

"EFFICACY OF HABB-E-GUL-E-AAK IN THE MANAGEMENT OF IRQ-UN-NASA (SCIATICA)"- AN OPEN-LABEL CLINICAL STUDY

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ABSTRACT

Irq-un-Nasa (sciatica) is a painful nerve-related condition characterized by radiating pain along the course of the sciatic nerve, often accompanied by numbness, tingling, weakness, and difficulty in walking. In Unani medicine, *Irq-un-Nasa* is described as a disorder associated with *Sue Mizaj Maddi*. *Habb-e-Gul-e-Aak* is a compound Unani formulation containing *Gule Madar* (*Calotropis procera*), *Zanjabeel* (*Zingiber officinale*), *Filfil Siyah* (*Piper nigrum*), and *Barg-e-Bans* (*Bambusa arundinacea*), with traditionally recognized analgesic and anti-inflammatory properties. An open-label, single-arm clinical study was conducted during 2025-2026 in the OPD/IPD of the Postgraduate Department of Moalajat, Unani Hospital. Forty patients aged 20-65 years were initially enrolled considering anticipated dropouts, of whom 30 completed the study and were included in the final statistical analysis. The intervention was administered for 45 days, with assessments performed on Day 0, Day 15, Day 30, and Day 45. Patients were evaluated clinically using the Visual Analogue Scale (VAS) for pain, assessment of numbness and other subjective symptoms, and the Straight Leg Raising Test (SLRT) as an objective parameter. Statistical comparison of repeated assessments was performed using Wilcoxon's signed-rank test. At baseline, all 30 patients (100%) had severe pain according to the VAS classification. By Day 15, severe pain was absent and 73.3% of patients had mild or moderate pain. By Day 30, 90.0% had mild or moderate pain, while by Day 45, 63.4% were pain-free and only 3.3% remained in the severe category. The reduction in VAS scores from baseline to Day 15, Day 30, and Day 45 was highly statistically significant ($P < 0.001$ for all comparisons). A progressive improvement in numbness was also observed. At baseline, 60.0% of patients had severe numbness, whereas by Day 45, 66.7% had no numbness and no patient remained in the severe category. Pairwise comparison demonstrated a highly significant improvement in numbness from baseline to all subsequent visits ($P < 0.001$). The findings of this open-label, single-arm study suggest that *Habb-e-Gul-e-Aak* was associated with significant improvement in pain and numbness among patients with *Irq-un-Nasa* over the 45-day treatment period.

KEYWORDS: *Irq-un-Nasa*; Sciatica; *Habb-e-Gul-e-Aak*; Unani medicine; *Calotropis procera*; Pain; Visual Analogue Scale; Numbness; Straight Leg Raising Test.

I. INTRODUCTION IRQ-UN-NASA (SCIATICA)

Irq-un-Nasa (sciatica) is a recognized condition in Unani medicine characterized by pain originating in the hip region and radiating downward along the course of the sciatic nerve, often extending through the thigh, calf, and toward the foot. Classical Unani scholars, including *Ibn Hubal al-Baghdadi* and *Razi*, provided descriptions of the condition that closely correspond to the modern clinical presentation of sciatica. The term *Irq-un-Nasa* literally refers to the sciatic nerve and denotes a type of nerve-related pain. From a modern medical perspective, sciatica commonly results from lumbar spinal nerve-root irritation or compression, frequently associated with intervertebral disc prolapse. The pain may radiate from the lower back or buttock into the leg and may be accompanied by paresthesia or sensory disturbances in the foot. Reported prevalence varies considerably, ranging from approximately 1.6% in the general population to 43% in certain occupational groups.^[1-5]

Irq-un-Nasa (sciatica) is a distressing nerve-related pain condition that can significantly impair quality of life and interfere with routine activities. It is characterized by pain radiating along the course of the sciatic nerve or its originating nerve roots, commonly extending from the lower back through the buttock and into the leg. Important risk factors include male sex and age between 30 and 70 years. The condition may initially present with low back pain followed by radiating sciatic pain. Associated neurological manifestations may include paresthesia, motor weakness, diminished reflexes, and a reduced straight-leg-raising (SLR) test. Lumbar intervertebral disc herniation is the most common cause of sciatica. Other, less frequent causes include bony or vascular compression, infections, malignancies, tumors, cysts, and other extra-spinal lesions. Accurate identification of the underlying cause is therefore important for appropriate management.^[4-5]

The sciatic nerve originates from the L4-S3 levels of the spinal cord and innervates the hamstring muscles, hip abductors and all muscles below the knee. Lesions typically occur near the sciatic notch. Clinical features include pain and numbness in the sole of the foot and weak toe flexors.^[6]

Unani scholar *Mohammad Ismaeel Jurjani* (930-994 AD) described a type of pain originating from the ischial joint that radiates toward the leg, known as *Irq-un-Nasa*.^[5] *Ibn-e-Sina* (980-1037 AD) stated, "*Irq-un-Nasa* is the pain experienced in the *asab-e-areeza* or *asab-e-warik e azeem*, which is the thickest nerve in the human body."^[7] *Abul Hasan Ali Ibne Rabban Taabri* (770-870 AD) described *Irq-un-Nasa*, attributing its causes to bile (*Safra*) and prolonged sun exposure.^[5] According to Unani literature, *Irq-un-Nasa* (sciatica) is viewed as a disorder of *Sue Mizaj Maddi*, where altered temperament occurs due to the accumulation of abnormal humoral matter.^[27] It is further divided into *Damvi*, *Balghami*, *Safravi*, *Saudavi*, and *Murakkab* forms, depending on

whether a single humor predominates or multiple humors are involved.

In this study, a compound formulation of *HABB-E-GUL-E-AAK* is being selected for the treatment of *Irq-un-Nasa* (sciatica) which contains four ingredients, *Gule madar* (*Calotropis procera*), *Zanjabeel* (*Zingiber officinale* Rose), *Filfil Siyah* (*Piper nigrum* Linn) and *Barg-e-Bans* (*Bambusa arundinacea* Willd. All the drugs are mentioned in Unani classical literature such as National Formulary of Unani Medicine, part-3, first edition and *Kitabul-Murakkabat*, Delhi ke *Muntakhab Murakkabat*, *Murakkabat-e-Advia*, *Bayaz Kabeer*.^[17,18,19,20,21] and have valuable analgesic or anti-inflammatory effects which was shown in recent pharmacological studies on these and four drugs.

II. AIMS AND OBJECTIVES

Assessing the effectiveness of the Unani formulation *Habb-e-Gul-e-Aak* in the management of *Irq-un-Nasa* (Sciatica). Offering cost-effective herbal therapy for *Irq-un-Nasa* (Sciatica). Enhancing patient's comprehension of the concept of *Irq-un-Nasa* (Sciatica) and its management & treatment within the Unani system of medicine.

