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COMPARATIVE REVIEW OF IBUPROFEN AND HABBE SURANJAN IN THE MANAGEMENT OF LOW BACK PAIN (*WAJA-UZ-ẒAHR)*

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ABSTRACT

Low back pain (LBP) is one of the most prevalent musculoskeletal disorders globally, contributing significantly to morbidity and disability. The management of LBP commonly involves pharmacological and non- pharmacological interventions. Ibuprofen, a non-steroidal anti-inflammatory drug (NSAID), is widely used for its analgesic and anti-inflammatory properties. In Unani medicine, Habbe Suranjan is traditionally used for musculoskeletal pain, gout, and arthritis due to its anti-inflammatory and analgesic properties derived from herbal constituents such as Suranjan (Colchicum luteum). This review aims to compare the pharmacological profiles, therapeutic efficacy, and safety of Ibuprofen and Habbe Suranjan in the management of low back pain. Findings from modern pharmacological studies and traditional Unani literature suggest that while Ibuprofen offers rapid symptomatic relief, Habbe Suranjan provides a holistic and safer alternative with fewer gastrointestinal side effects when used appropriately.

KEYWORDS: Low back pain, Ibuprofen, Habbe Suranjan, Unani medicine, NSAIDs, Anti-inflammatory agents.

I. Introduction and background of Low back pain. (*Waja -uz-Ẓahr)*

Low back pain (LBP) affects nearly 60–80% of adults at some point in their lifetime and remains a leading cause of occupational disability worldwide. The etiology of LBP is multifactorial, including muscular strain, disc degeneration, and inflammatory processes. Management strategies focus on pain relief and restoration of function. Modern pharmacotherapy relies heavily on non-steroidal anti-inflammatory drugs (NSAIDs), among which Ibuprofen is frequently prescribed due to its efficacy and availability. Conversely, Unani medicine provides time-tested formulations such as Habbe Suranjan for similar indications. Comparing these two approaches offers insights into integrating traditional and modern therapeutic paradigms.

Fig. 01 Low Back pain- A common problem in male and female.

Waja uz zahr or Low back pain (LBP), is a common condition affecting the muscles, nerves, and bones of the back, located between the lower edge of the ribcage and the lower fold of the buttocks. Pain can range from a faint aching to a strong stabbing sensation. Low back pain can be classified as acute (lasting less than 6 weeks), sub-chronic (6 to 12 weeks), or chronic (lasting more than 12 weeks). Depending on the underlying cause, the condition can be characterized as mechanical, non-mechanical, or referred pain. Though lumbago is not a specific disease in modern medicine rather, it is a symptom that might develop as a result of pathology caused by a range of conditions. Discomfort in the lumbosacral area is a common symptom of low back pain. It affects between 60-85 percent of the population, putting a significant strain on society. But in Unani Medicine many physicians and scholars considered it as disease and at the same time symptom for many diseases.

Most cases are self-limiting, with symptoms resolving within three months; conservative management can be used for symptom control but supporting evidence for most interventions is weak. It has been observed that despite opting for various types of interventions i.e., drugs, physical therapies and surgical interventions, patients are not completely satisfied with treatment of low backache.

