data was entered in a spread sheet and then exported to data editor of SPSS version 20.0 and Graph pad prism software. The continuous variables were expressed as mean \pm standard deviation (SD) and categorical variables were expressed in terms of frequency and percentage. Students' independent t-test was employed for inter-group (test group vs. control group) analysis of data, and for intra-group analysis paired t-test was applied. Chi-square test was employed for comparison of categorical variables. The graphical representation of data was presented by means of bar and line graphs. A p-value of less than 0.05 was considered statistically significant.

3. RESULTS

In this study the mean age of the patients in group A and group B was 43 and 41 years respectively in which overall 58.3% were males and 41.7% were females. Among the male population majority (25%) were from business profession and among female population majority (33.3%) were house wives. Similarly keeping Kappu-Swami socioeconomic scale into

consideration, out of 60 patients only 5 (8.6%) belonged to upper class, 22 (36.6%) belonged to upper-middle class, 21 (35%) from lower-middle class, 8 (13.8%) from upper-lower class and 4 (6.9%) belonged to lower class. Interestingly 95% patients were married and only 5% were unmarried. While assessing temperament (mizaj) of patients 35% were having sanguine temperament (damvi al-mizaj), 48.3% with phlegmatic temperament (balghami al-mizaj), 6.7% with bilious (safrawi al-mizaj) and 10% were having melancholic temperament (sawdawi al-mizaj).

Interestingly majority of the patients (73.3%) were having a positive family history. Furthermore, in group A most of the cases (93.33%) were suffering from sciatica associated with lumbar spondylosis as observed on X-ray findings and after completion of trial only 30% of patients sustained lumbar spondylosis. Similarly, in group B 90% patients were having associated lumbar spondylosis which was found to persist in 60% of patients only after treatment (table 1). Overall improvement in X-ray findings of group A was statistically significant as compared to group B ($p < 0.001$).

X-ray findings	Group A		Group B	
	BT	AT	BT	AT
Lumber spondylosis	28 (93.33%)	9 (30.00%)	27 (90.00%)	18 (60.00%)
Normal	1 (3.33%)	20 (66.66%)	1 (3.33%)	12 (40.00%)
Kyphoscoliotic deformed spine	1 (3.33%)	1 (3.33%)	0 (0.00%)	0 (0.00%)
Lumber spondylolisthesis	0 (0.00%)	0 (0.00%)	1 (3.33%)	0 (0.00%)
Lumber spondylosis with Spondylolisthesis	0 (0.00%)	0 (0.00%)	1 (3.33%)	0 (0.00%)

One of the parameters i.e., measuring score of shooting pain using VAS scale was performed at every follow up of 15 days and the improvement observed in both the groups was recorded and shown in table 2.

Day	Group	Mean	Standard deviation	Mean difference	P-value (group A vs group B)
Bl (base line) (0 th day)	A	9.233	0.7279	0.034	0.859
	B	9.200	0.7144	0.034	
F1 (follow-up 1 st) (15 th day)	A	7.967	0.7184	-0.734	0.001
	B	8.700	0.6513	-0.734	
F2 (follow-up 2 nd) (30 th day)	A	7.200	0.7611	-0.634	0.003
	B	7.833	0.8339	-0.634	
F3 (follow-up 3 rd) (45 th day)	A	5.267	0.8683	-1.600	0.001
	B	6.867	0.9732	-1.600	

The mean and standard deviation of mean of 'difficulty in limb movement' in group A at base line and after completion of treatment protocol was 1.77 ± 1.04 and 0.17 ± 0.38 respectively. Likewise, the mean and standard deviation of 'difficulty in limb movement' mean in group B at base line and after completion of treatment protocol was 1.30 ± 0.87 and 0.40 ± 0.56 respectively (table 3).

Group	Spot	Mean	Std. Deviation	P-value
Group A	BT	1.77	1.04	0.001
	AT	0.17	0.38	
Group B	BT	1.3	0.87	0.001
	AT	0.40	0.56	

60% of patients in group A and 50% in group B were having calf muscle stiffness before treatment which gets reduced to 3% and 6% respectively post treatment (table 4).

Stiffness	Group A		Difference	P-value
	BT	AT		
Present	18 (60%)	3 (10%)	15 (50%)	P<0.001
Absent	12 (40%)	27 (90%)		
Stiffness	Group B		Difference	P-value
	BT	AT		
Present	15 (50%)	6 (20%)	9 (30%)	P<0.001
Absent	15 (50%)	24 (80%)		

While measuring SLRT at base line and at every follow up of 15, 30, 45 days mean±standard deviation in both the groups was calculated (table 5). At day 0 mean and standard deviation of SLR score in group A and group B was 54.33±11.35 and 60.50±13.54 respectively. After completion of treatment period the mean improvement in SLR was found as 82.67 ±6.40 and 75.50±11.55 respectively.