III. Historical Aspects of Irq-un-Nasa (Sciatica)

The earliest known descriptions of low back pain and sciatica are found in the Edwin Smith Surgical Papyrus, an ancient Egyptian medical manuscript dating to approximately 1550 BC, making it one of the oldest recorded sources describing disorders of the spine and peripheral nerves.^[30]

According to *Hassan Qarshi in Jami-ul-Hikmat*, *Irq-un-Nasa* is a form of neural pain associated with the vessel known as *Nasa*. The pain typically originates in the gluteal region and radiates along the lateral aspect of the thigh, extending below the knee to the ankle and the little toe.^[31]

Hippocrates (460–377 BC), regarded as the father of medicine, was among the earliest physicians to describe sciatica, referring to it as ischiatic pain. He observed that it commonly affected men between 40 and 60 years of age and advocated traction therapy to relieve pain and improve mobility. He also reported that younger patients often recovered spontaneously within approximately 40 days.^[32]

References in the *Tafsir* (exegesis) of the *Holy Quran* suggest that *Hazrat Yaqoob* (AS) suffered from a condition resembling *Irq-un-Nasa*. Likewise, *Ali ibn Sahl Rabban al-Tabari* (770–870 AD) discussed *Irq-un-Nasa* and considered *Safra* (yellow bile) to be one of its important etiological factors.^[33]

Galen (129–199 AD) attributed sciatica mainly to unhealthy lifestyle practices. He recommended treatment by venesection (bloodletting) from the popliteal region

along with the administration of emetic medicines to restore humoral balance.^[34] In *Akseer Azam*, Mohammed Azam Khan and Hakeem Kabeeruddin explained that *Waja-ul-Warik* (hip pain), when neglected or prolonged, may eventually develop into *Irq-un-Nasa*.^[35] **Najeebuddin Samarqandi**, in his celebrated work *Molijat Sharh-e-Asbab*, provided a comprehensive account of the aetiology, clinical manifestations, and therapeutic management of *Irq-un-Nasa*.^[36] **Abu Marwan Ibn Zohr (Avenzoar, 1092–1162 AD)** also described the clinical features and treatment of *Irq-un-Nasa* in his classical text *Kitab-ut-Taiseer*.^[37] During the 15th century, the Turkish surgeon **Sabuncuoglu** documented several spinal disorders in his famous surgical treatise *Cerrahiyyetü'l-Haniyye (Imperial Surgery)*. He recommended medicinal treatment combined with **hot cauterization** for patients suffering from sciatica.^[38]

The Belgian anatomist **Andreas Vesalius**, through his landmark publication *De Humani Corporis Fabrica* (1543), was among the first to accurately illustrate the vertebral column and intervertebral discs, thereby laying the foundation for modern spinal anatomy.^[38]

Hakeem Ajmal Khan (1864–1926) described *Irq-un-Nasa* comprehensively in *Haziq*, discussing its causes, treatment, and dietary recommendations. He advised patients to avoid cold foods and drinks because they

promote the formation of *Balghami Madda* (phlegmatic matter), which may aggravate the disease.^[39]

The historical significance of sciatica is reflected even in literature. William Shakespeare (1564–1616) referred to sciatica in *Timon of Athens* (Act IV, Scene I), indicating that the disorder had long been recognized in society.^[40]

By the 19th century, sciatica was generally considered a manifestation of rheumatic disorders causing inflammation of the sciatic nerve. In his 1852 publication *Rheumatism, Rheumatic Gout and Sciatica*, Fuller emphasized the limited understanding of its pathology and the lack of consistently successful treatments, observations that remained relevant for many years.^[41]

During the early 20th century, scientific attention shifted towards the intervertebral disc as the principal source of sciatic pain. In 1929, *Schmorl and Andrae* reported posterior disc protrusions in post-mortem examinations, although they did not establish a definite relationship between disc prolapse and clinical symptoms.^[41]

One of the earliest detailed clinical descriptions of sciatica was provided by **Caelius Aurelianus** in the 4th century AD, who documented pain radiating from the buttock to the lower limb, associated muscle wasting in advanced disease, and identified heavy lifting as a possible precipitating factor.^[38]

IV. Anatomy and Physiology of the Sciatic Nerve

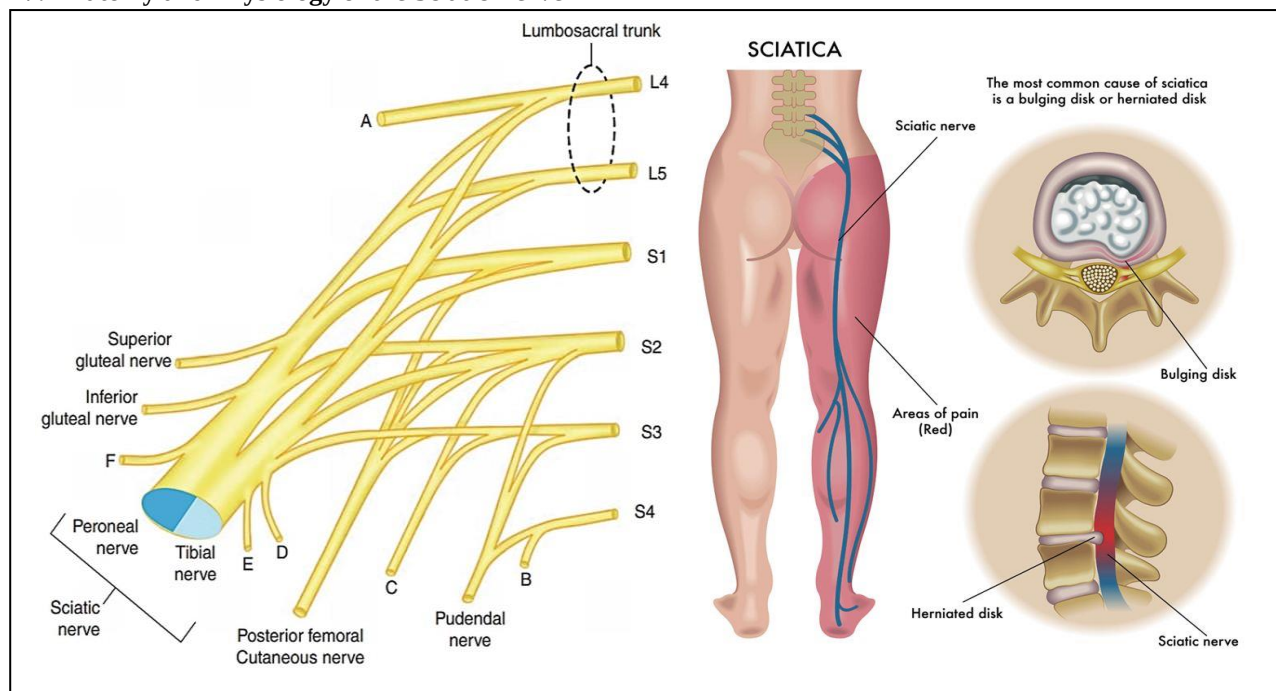


Fig. 1-Origin of sciatic nerve.