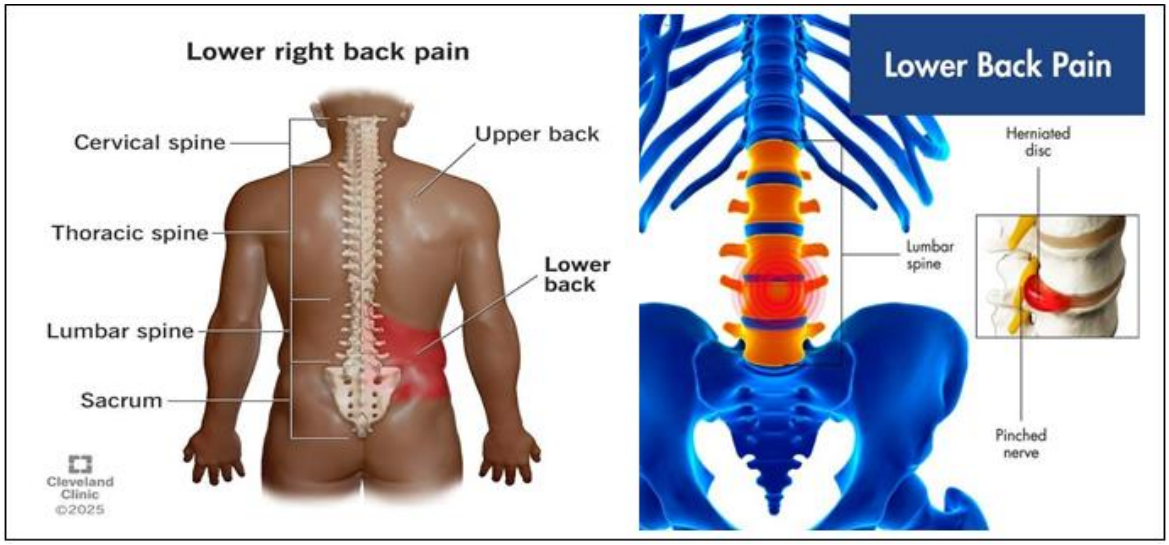

Fig. 02 Anatomy and Physiology of Low Back pain.

II. Unani concept of waja ul zaher (low back pain)

In Unani medicine, Wajaʿ-ul-Ẓahr is described as a painful condition of the lumbar region arising from derangement of temperament (Sū'-e-Mizāj), imbalance of humors (Ikhtilāṭ-e-Akhlāṭ), accumulation of morbid matter (Mādda), weakness of nerves (Ḍa'f-e-Aʿṣāb), muscles, or ligaments, and sometimes involvement of adjacent organs such as kidneys or uterus. Classical Unani scholars such as Hippocrates (Buqrāt), Galen (Jālīnūs), Al-Rāzī, and Ibn Sīnā have extensively discussed back pain in their works, attributing it to causes like cold and moist temperament, phlegmatic predominance (Ghalaba-e-Balgham), retention of viscous matter, traumatic injury, excessive exertion, or sedentary lifestyle. According to Unani principles, pain (Wajaʿ) is produced either due to alteration in temperament, obstruction (Sudda), distension, or irritation of sensitive structures.

The Unani concept of Wajaʿ-ul-Ẓahr emphasizes the role of individual temperament, lifestyle factors, and environmental influences in disease causation. Based on etiopathogenesis, the condition has been classified into various types such as Wajaʿ-ul-Ẓahr Barid, Hār, Ratab, Yābis, and Māddī, each requiring a specific line of management. Therapeutic approaches in Unani medicine are based on the principle of Ilāj-bil-Ḍidd (treatment by opposites) and

include Ilāj-bil-Tadbīr (regimenal therapy), Ilāj-bil-Ghidhā (dietotherapy), and Ilāj-bil-Dawā (pharmacotherapy), aiming not only at pain relief but also at correction of the underlying humoral imbalance.

III. Asbab (Aetiology)

Most of the renowned *Unani* physicians described the causes of *Waja-uz- zahr* under the broad heading of *Waja ul mafasil*.

Buqrat first described its cause as predominance of *Balgham* (Phlegm) in the body.