Day	Group	Mean	Std. Deviation	Mean difference	P-value
BL (base line) (0 th day)	Group A	54.33	11.35	-6.167	0.061
	Group B	60.50	13.54	-6.167	
F1 (follow-up 1 st) (15 th day)	Group A	58.33	9.59	-5.167	0.079
	Group B	63.50	12.60	-5.167	
F2 (follow-up 2 nd) (30 th day)	Group A	70.33	9.99	0.0	1.000
	Group B	70.33	13.58	0.0	
F3 (follow-up 3 rd) (45 th day)	Group A	82.67	6.40	7.167	0.004
	Group B	75.50	11.55	7.167	

In 80% of patients in group A Braggard's sign was positive before treatment which remained only in 13.33% after treatment. Similarly in group B it was present in 63.33% at base line and in 43.33% cases after treatment (table 6).

Braggard's sign	Group A		Difference	P-value
	BT	AT		
Present	24 (80%)	4 (13.33%)	20 (66.67%)	P<0.001
Absent	6 (20%)	26 (86.67%)		
Braggard's sign	Group B		Difference	P-value
	BT	AT		
Present	19 (63.33%)	13 (43.33%)	6 (20%)	P=0.03
Absent	11 (36.67)	17 (56.67%)		

Again in group A deep tendon reflexes were found to be hyperactive in 30% patents before treatment and 0% after treatment. On the other hand in group B 7% patients were having hyperactive deep tendon reflexes before treatment and 4% after completion of treatment (table 7).

Change in deep tendon, knee, ankle reflexes	Group A		Difference
	BT	AT	
Hypoactive	10 (33.33%)	13 (43.33%)	3 (10.00%)
Normal	11 (36.67%)	17 (46.67%)	6 (20.00%)
Hyperactive	9 (30.00%)	0 (0.00%)	-9 (30.00%)
Change in deep tendon, knee, ankle reflexes	Group B		Difference
	BT	AT	
Hypoactive	7 (23.33%)	3 (10.00%)	-4 (13.33%)
Normal	16 (53.33%)	23 (76.67%)	7 (23.33%)
Hyperactive	7	4	-3 (-10%)

All the safety parameters (CBC, LFT, KFT, etc.) were checked at baseline and post treatment in both the groups and both the regimens were found to be safe for such a period of time.

4. DISCUSSION

In this comparative, open, randomized clinical trial 60 patients with sciatica thirty in each group (A&B), were treated for 45 days. The pre and post treatment effects were assessed based on Visual Analogue Scale (VAS). In this study majority of the patients with sciatica (58.3%) were males and relatively smaller percentage (41.7%) of female patients were observed. This study confirms the prevalence of sciatica (*Iraq al-nasa'*) found by Ulla Euro.¹³ The maximum number of patients observed, were in the age group of 31-40 years and the data is in agreement with the findings reported by B.W. Koes et al.¹⁴ Again the maximum number of patients observed in the sample, were house wives. This finding also correlates the claims of B.W. Koes et al.,¹⁴ and M.A. Stafford et al.,¹⁵ as occupational factors have a definite link with sciatica. Majority of the cases, 22 (36.6%) were from Upper Middle class of society, 21 (35%) from lower middle class, 8 (13.8%) were from Upper Lower class, 5 (8.6%) were from Upper class and only 4 patients (6.9%) were belonging to Lower class. The grading of socio-economic status was done on the basis of modified Kappuswamy's scale 2018. This study also evidenced 57 married patients (95%) and only 3 patients (5.0%) were unmarried. This finding is in correspondence with the etiological concept mentioned by various Unani authors as higher the quantum of sexual activity more will be sufferers.¹⁶ The current Study shows most of patients i.e., 29 patients (48.3%) having *balghamī al- mizāj* followed by 21 (35.0%) patients having *damwī al-mizāj* while 6 (10.0%) patients having *safrāwī al-mizāj* and 4 patients (6.7%) having *sawdawi al- mizaj*. This finding is in accordance to the description given by Razi, that sciatica (*Iraq al-nasa'*) is more frequent among the Phlegmatic and Sanguine Temperament people.⁷ In Table 1 we can see the X-ray findings of Group A before treatment where the maximum patients, 28 (93.33%), were affected from lumbar spondylosis and after completion of the treatment protocol only 9 patients were found with lumbar spondylosis depicting a tremendous improvement with *hijāma bil-shart*. Likewise, X-ray finding of Group B in the sample before treatment suggests maximum patients, 27 (90.00%), affected from lumbar spondylosis and after treatment 18 patients with lumbar spondylosis were found indicating a relatively less improvement by *hijāma bil-nar*. This study however