V. Definition of Sciatica (*Irq-un-Nasa*)^[15-20]

Irq-un-Nasa (sciatica) is a painful condition characterized by radiating pain along the course of the sciatic nerve, typically originating in the lower back or

buttock and extending through the posterior or lateral aspect of the thigh and leg, sometimes reaching the foot. It is generally caused by irritation, inflammation, or

compression of the lumbosacral nerve roots, most commonly due to lumbar intervertebral disc herniation.

In the **Unani system of medicine**, *Irq-un-Nasa* refers to pain arising in the hip region (**warik**) and extending downward along the course of the sciatic nerve toward

the leg and foot. Classical Unani scholars such as *Razi and Ibn Hubal al-Baghdadi* described its characteristic distribution from the hip through the thigh and calf, which closely resembles the modern clinical description of sciatica.

Table No. 01: Classification of Sciatica.^[20-30]

Basis of Classification	Type	Description
According to duration	Acute sciatica	Symptoms present for less than 6 weeks.
	Subacute sciatica	Symptoms persist for approximately 6–12 weeks.
	Chronic sciatica	Symptoms persist for more than 12 weeks or recur over a prolonged period.
According to cause	Discogenic sciatica	Caused by lumbar intervertebral disc herniation or prolapse; the most common cause.
	Degenerative sciatica	Associated with lumbar spondylosis, osteophytes, or other degenerative spinal changes.
	Stenotic sciatica	Results from compression of nerve roots due to lumbar spinal stenosis.
	Traumatic sciatica	Develops following trauma or injury involving the spine or surrounding structures.
	Non-spinal sciatica	Caused by extraspinal conditions such as tumors, cysts, vascular abnormalities, infections, or pelvic lesions.
According to nerve-root involvement	L4 radiculopathy	Pain or sensory changes may involve the anterior thigh and medial aspect of the leg and foot.
	L5 radiculopathy	Pain commonly extends through the buttock and lateral leg toward the dorsum of the foot and great toe.
	S1 radiculopathy	Pain usually extends from the buttock through the posterior thigh and calf toward the lateral foot.
According to laterality	Unilateral sciatica	Symptoms predominantly affect one lower limb.
	Bilateral sciatica	Symptoms affect both lower limbs and may indicate more extensive nerve-root involvement.
According to neurological involvement	Without neurological deficit	Radiating pain occurs without significant motor or sensory impairment.
	With neurological deficit	Associated with paresthesia, sensory loss, muscle weakness, or diminished reflexes.
	Severe nerve-root compression	May produce marked neurological deficits and, in severe cases, features of cauda equina syndrome requiring urgent evaluation.
According to Unani description	<i>Irq-un-Nasa</i>	Pain arising in the hip region (warik) and extending downward along the course of the sciatic nerve toward the thigh, calf, and foot.

Table No. 02: Composition Of Habb-E-Gule Aak.^[30-40]

S. No.	Drug Name	Botanical Name	Family	Part Used	Quantity	General Action/Property
1	Gul-e-Madar	<i>Calotropis gigantea</i>	Apocynaceae	Dried Flower	10 g	Traditionally used for anti-inflammatory and analgesic purposes
2	Zanjabeel	<i>Zingiber officinale</i>	Zingiberaceae	Underground Stem / Rootstock	10 g	Digestive, carminative and warming
3	Filfil Siyah	<i>Piper nigrum</i>	Piperaceae	Dried Fruit	10 g	Carminative, digestive and stimulant
4	Barg-e-Hans	<i>Bambusa arundinacea</i> Willd.	Poaceae	Leaf / Berg	10 g	Traditionally regarded as cooling and astringent

The present open-label, single-arm clinical study evaluated the efficacy of *Habb-e-Gul-e-Aak* in the management of *Irq-un-Nasa* (sciatica). The study was conducted during 2025–2026 among patients attending the OPD of a recognized Unani Medical College & Hospital. The study protocol received approval from the Institutional Ethics Committee (IEC) and Maharashtra University of Health Sciences (MUHS) Nasik. A total of 40 eligible patients, aged 20–65 years of either sex, were initially recruited. Of these, 30 patients completed the study, while 10 patients withdrew during the study period. Participants were enrolled after obtaining written informed consent. Diagnosis and assessment were based on detailed history, clinical examination, neurological assessment of the lower limbs, Straight Leg Raising (SLR) test, and relevant laboratory and radiological investigations.

A. Study Design

- Study type: Open-label, single-arm clinical study
- Sample size: 40 patients were screened, considering possible dropouts
- Final sample (N): 30 patients for statistical analysis
- Sampling technique: Convenience sampling
- Study duration: 45 days
- Follow-up assessments: Day 0, Day 15, Day 30, and Day 45
- Study setting: OPD and IPD, Postgraduate Department of *Moalajat*, Unani Hospital
- Study population: Male and female patients aged 20–65 years diagnosed with *Irq-un-Nasa* (Sciatica)

a. INCLUSION CRITERIA

- Patients in the age group of 20-65 years of any gender.
- Patients attending the OPD of the concerned hospital.
- Diagnosed cases of *Irq-un-Nasa* (Sciatica) were

a. Visual analog scales

NO MILD MODERATE SEVERE

I	I	I	I	I	I	I	I	I	I	I	I	I	I
0	1	2	3	4	5	6	7	8	9	10			

Clinical presentation, general physical examination and neurological examination of lower limb who's SLRT (straight leg raising test) were positive.

- Pregnant women and lactating mothers
- History of surgery of affected leg.
- Patients suffering from systemic diseases like cardiac, uncontrolled Diabetes mellitus, Hypertension, Acute febrile illness, renal diseases or Convulsions.
- Spinal deformity (Congenital / Acquired)
- Radiological evident cases of spinal injury/deformity/ disease.
- Patients who fail to give consent.

- Any significant adverse effects
- Patients not adhering to the prescribed medication schedule

The patient was undergoing evaluation using two methods.

This scale measures pain or symptoms by having the patient mark a point on a 10cm horizontal line, ranging from 0 (no pain) to 10 (severe pain).^[23]

The straight leg raise test was performed with the patient in a supine position. The examiner gently raises the patient's leg by flexing the hip with the knee in extension, and the test was considered positive when the patient experiences pain along the lower limb in the same distribution of the lower radicular nerve roots (usually L5 or S1).^[24]

- Pain in one or both legs starting from the hip joint travelling downwards.
- Numbness and tingling sensation
- Burning sensation
- Weakness of affected leg
- Difficulty in walking
- Inability to bend the knee (in severe cases)
- VAS Scale for pain measurement

b. Tingling sensation

- **ABSENT** Normal condition i.e. No tingling sensation
- **MILD:** Patient feels tingling sensation but there is no disturbance in his daily routine
- **MODERATE:** Patient feels tingling sensation but there is disturbance in his daily routine for some extent
- **SEVERE:** Patient feels severe tingling sensation and there is severe disturbances in his daily routine work

c. NUMBNESS

- **1-ABSENT:** Normal condition i.e. No Numbness
- **2-MILD:** very less sensation
- **3-MODERATE:** no sensation but the patient can identify edged objects
- **4-SEVERE:** complete absence of sensation even when pricked by needle or other edged object

d. Weakness of the affected leg

- **ABSENT:** Normal condition
 - **MILD:** mild weakness
- MODERATE: weakness but patient is able to perform daily routine work
SEVERE: severe weakness and patient unable to perform daily routine work

e. Difficulty in walking

- **ABSENT:** Normal condition i.e. No difficulty in walking
- **MILD:** Mild difficulty but not affected his/her normal work
- **MODERATE:** Affects patients daily routine
- **SEVERE:** patient unable to walk.