Zakaria Razi, an eminent *Unani* physician described the disease in his book *Al- Hawi*, though his description is not systematically arranged, but covers all possible causes related to disease. According to him, the first and foremost cause of *Waja'ul mafasil* lies in the abnormal formation of *rutubat e mukhatia* (chyme) due to *naqs* (defect) in *Hazm e kabidi and Hazm e urooqi*, due to which the abnormal chyme produces abnormal humours, particularly *ghair tabyee balgham* (abnormal phlegm), which then gets accumulated and adheres in the joints of the body, thus causing swelling, tenderness and pain. Thus, we can say that the root cause of *Waja-uz- zahr* is the *naqs* in *hazm e kabidi* and *urooqi*, in which abnormal *balgham* gets accumulated in the joint structures of lumbosacral region. *Razi* also says that sometimes weakness or extensiveness of joint structures either congenitally or due to some other disease, gives the seat to accumulate the *ghair tabai akhlat* (abnormal humours) in general, or *ghair tabai balgham* (vitiated phlegm) in particular.[18]

According to *Ibn Sina*, *Waja-uz-zahr* arises from internal and external muscles, ligaments surrounding the lumbar and lumbosacral region due to *fasaad* in *mizaj* (*sue mizaj*). This *fasaad* in *mizaj* is due to surplus *burudat* and accumulation of *kham balgham* (raw phlegm).

He further stated that pain may also arise due to accumulation of *ghaleez riyah* in the lumbar and lumbosacral region.

Many injuries and conditions can cause lower back pain. This kind of pain is so common because lumbar (low back) vertebrae (bones) do a lot to support body, including:

- Providing stability for the rest of spine.
- Serving as a point of attachment for many muscles and ligaments that allow you to walk, run, sit, lift and move body in all directions.
- Supporting most of body's weight.

- Functioning as the center of body's balance.

With all these important functions, any issue with the structures in lower back can lead to pain. Specific causes of lower back pain include

- **Strains and sprains**: Strains and sprains are the most common causes of back pain. You can injure muscles, tendons or ligaments by lifting something too heavy or not lifting safely. Some people strain their back by sneezing, coughing, twisting or bending over.

- **Spinal fractures**: The bones in lumbar spine can break during an accident, like a car crash or a fall. Certain conditions (like osteoporosis) increase risk of fractures. Spondylolysis is a specific type of stress fracture or crack in spinal bones. It's common in young athletes.

- **Disk problems**: Spinal disks have the important job of providing a cushion between vertebrae. Disks can bulge from their position in spine and press on a nerve (pinched nerve). They can also tear (herniated disk). With age, disks can get flatter and offer less protection (degenerative disk disease).

- **Structural issues**: A condition called spinal stenosis happens when spinal column is too narrow for spinal cord. Something pinching spinal cord (like vertebral bone spurs) can cause severe sciatic nerve pain and lower back pain. Lumbar scoliosis can also lead to pain, stiffness and difficulty moving. Another structural issue that can cause low back pain is spondylolisthesis. It happens when a vertebra slips out of place, resting on the bone below it.

Fig. 03 Common causes of Low Back pain.

- **Arthritis**: Osteoarthritis is the most common type of arthritis to cause lower back pain. Ankylosing spondylitis, another type of arthritis, causes lower back pain, inflammation and stiffness in spine.

- **Disease**: Spine tumors, infections and several types of cancer can cause back pain. Other conditions can cause back pain, too, like kidney stones and an abdominal aortic aneurysm. Chronic inflammatory conditions, like fibromyalgia, can also result in lower back pain.

Other temporary causes of low back pain

Other common temporary causes of lower back pain include

- **Menstrual cramps**: Some menstruating people experience lower back pain or lower back cramps during their period.
- **Pregnancy**: Pregnancy can cause lower back pain, especially in the second and third trimesters. This is often due to hormonal changes, increasing weight from uterus and fetus, and a changing center of gravity.
- **Back labor**: This is pain and discomfort in lower back that happens during labor. It often occurs when the fetus is facing belly instead of back.