correlates with finding and description of B.W. Koes et al.,⁴ showing that in 90% of patients, sciatica is caused by a herniated disc with nerve root compression. Table 2 illustrates that effect on pain as mean VAS score¹⁷ of group A before treatment was 9.23 and after treatment 5.267, and the mean score in group B at baseline was 9.200 and after treatment it was 6.867. The p-value of both groups at baseline was 0.859 and after 45th day p value of both groups was <0.001. The improvement was however found to be relatively significant in group A (p<0.001) compared to group B. From table 3 we can see that mean score of the effect on difficulty in movement in group A at baseline was 1.77 and after treatment it was 0.17 while mean score of group B at baseline was 1.3 and after treatment it was 0.40. Statistically it was found that the difference between the median score of both groups at 45th day with respect to baseline was highly significant (p < 0.001). Similarly table 4 shows changes in stiffness in calf muscle. In group A at the baseline stiffness was present in 18 patients (60%) and after treatment stiffness was present in only 3 patients (10%). Meanwhile in group B at the baseline stiffness was present in 15 patients (50%) and after treatment stiffness was present in 6 patients (20%). Comparing the median score of stiffness in calf muscle in both groups A&B statistically, it was found that the significant improvement appeared in group A than B (p<0.001). SLR was assessed and graded as, very severe, severe, moderate, mild and absent and were coded as 4,3,2,1 and 0 respectively. The median score of SLR in group A was 54.33 & group B 60.50. When the median scores of SLR in both groups, A & B, were compared statically using independent sample t-test for intragroup comparison, it was found that the difference between the median score of test group at 45th day compared with baseline was significant (p<0.001). Intergroup comparison after 45th day showed significant improvement in group A than B (p= 0.004). Results of SLRT are discussed in table 5. Thus the wet cupping (*hijama bil-shart*) exhibited marked improvement in SLR in comparison to the fire cupping (*hijama bil-nar*). Braggard's sign was assessed and graded as positive & negative and was coded as 1, 2 respectively. The median score of Braggard's sign in group A at the baseline was 1.20 & group B 1.37. When the median score of Braggard's sign in both groups A & B were compared statically using independent sample t-test for intragroup comparison it was found that the difference

between the median scores of test group at 45th day compared with baseline was significant ($p < 0.009$). Interestingly the intergroup comparison of results after 45th day showed a highly significant improvement in group A compared to group B ($p < 0.001$), (table 6). Deep tendon reflexes, knee reflexes and ankle reflexes were assessed and graded as absent, hypoactive, normal, hyperactive, hyperactive with clonus and sustained clonus and were coded as 0, 1, 2, 3, 4, and 5 respectively. The median score of deep tendon reflexes, knee reflexes and ankle reflexes in group A was 1.97 & in group B it was 2.00 while as after treatment median results were found to be 1.57 and 2.03 in group A and B respectively. Statistically a significant improvement was observed in group A after treatment but there was an insignificant improvement found in group B (table 7). Moreover, during intergroup comparison of final results regarding median of deep tendon reflexes, knee reflexes and ankle reflexes in groups A&B it was found that the improvement was highly significant in group A than B ($p < 0.0001$). Razi elaborated in his book *Alhavi fittib* that all kinds of joint diseases are caused by accumulation of morbid matter in joints and it penetrates into *rebat* (tendons) as it become chronic, and basic principle of management (*ussul ilaj*) in all these conditions is evacuation of morbid matter (*istifrāgh*). Thus, wet cupping shows effect by the same mechanism (*istifrāgh akhlata fasida*).⁷ Finally it can be summed up that in group A, wet cupping (*hijama bil-shart*) draws out the blood and evacuates the morbid matter from the body, so makes it more effective than fire cupping (*hijama bil-nar*) in which blood is not drawn out.

5. CONCLUSION

In the current comparative study the data revealed that both regimens i.e., wet cupping (*hijama bil-shart*) and fire cupping (*hijama bil-nar*), were found to be effective in relieving the pain, reducing muscle stiffness, improving SLR and difficulty in movement, without producing any adverse effects during and after the treatment. It was also observed that the effects of *hijama bil-shart* were more than the effects of *hijama bil-nar*. However, multicentre study on larger sample size and for longer duration is needed for further exploration of the effects of both the regimens, and also it is more important to determine their mechanism of action with modified methodology.