F. Objective parameters**Straight leg raising test (SLRT)**

- a. Present
 - b. Absent
- Angle

Method of collecting data

- Clinical History and Subjective Questions.
- CRF (case sheet form)
- SLR test Method of Preparation and Quality Control of Drugs

a. Parameters of Evaluation: Each participant underwent a comprehensive evaluation that included.

- General information
- Clinical presentation
- Detailed history
- General and physical examination
- Systemic examination
- Specific investigations

b. General Information: Demographic details including name, age, gender, marital status, occupation, religion, and socioeconomic status were documented for every

participant.

c. Clinical Presentation: Patients commonly presented with pain originating from the gluteal or hip region, radiating along the lumbosacral nerve distribution into the lower limb. The pain was typically sharp, shooting, and extended from the buttock to the posterior thigh, leg, and foot. It was usually unilateral but occasionally involved both lower limbs.

Associated neurological symptoms included numbness, tingling (paraesthesia), burning sensation, altered temperature perception (dysesthesia), and sensory impairment. Some patients also experienced weakness of the affected limb, resulting in difficulty in walking, reduced mobility, and, in severe cases, inability to flex the knee adequately.

d. Detailed History: A thorough medical history was obtained from every participant, including.

- History of present illness
- Past medical history
- Drug history
- Family history
- Dietary habits

For female participants, menstrual and obstetric histories were also recorded.

e. General and Physical Examination

All participants underwent a complete general physical examination along with a systematic clinical evaluation. A detailed examination of all major organ systems was carried out, with special emphasis on neurological assessment.

- **Cardiovascular System (CVS):** Routine cardiovascular examination included inspection, palpation, and auscultation of the precordium to identify any associated cardiac abnormalities.
- **Respiratory System (RS):** The respiratory system was evaluated through inspection, palpation, percussion, and auscultation of the chest.
- **Gastrointestinal System (GIT):** A comprehensive abdominal examination was performed using inspection, palpation, percussion, and auscultation.
- **Central Nervous System (CNS):** A detailed neurological examination was performed in every patient. Most participants complained of severe gluteal pain radiating to the lower limb, accompanied by numbness, tingling, burning sensation, sensory disturbances, and weakness.

f. Clinical assessment included evaluation of

- Muscle strength
- Gait abnormalities
- Sensory function
- Deep tendon reflexes
- Presence of paraesthesia and dys-esthesia.
- Occasional lower limb swelling

These findings were suggestive of irritation or compression involving the L4, L5, S1, S2, and S3 nerve roots. Higher mental functions, orientation, behaviour, appearance, communication skills, and level of consciousness were also assessed to exclude other neurological disorders such as delirium, dementia, stupor, or coma. Special neurological tests, including the Straight Leg Raising Test (SLRT) and League's sign, were performed in all patients. Pain intensity was evaluated using the Visual Analogue Scale (VAS) to assess disease severity and monitor treatment response during follow-up.

Urogenital System

A complete examination of the kidneys and urinary tract was performed to exclude any associated genitourinary pathology.

Endocrine System

Patients were evaluated for endocrine disorders such as hypothyroidism, hyperthyroidism, diabetes mellitus, and Cushing's syndrome, which could influence the clinical presentation.

Musculoskeletal System

A detailed musculoskeletal examination was carried out, including inspection, palpation, percussion, and assessment for abnormal joint sounds such as crepitus. The examination also helped exclude other musculoskeletal disorders, including degenerative osteoarthritis and gout, in patients presenting with similar symptoms.

All patients diagnosed with *Irq-un-Nasa* (Sciatica) were comprehensively assessed through detailed history taking, physical examination, neurological evaluation, and documentation using a structured case record form (Annexure) before initiation of treatment.

Assessment of Mizaj: In all selected

In all selected patients, the assessment of *Mizaj* (temperament) was carried out based on the principles of *Ajnas-e-Ashra* along with other relevant criteria described in classical Unani literature. The parameters used for this assessment are presented below in a tabular form for clarity and systematic evaluation.

VII. OBSERVATIONS AND RESULTS

This open-label, single-arm clinical study was undertaken to evaluate the efficacy of the Unani formulation *Habb-e-Gul-e-Aak* in the management of *Irq-un-Nasa* (sciatica). The primary objective was to assess the therapeutic effectiveness of the formulation in patients suffering from *Irq-un-Nasa*. The secondary objectives were to explore a potentially cost-effective herbal treatment option for sciatica and to improve understanding of the concept, management, and treatment of *Irq-un-Nasa* according to the Unani system of medicine.

A total of 40 patients were enrolled, considering the possibility of dropouts. After completion of the study, 30 patients were available for final statistical analysis. The study was conducted using an open-label clinical design, with treatment outcomes evaluated among the patients who completed all scheduled study visits.

Table No. 03: The age distribution of the cases studied (n=30).

Age Group (years)	No. of cases	% of cases
25 – 30	5	16.7
31 – 40	10	33.3
41 – 50	9	30.0
>50	6	20.0
Total	30	100.0

Values are n (% of cases)

Comments

- 1) Out of 30 cases studied, 5 cases (16.7%) had age between 25 – 30 years, 10 (33.3%) had age between 31 – 40 years, 9 cases (30.0%) had age between 41 – 50 years and 6 cases (20.0%) had age above 50 years.
- 2) The mean $\pm$ SD, (Min – Max) of age of the group was 41.47 ± 9.83 years (Min = 25 years, Max = 61 years).