IV. Risk factors for low back pain

Some people are more likely to have lower back pain than others. Risk factors for lower back pain include

- **Age**: People over 30 are more likely to experience back pain. Vertebral disks wear away with age. As the disks weaken and wear down, pain and stiffness can result.
- **Weight**: People who have a body mass index (BMI) greater than 25 (have overweight or obesity) are more likely to have back pain. Excess weight puts pressure on joints and disks. Increasing weight in pregnancy can also put pressure on lower back.
- **Poor core strength**: Weakened abdominal muscles can't properly support spine, which can lead to back strains and sprains.
- **Overall health**: People who smoke, drink excess alcohol and/or get limited physical activity have a higher risk of back pain.
- **Occupation and hobbies**: Jobs and activities that require heavy lifting or frequent bending can increase risk of a back injury. Lower back pain is also very common in athletes.
- **Mental health conditions**: Studies show there's a connection between depression and back pain. But it's difficult to tell for sure if depression can cause back pain.

V. Pathophysiology of Low Back Pain

LBP may originate from nociceptive, neuropathic, or mixed mechanisms. Tissue injury or inflammation leads to the release of prostaglandins, bradykinin, and cytokines, which sensitize nociceptors and produce pain. Chronic inflammation results in muscle spasm, reduced mobility, and functional impairment (2).

Thus, anti-inflammatory and analgesic agents form the cornerstone of LBP management.

In Unani medicine, low back pain is termed “Waja-ul-Asfal-e-Zahr,” which often falls under the broader category of “Waja-ul-Mafasil” (joint pains). The pathology is interpreted through the lens of humoral imbalance (Ikhtilal-e-Akhlat) and derangement of temperament (Sue Mizaj). According to Unani scholars such as Ibn Sina, Zakariya Razi, and Jurjani, pain arises due to one or more of the following.

Tafarruq-e-Ittisal (discontinuity of tissue integrity), Imtela (accumulation of morbid matter in tissues), and Riyah (entrapment of gases) within the lumbar region. These morbid processes cause obstruction to the flow of Ruh (vital spirit) and Dam (blood), leading to pain and stiffness. Low back pain is most commonly associated with Sue Mizaj Barid wa Yabis (cold and dry temperament) that affects the muscles and ligaments of the back, resulting in reduced elasticity, stiffness, and chronic pain. In some cases, Rutubat (moisture imbalance) in the joints leads to heaviness and inflammation. The vertebral column and associated muscles are categorized among the Aza-e-Raeesa (vital organs), and their dysfunction leads to systemic weakness and limited mobility. Unani physicians like Jurjani and Razi have highlighted that sedentary lifestyle, excessive exertion, sexual indulgence, trauma, and exposure to cold or damp weather aggravate humoral imbalance, producing Waja-ul-Zahr. The Unani approach to treatment emphasizes restoration of humoral balance using Ilaj bil Tadbeer (regimenal therapy such as massage and hammam), Ilaj bil Dawa (pharmacotherapy, notably Habbe Suranjan), and Ilaj bil Ghiza (diet therapy). These methods aim to normalize Mizaj and eliminate Mawad-e-Fasida (morbid matter), providing both symptomatic and curative relief.

In Unani literature, low back pain is referred to as **Waja al-Ẓahr** (or *Dard-e-Pusht*), which falls under the broader category of *Waja al-Mafāṣil* (joint pains/arthritis). It is primarily understood as a disease involving abnormal temperament (*Sue Mizaj*) and accumulation of morbid humors in the muscles, ligaments, and nerves of the lumbar region.

A. Core Pathophysiological Principles

The fundamental cause of *Waja al-Ẓahr* is the accumulation of **Kham Balgham** (raw/thick phlegm) and, in some cases, the presence of **Riyah** (wind/gas) in the lumbar structures.

1. Defective Metabolism (Nuqṣ-i-Haḍm): The root cause is often a dysfunction in the hepato-vascular metabolism (*Haḍm Kabidi wa Haḍm Urooqi*), which leads to the production of abnormal morbid humors, particularly thickened, viscous phlegm (Ghayr Ṭabʻī Balgham).

2. Impaired Temperament (Sue Mizaj Barid): The affected area usually develops a "cold-dry" (Barid- Yabis) or "cold-moist" (Barid-Ratab) temperament. This coldness makes the humors thick and sticky, causing them to accumulate in the tissues.