Declaration

Ethics approval and consent to participate

The Institutional ethics committee (IEC) of Regional Research Institute of Unani Medicine (Central Council for Research in Unani Medicine), Naseem bagh campus, University of Kashmir, Srinagar gave the approval for this study with IEC number RRIUM/KU/2018- 19/Tech/IEC dated 29.03.2019. The trial was registered in Clinical Trials Registry-India (CTRI) having number CTRI/2020/05/05/025305 on dated 22.05.2020. A written informed consent was obtained and recorded from all the participating patients.

Conflict of Interest

The authors declare to have no conflict of interest.

Authors' contribution

All the authors participated finely in collecting the patient data, its analysis and interpretation. The first author has a major contribution in writing the manuscript, examining the patient, and collecting the data. All authors read and agreed for the manuscript.

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REFERENCES

1. Qarshi MH. Jami-ul Hikmat. New Delhi: Idara kitabul shifa; 2011:1028.
2. Grovle L. Sciatica and Disc herniation: The Complexity of Self-Reported Symptoms, Health Complaints, and Return to Work. Faculty of Medicine, University of Oslo. 2012; p8.
3. Allan H. Ropper et al. Sciatica. The New England journal of medicine. 2016; 1240-47. <https://doi.org/10.1056/NEJMra1410151>
4. Meghambar J, Pawar U, Puri D, Saley S. A case discussion on Sciatica. International Research journal of Pharmacy. 2014; 5(7):629-632. <https://doi.org/10.7897/2230-8407.0507128>
5. Norman S. Williams et al. Bailey & Love's short practice of SURGERY. Edward Arnold Publishers. 2008; p447-313 <https://doi.org/10.1201/b13454>
6. Manish Kumar Gaurav Garg et al Epidemiology, Pathophysiology and Symptomatic Treatment of Sciatica: A Review, International Journal of Pharmaceutical & Biological Archives. 2011.1051-56
7. Razi ABZ. Al Havi Fit Tib. Vol.II. New Delhi: CCRUM; 2004. pp75, 84, 129, 76, 77, 129, 114,174, 88, 99, 96.
8. Majusi AIA. Kamilussana'a. New Delhi: Idara kitabul shifa; 2010. p543.
9. Qarshi MH. Jami-ul Hikmat. Vol.I. New Delhi: Aijaz Publishing House; 2011. p11:1028.
10. Usaiba IA. Uyoonul Anba Fil Tabqatil Atibba. vol I. New Delhi: CCRUM; 1990. p69-72.
11. Abdullah MN et al. The medical perspective of cupping therapy: Effects and mechanisms of action. Journal of Traditional and Complementary Medicine. 2019; 90-95. <https://doi.org/10.1016/j.jtcm.2018.03.003>
12. El Sayed SM, Mahmoud HS, et al. Medical and Scientific Bases of Wet Cupping Therapy (Al-hijamah): In Light of Modern Medicine and Prophetic Medicine. Alternative & Integrative Medicine. 2013; 2(5):1-13. <https://doi.org/10.4172/2327-5162.1000122>
13. Euro U. Risk Factors for Sciatica. University of Oulu, Finland. 2019; 19,46,43.
14. Koes BW, Van Tulder MW, Peul WC. Diagnosis and treatment of sciatica. BMJ. 2007; 334(7607):1313-17. <https://doi.org/10.1136/bmj.39223.428495.BE>
15. Stafford MA, Peng P, Hill DA. Sciatica: A review of history, epidemiology, pathogenesis, and the role of epidural steroid injection in management. British Journal of Anesthesia. 2007; 99 (4):461-73. <https://doi.org/10.1093/bja/aem238>
16. Arzani A. Tibbe Akbar, (Urdu Translation by Hakeem Kahin Chand Kapoor). Vol. II. Lahore: Sardar sant singh and sons wa Tajirane Kutub Publication. YNM; p190-91.
17. Hawker GA, Mian S, Kendzerska T, French M. Measures of Adult pain: Visual Analog Scale for Pain (VAS pain), Numeric Rating Scale for Pain (NRS pain), McGill Pain Questionnaire (SF-MPQ), Chronic Pain Grade Scale (CPGS), Short Form-36 Bodily Pain Scale (SF-36 BPS), and Measure of Intermittent and Constant osteoarthritis pain (ICOAP). Arthritis care Res. 2011; 63(11):S240-52. <https://doi.org/10.1002/acr.20543>