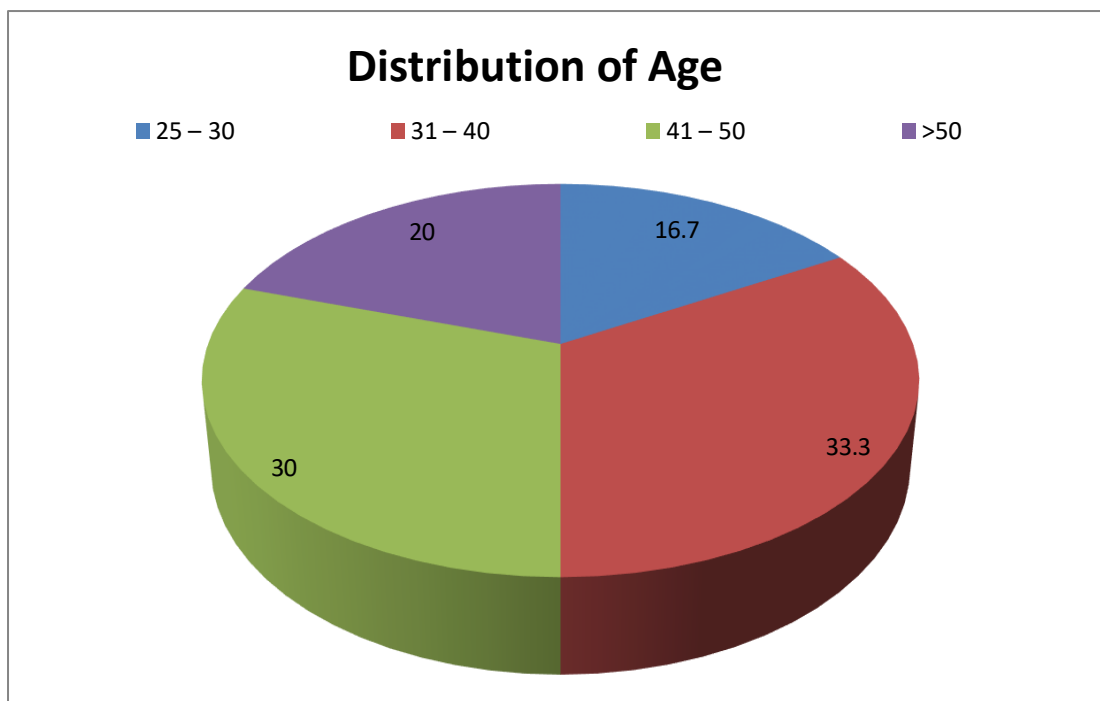


Figure 02: The age distribution of the cases studied (n=30).

Table No. 04: The sex distribution of the cases studied (n=30).

Sex	No. of cases	% of cases
Male	15	50.0
Female	15	50.0
Total	30	100.0

Values are n (% of cases). Comments

- 1) Out of 30 cases studied, 15 cases (50.0%) were males and 15 cases (50.0%) were females.
- 2) The male to female sex ratio was 1.0: 1.0 in the study group with equal proportion of males and females.

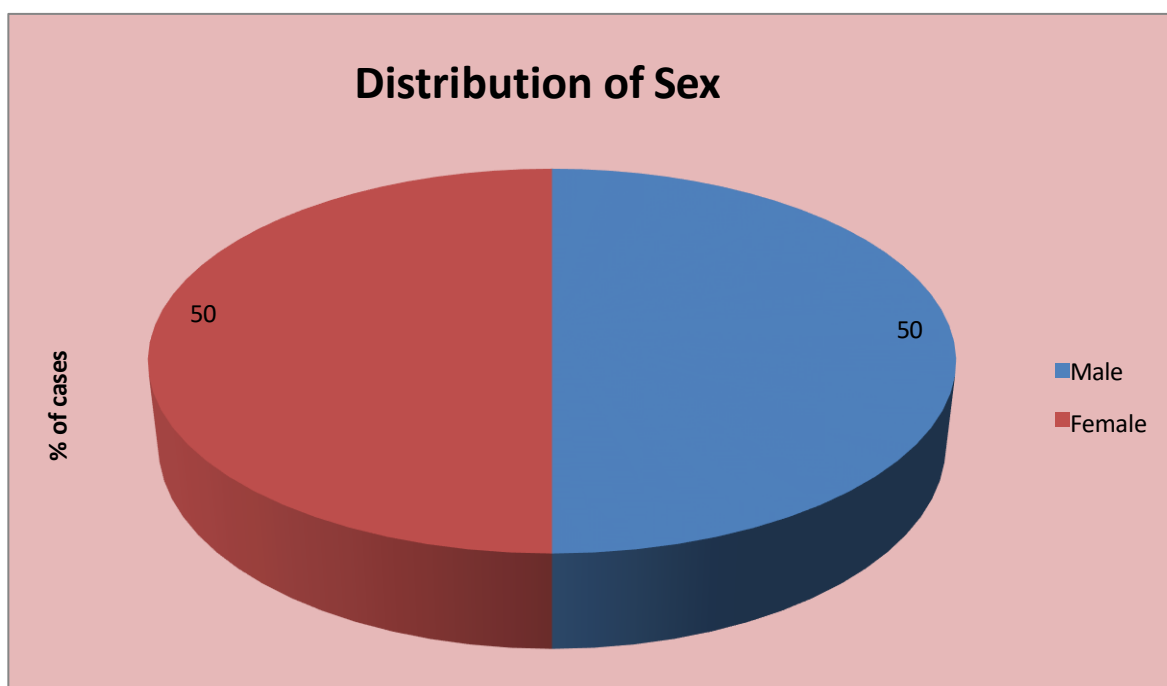


Figure 03: The sex distribution of the cases studied (n=30).

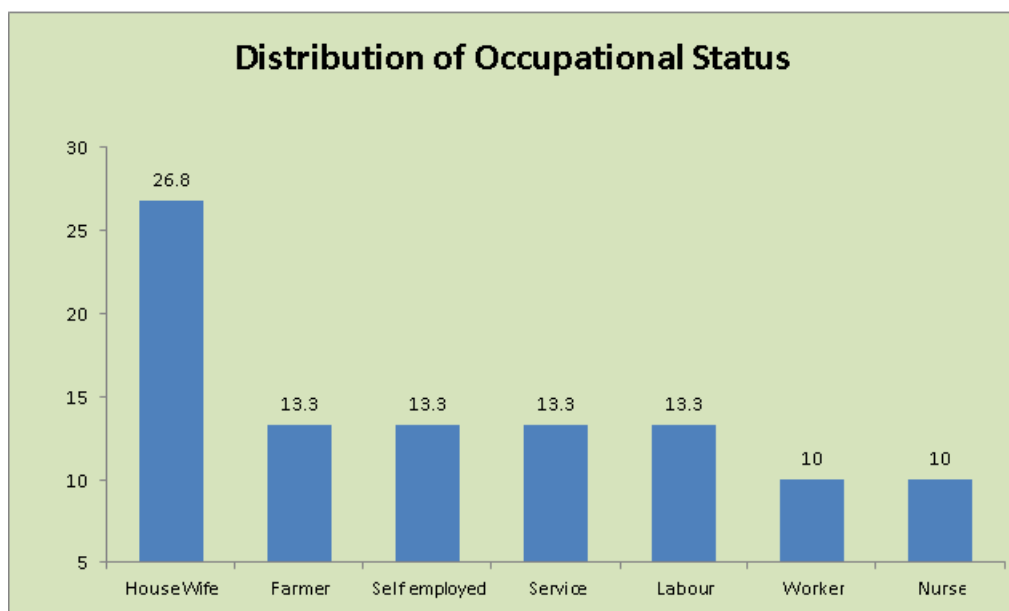
Table No. 05: The distribution of occupational status of the cases studied (n=30).

Occupational Status	No. of cases	% of cases
House Wife	8	26.8
Farmer	4	13.3
Self employed	4	13.3
Service	4	13.3
Labour	4	13.3
Worker	3	10.0
Nurse	3	10.0
Total	30	100.0

Values are n (% of cases)

Comments

- 1) Out of 30 cases studied, 8 cases (26.8%) were house wives, 4 cases (13.3%) each were farmers, self-employed, had service, were labours and 3 cases (10.0%) each were workers and nurses.
- 2) Majority of cases studied were house wives.