3. Tafarruq-e-Ittiṣāl (Loss of Continuity): The accumulated thick humors (*Kham Balgham*) or visceral wind (*Ghalīẓ Riyah*) irritate the nerves and connective tissues by separating muscle fibers or pressing on nerves (especially in the periosteum), leading to pain.

B. Classification of Waja al-Ẓahr

Unani scholars have categorized the causes of *Waja al-Ẓahr* based on the humor or factor responsible

1. Based on Temperamental Derangement (Sū'-e-Mizāj)

- Wajaʿ-ul-Ẓahr Balghamī (Phlegmatic)
- Wajaʿ-ul-Ẓahr Damwī (Sanguine)
- Wajaʿ-ul-Ẓahr Ṣafrāwī (Bilious)
- Wajaʿ-ul-Ẓahr Sawdāwī (Melancholic)
- Wajaʿ-ul-Ẓahr Rihi

2. Based on Duration

- Wajaʿ-ul-Ẓahr Hād (Acute)
- Wajaʿ-ul-Ẓahr Muzmin (Chronic)

VI. Sign and symptoms of Low back pain. (*Waja al-Ẓahr*)

Lower back pain affects the lumbar region of spine or back. It can result from many different injuries and conditions.

Lower back pain can involve a wide spectrum of symptoms. Lower back pain may:

- Come on suddenly or appear gradually.
- Happen after a specific event, like bending over to pick something up. Paitient may hear a "pop" when it happens.

- Have an unknown trigger.
- Feel sharp or dull and achy.
- Come and go or be persistent.
- Radiate down to buttock or down the back of leg (sciatica).
- Feel worse in certain positions (like bending over or crouching down) and get better when lying down. Other symptoms of lower back pain can include:
- **Stiffness**: It may be tough to move or straighten back. Getting up from a seated position may take a while, and you might feel like you need to walk or stretch to loosen up. You may notice a decreased range of motion.
- **Posture problems**: Many people with back pain find it hard to stand up straight. You may stand "crooked" or bent, with torso off to the side rather than aligned with spine. lower back may look flat instead of curved.
- **Muscle spasms**: After a strain, muscles in lower back can spasm or contract uncontrollably. Muscle spasms can cause extreme pain and make it difficult or impossible to stand, walk or move.

VII. Ibuprofen: Pharmacological and Therapeutic Profile & Mechanism of Action in Low Back Pain

Ibuprofen is a widely used non-steroidal anti-inflammatory drug (NSAID) effective in the management of low back pain, particularly when pain is associated with inflammation, muscle spasm, or soft-tissue injury. Its therapeutic effects in low back pain are mediated through inhibition of inflammatory pathways and modulation of pain perception.

1. Cyclooxygenase (COX) Inhibition

Ibuprofen acts by reversibly inhibiting cyclooxygenase enzymes (COX-1 and COX-2), which are responsible for the conversion of arachidonic acid into prostaglandins and thromboxanes. Prostaglandins play a key role in producing pain, inflammation, and edema in the lumbar muscles, ligaments, intervertebral discs, and facet joints. Reduction in prostaglandin synthesis leads to decreased inflammatory response and pain relief.

2. Anti-inflammatory Action

By suppressing prostaglandin-mediated vasodilation and increased vascular permeability, ibuprofen reduces local inflammation, swelling, and tissue edema in the affected lumbar region. This is particularly beneficial in acute and subacute low back pain due to muscle strain, ligament sprain, or disc-related inflammation.

3. Analgesic Effect

Ibuprofen decreases peripheral nociceptor sensitization, thereby lowering the transmission of pain signals from the lumbar region to the central nervous system. It also reduces central prostaglandin levels, contributing to relief from pain at the spinal and supraspinal levels.