**Figure 04 The distribution of occupational status of the cases studied (n=30).****Table No. 06: The distribution of type of mizaj (temperament) of the cases studied (n=30).**

Type of Mizaj	No. of cases	% of cases
Balghami	13	43.3
Damvi	4	13.4
Safravi	13	43.3
Total	30	100.0

Values are n (% of cases). Comments

- 1) Out of 30 cases studied, 13 cases (43.3%) had Balghami mizaj, 4 cases (13.4%) had Damvi mizaj and 13 cases (43.3%) had Safravi mizaj.
- 2) Majority of the cases studied had Balghami and Safravi mizaj.

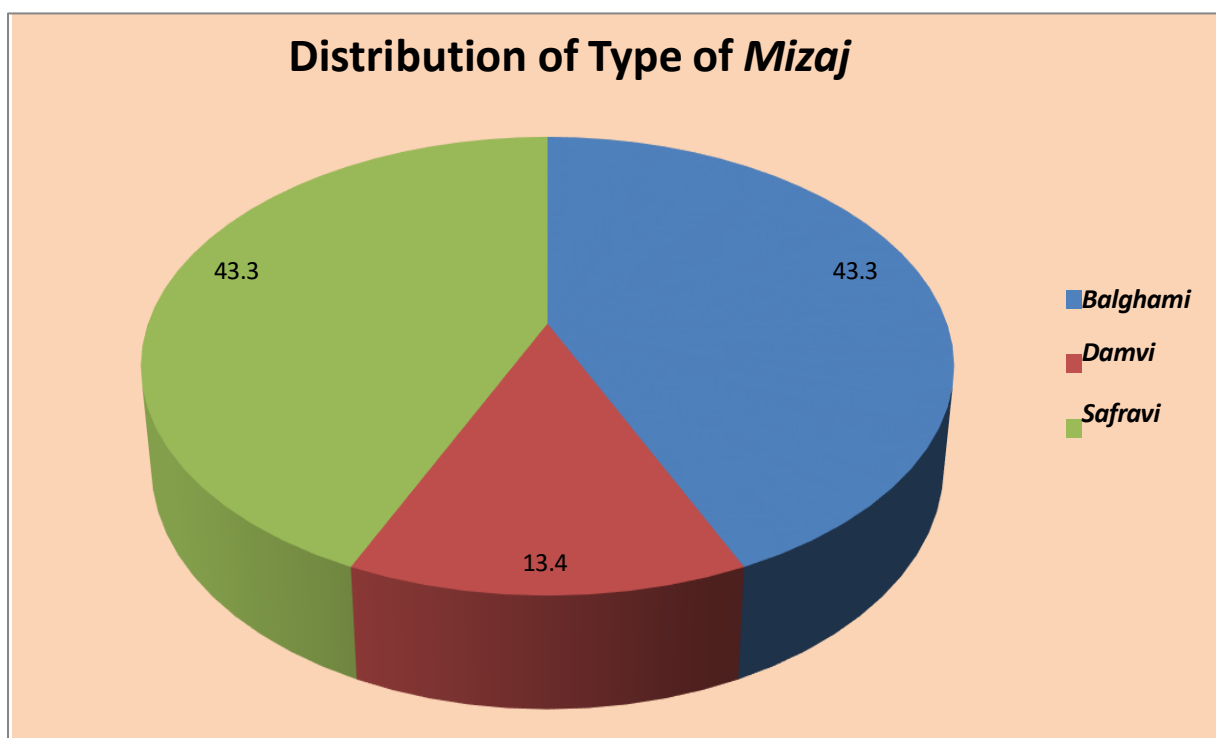


Figure 05: The distribution of type of *mizaj* (temperament) of the cases studied (n=30).

Table No. 7a: The distribution of improvement in subjective parameters (Severity of Pain – VAS scale) studied (n=30).

Parameter	Visit 1 (n=30)		Visit 2 (n=30)		Visit 3 (n=30)		Visit 4 (n=30)	
Pain score (VAS)	n	%	n	%	n	%	n	%
No [0]	0	0.0	0	0.0	0	0.0	19	63.4
Mild [1 – 3]	0	0.0	4	13.3	21	70.0	6	20.0
Moderate [4 – 6]	0	0.0	18	60.0	6	20.0	4	13.3
Severe [7 – 10]	30	100.0	8	26.7	3	10.0	1	3.3
Total	30	100.0	30	100.0	30	100.0	30	100.0
Visit 1 (Day 0), Visit 2 (Day 15), Visit 3 (Day 30), Visit 4 (Day 45).								
Values are n (% of cases).								

Table No. 7b: The statistical comparison of improvement in subjective parameters (Severity of Pain – VAS scale) studied (n=30).

Comparisons (Pair-wise)	P-value	Significance
Visit 1 v Visit 2	0.001***	Highly Significant
Visit 1 v Visit 3	0.001***	Highly Significant
Visit 1 v Visit 4	0.001***	Highly Significant
P-values by Wilcoxon's signed rank test. P-value<0.05 is considered to be statistically significant. ***P-value<0.001.		

Comments

1) At baseline [Visit 1, Day 0], all 30 patients [100%] had severe pain [VAS 7 -10]. There was progressive improvement over 45 days: by Visit 2 [Day 15], 73.3% shifted to moderate [60.0%] or mild [13.3%] pain with no patients remaining in the severe category. By Visit 3 [Day 30], 90% reported mild [70.0%] or moderate [20.0%]

pain. At Visit 4 [Day 45], 63.4% were pain-free [VAS 0] and only 1 patient [3.3%] had severe pain.
2) Pairwise comparison with Wilcoxon's signed rank test showed highly significant reduction in VAS scores from Visit 1 to all subsequent visits (P-value<0.001 for all).

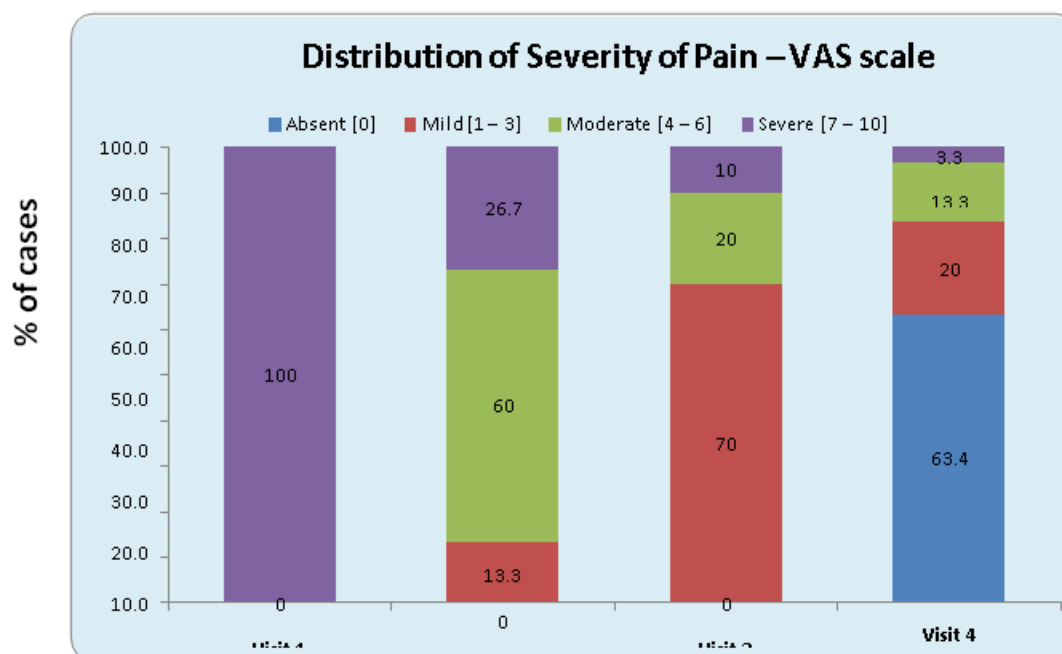


Figure 06 The distribution of improvement in subjective parameters (Severity of Pain – VAS scale) studied (n=30).

Table No. 8a The distribution of improvement in subjective parameters (Severity of Numbness) studied (n=30).

Parameter	Visit 1 (n=30)		Visit 2 (n=30)		Visit 3 (n=30)		Visit 4 (n=30)	
Numbness	n	%	n	%	n	%	n	%
Absent [0]	2	6.7	5	16.7	14	46.7	20	66.7
Mild [1]	4	13.3	10	33.3	9	30.0	6	20.0
Moderate [2]	6	20.0	12	40.0	5	16.7	4	13.3
Severe [3]	18	60.0	3	10.0	2	6.7	0	0.0
Total	30	100.0	30	100.0	30	100.0	30	100.0
Visit 1 (Day 0), Visit 2 (Day 15), Visit 3 (Day 30), Visit 4 (Day 45).								
Values are n (% of cases).								

Table No. 8b: The statistical comparison of improvement in subjective parameters (Severity of Numbness) studied (n=30).

Comparisons (Pair-wise)	P-value	Significance
Visit 1 v Visit 2	0.001***	Highly Significant
Visit 1 v Visit 3	0.001***	Highly Significant
Visit 1 v Visit 4	0.001***	Highly Significant
P-values by Wilcoxon's signed rank test. P-value<0.05 is considered to be statistically significant. ***P-value<0.001.		

Comments

- At baseline Visit 1 [Day 0], 60% of patients had severe numbness and only 6.7% had no numbness. By Visit 2 [Day 15], severe numbness dropped to 10% while absent [16.7%] and mild [33.3%] categories increased. By Visit 3 [Day 30], 46.7% were free of numbness and severe cases were down to 6.7%. At Visit 4 [Day 45], 66.7% had no numbness, 20% had mild numbness, and no patient had severe numbness.
- Pair-wise comparison using Wilcoxon's signed

rank test showed highly significant improvement in numbness scores from baseline Visit 1 to all subsequent visits (P-value<0.001 for all).

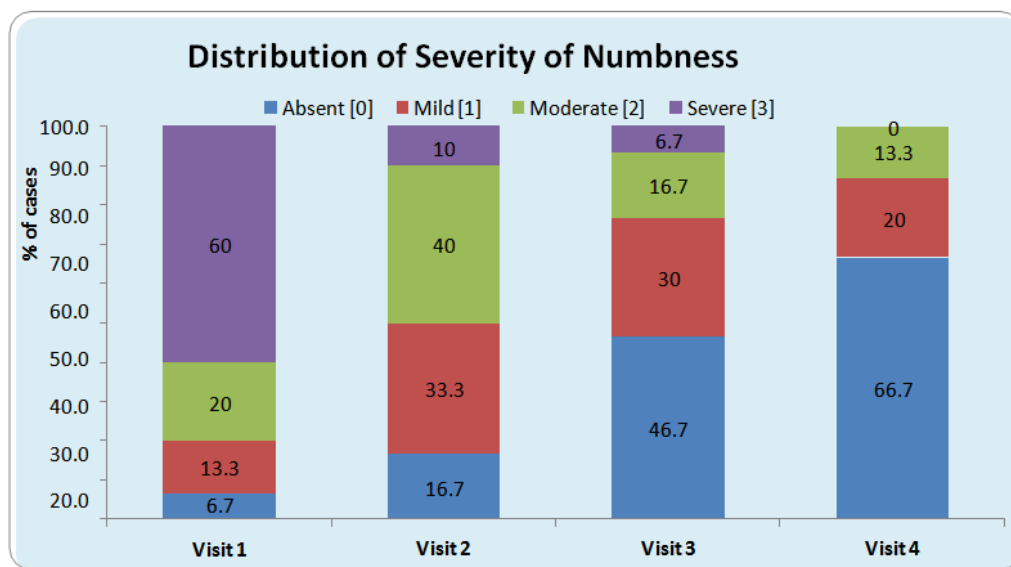


Figure 07: The distribution of improvement in subjective parameters (Severity of Numbness) studied (n=30).

VIII. DISCUSSION

The present open-label, single-arm clinical study was undertaken to evaluate the effectiveness of *Habb-e-Gul-e-Aak* in the management of *Irq-un-Nasa* (sciatica). A total of 40 patients were initially enrolled, of whom 30 completed the study and were included in the final statistical analysis. The treatment period was 45 days, and clinical assessments were performed at Day 0, Day 15, Day 30, and Day 45. Pain intensity was assessed using the Visual Analogue Scale (VAS), while numbness and other subjective symptoms were evaluated clinically. The Straight Leg Raising Test (SLRT) was used as an objective clinical parameter.

The findings of the present study demonstrate a progressive improvement in the major subjective parameters, particularly pain and numbness, following administration of *Habb-e-Gul-e-Aak*. At baseline, all 30 patients had severe pain according to the VAS classification. A gradual reduction in pain severity was observed during subsequent visits. By Day 15, no patient remained in the severe pain category, while 73.3% of patients had mild or moderate pain. By Day 30, the proportion of patients with mild or moderate pain increased to 90.0%. At the end of the treatment period, on Day 45, 63.4% of patients were completely free from pain and only 3.3% remained in the severe category. The improvement in VAS scores from baseline to Day 15, Day 30, and Day 45 was highly statistically significant, with $P < 0.001$ for all pairwise comparisons using Wilcoxon's signed-rank test.

The progressive reduction in pain severity is an important finding because pain is the predominant and most disabling symptom of *Irq-un-Nasa*. The clinical presentation described in the study included radiating pain from the hip or gluteal region into the lower limb, frequently associated with sensory symptoms and

functional limitation. The observed improvement therefore suggests that *Habb-e-Gul-e-Aak* was associated with clinically meaningful symptomatic relief over the 45-day treatment period. However, because the present study did not include a control group or blinding, the improvement should be interpreted as an association with treatment rather than definitive proof of efficacy.