4. Reduction of Muscle Spasm–Associated Pain

Inflammation-induced pain often leads to reflex muscle spasm in the paraspinal muscles. By controlling inflammation and pain, ibuprofen indirectly helps in reducing muscle spasm, improving spinal mobility and functional activity.

5. Antipyretic Effect (Supportive Role)

Although fever is not a common feature of low back pain, ibuprofen's antipyretic action via hypothalamic prostaglandin inhibition supports its role in inflammatory conditions associated with systemic symptoms.

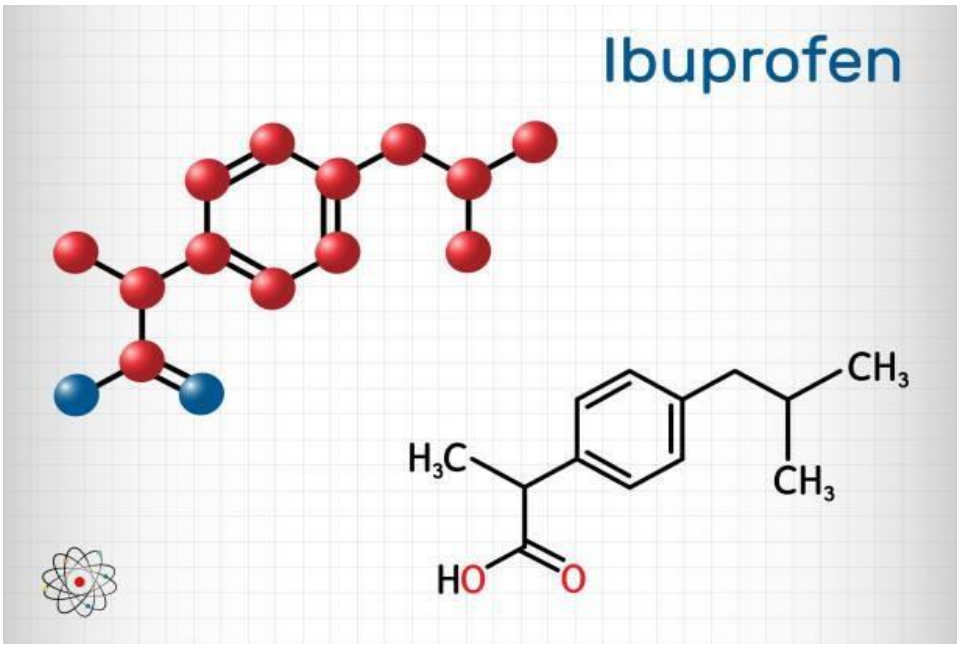

Fig. 03 Chemical structure of Ibuprofen.

- Therapeutic dose of Ibuprofen :200 mg orally every 4 to 6 hours; may increase to 400 mg orally every 4 to 6 hours as needed.

Maximum dose: 1200 mg/day

VIII. Habbe Suranjan: Unani Formulation and Mechanism

Habbe Suranjan is a classical Unani formulation documented in pharmacopoeias such as

Qarabadeen-e- Azam and Bayaz-e-Kabeer (5,6). Its chief ingredient, Suranjan (Colchicum luteum), contains colchicine, a potent anti-inflammatory alkaloid that inhibits microtubule polymerization and leukocyte migration to inflamed tissues.[7] Other ingredients such as Asgand (Withania somnifera) and Sibr Zard *(Aloe barbadensis)* synergistically enhance absorption and provide additional anti-inflammatory and analgesic benefits.[8] Unani texts describe Habbe Suranjan as Musakkin-e-alam (pain reliever) and Muhallil-e-waram (anti-inflammatory), making it effective in Amraz-e-Mafasil (joint disorders), Waja-ul-Mafasil, and Lumbago.[9]

IX. Mechanism of Action of Habb-e-Suranjān in Wajaʿ-ul-Ẓahr (Low Back Pain)

Habb-e-Suranjān is a well-known Unani compound formulation widely used in the management of musculoskeletal and inflammatory conditions such as Wajaʿ-ul-Ẓahr, Wajaʿ-ul-Mafāṣil, and Niqris (gout). The principal ingredient, Suranjān (Colchicum autumnale), along with other constituents, acts through multiple mechanisms to alleviate pain and correct the underlying humoral imbalance.