A similar progressive improvement was observed in **numbness**, another important neurological manifestation of *Irq-un-Nasa*. At baseline, 60.0% of patients had severe numbness, whereas only 6.7% were free from numbness. By Day 15, severe numbness had decreased to 10.0%. Further improvement was observed at Day 30, when 46.7% of patients had no numbness. By Day 45, 66.7% of patients were completely free from numbness and no patient remained in the severe category. Pairwise comparisons between baseline and each subsequent visit demonstrated highly significant improvement, with $P < 0.001$ in all comparisons. The improvement in numbness, together with the reduction in pain, indicates that the beneficial response was not limited to pain perception alone but was also accompanied by improvement in an important sensory symptom. Nevertheless, the study relied on clinical grading of numbness rather than an objective quantitative neurological or neurophysiological measurement. Therefore, the findings should be regarded as evidence of symptomatic improvement rather than confirmation of resolution of nerve-root compression or neurological pathology.

From the **Unani perspective**, *Irq-un-Nasa* is described as a condition associated with *Sue Mizaj Maddi*, and classical literature describes different forms according to the predominance of humoral factors. In the present study, 43.3% of patients were classified as having *Balghami Mizaj*, 43.3% as *Safravi Mizaj*, and 13.4% as *Damvi Mizaj*. Thus, *Balghami* and *Safravi Mizaj*

constituted the predominant temperament categories among the study participants. These observations provide a basis for considering the Unani conceptual framework while interpreting the therapeutic response, although the present study was not designed to establish a causal relationship between *Mizaj* and treatment response.

The formulation investigated in the present study contains *Gule Aak*, *Post-e-Kalonji*, *Zanjabeel*, *Filfil Siyah*, *Qaranfal*, *Asl-us-Soos*, and *Qand Safaid*. The individual ingredients are described in the study as possessing traditionally recognized analgesic, anti-inflammatory, *Muqawwi*, *Muhallil*, stimulant, and demulcent properties. The proposed therapeutic response may therefore be understood within the traditional pharmacological rationale of the formulation, particularly its analgesic and anti-inflammatory actions. The study also cites previous pharmacological work reporting anti-inflammatory and analgesic activity of *Habb-e-Gul-e-Aak* and its components.

The clinical improvement observed in the present study is also consistent with the general therapeutic rationale described in the Unani literature, where management of *Irq-un-Nasa* is directed toward relieving pain, resolving pathological matter, and restoring normal function. The formulation was selected because its ingredients are documented in classical Unani literature and have been reported to possess relevant pharmacological activities. Thus, the observed reduction in pain and numbness provides preliminary clinical support for further investigation of *Habb-e-Gul-e-Aak* in *Irq-un-Nasa*.

The demographic findings provide additional context for interpretation. The mean age of the study population was 41.47 ± 9.83 years, with patients distributed across the 25–30, 31–40, 41–50, and >50-year age groups. The study included an equal proportion of males and females, with 15 males and 15 females. Occupationally, housewives constituted the largest group, followed by farmers, self-employed individuals, service workers, labourers, workers, and nurses. These findings indicate that *Irq-un-Nasa* was represented across different age, sex, and occupational groups within the study population.

An important consideration in interpreting the results is the study design. The present investigation was open-label and single-arm, with convenience sampling. Although the statistical analysis demonstrated highly significant improvements from baseline, the absence of a control or comparator group means that spontaneous recovery, regression to the mean, placebo effects, natural variation in symptoms, or other unmeasured factors cannot be excluded. Furthermore, 10 of the 40 initially enrolled participants did not complete the study, leaving 30 participants for the final analysis. Therefore, the magnitude of treatment effect should be interpreted cautiously.

Another limitation is the relatively small final sample size and short follow-up period of 45 days. The study provides evidence regarding symptomatic changes during the treatment period but does not establish whether the observed benefits are maintained over a longer period. In addition, although SLRT was included as an objective parameter in the study protocol, the available results presented in the study primarily demonstrate statistical findings for VAS pain and numbness. Consequently, conclusions regarding objective neurological recovery should be made conservatively.

Despite these limitations, the consistent improvement across successive assessments is noteworthy. The response was evident as early as day 15 and continued through Day 45, with the greatest proportion of patients becoming pain-free at the final assessment. A comparable progressive pattern was observed for numbness, with complete disappearance of severe numbness by day 45. This temporal pattern supports the need for further controlled investigations to determine whether the observed response is reproducible and attributable specifically to *Habb-e-Gul-e-Aak*.

Overall, the findings of the present study suggest that *Habb-e-Gul-e-Aak* was associated with significant improvement in pain and numbness among patients with *Irq-un-Nasa* over a 45-day treatment period. The results provide preliminary clinical evidence supporting the therapeutic potential of this Unani formulation. However, larger randomized controlled studies with appropriate comparator groups, blinding where feasible, longer follow-up, standardized objective neurological assessments, and evaluation of safety outcomes are required to establish its efficacy and safety more conclusively.

IX. CONCLUSION

The present clinical study was conducted to evaluate the effectiveness of *Habb-e-Gul-e-Aak* in the management of *Irq-un-Nasa* (Sciatica). An open-label, single-arm clinical study was carried out on 40 initially enrolled patients, of whom 30 completed the 45-day treatment period and were included in the final statistical analysis. Patients were assessed at baseline and subsequently on Day 15, Day 30, and Day 45 using clinical parameters, particularly the Visual Analogue Scale (VAS) for pain and grading of numbness. The study demonstrated a progressive and statistically highly significant reduction in pain severity following treatment with *Habb-e-Gul-e-Aak*. At baseline, all patients (100%) had severe pain. By Day 15, no patient remained in the severe category, while by Day 30, 70% had mild pain and 20% had moderate pain. At the end of treatment on Day 45, 63.4% of patients were completely pain-free, while only 3.3% continued to have severe pain. The reduction in VAS scores from baseline to Day 15, Day 30, and Day 45 was highly significant ($P < 0.001$ for all comparisons). A similar progressive improvement was observed in

numbness. At baseline, 60% of patients had severe numbness and only 6.7% were free from numbness. By Day 45, **66.7% of patients had complete resolution of numbness**, 20% had mild numbness, and no patient remained in the severe category. The improvement in numbness from baseline to each subsequent assessment was also highly statistically significant ($P < 0.001$). The findings therefore indicate that *Habb-e-Gul-e-Aak* was associated with significant improvement in the major subjective symptoms of *Irq-un-Nasa*, particularly pain and numbness, during the 45-day treatment period. The therapeutic response observed in the study is also consistent with the traditional Unani rationale of the formulation, whose constituent drugs are described as possessing analgesic, anti-inflammatory, *Muhallil*, and related therapeutic properties. The study thus provides preliminary clinical evidence supporting the therapeutic potential of *Habb-e-Gul-e-Aak* in *Irq-un-Nasa* (Sciatica). However, since the study was open-label, single-arm, used convenience sampling, had a relatively small final sample size, and lacked a control group, the findings should be interpreted with caution. The improvement cannot be attributed exclusively to the intervention without considering spontaneous recovery, placebo effects, regression to the mean, and other possible confounding factors.

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