1. Musakkin-e-Waja (Analgesic Action)

Habb-e-Suranjān possesses potent pain-relieving properties. In Unani terms, it reduces pain by correcting Sū'-e-Mizāj and decreasing irritation of nerves (Taskeen-e-Aʿṣāb). It alleviates stiffness and discomfort of the lumbar muscles and joints, thereby improving mobility in low back pain.

2. Muhallil-e-Waram (Anti-inflammatory Action)

The formulation helps in resolving inflammation (Waram) by dispersing accumulated morbid matter (Mādda-e-Fāsida) from the affected site. This action is especially beneficial in Māddī and Balghamī types of Wajaʿ-ul-Ẓahr, where inflammation and heaviness predominate.

3. Munzij wa Mushil-e-Balgham (Concoctive and Purgative Action)

According to Unani principles, pain often arises due to accumulation of abnormal humors, particularly Balgham. Habb-e-Suranjān helps in concoction and elimination (Istifrāgh) of viscous phlegmatic humor, thereby removing the root cause of pain and preventing recurrence.

4. Muharrik-e-Harārat-e-Gharīziya (Enhancement of Innate Heat)

By strengthening Harārat-e-Gharīziya (innate heat), the drug improves metabolism and tissue

nourishment (Taghziya), aiding repair of muscles, ligaments, and nerves of the lumbar region. This is particularly useful in chronic and cold-dominant low back pain.

5. Mufattiḥ-e-Sudūd (Deobstruent Action)

Habb-e-Suranjān helps in removing obstructions (Sudūd) in the channels, thus improving circulation of humors and nutrients to the affected area. This results in reduction of stiffness and restoration of normal function.

6. Muqawwi-e-Aʿṣāb wa Mafāṣil (Neuro-musculoskeletal Strengthening)

The formulation strengthens nerves and joints, reducing susceptibility to repeated episodes of low back pain, especially in elderly patients or those with chronic degenerative changes.

- **Modern Pharmacological Correlation**

From a modern perspective, Suranjān contains colchicine, which inhibits microtubule polymerization, suppresses neutrophil migration, and reduces inflammatory mediators. This explains its anti-inflammatory and analgesic effects, supporting its traditional use in low back pain and other inflammatory musculoskeletal disorders.

- Therapeutic dose of Habb e Suranjan: 3gms twice a day

X. Comparative Analysis of Ibuprofen and Habbe Suranjan

Both Ibuprofen and Habbe Suranjan provide symptomatic relief in LBP through anti-inflammatory mechanisms, albeit via different pathways. Ibuprofen acts by inhibiting prostaglandin synthesis, while Habbe Suranjan modulates inflammatory pathways through natural alkaloids and antioxidants. Modern clinical trials indicate that Ibuprofen reduces pain scores effectively within 48–72 hours of therapy. Meanwhile, Unani clinical observations suggest that Habbe Suranjan demonstrates gradual but sustained relief with improved mobility and fewer relapses. Importantly, the Unani formulation is associated with minimal gastrointestinal or renal toxicity when used in therapeutic doses, unlike long-term Ibuprofen use. Thus, Habbe Suranjan can be considered a safer alternative for chronic LBP management.

- Research indicates Habb-e-Suranjan is safe for the kidneys at therapeutic doses, whereas long-term use of Ibuprofen (400 mg/TID) causes significant nephrotoxic effects and increases BUN/Serum Creatinine levels.

XI. DISCUSSION

The comparative assessment of Ibuprofen and Habbe Suranjan reveals the strengths and limitations of both therapeutic modalities. Ibuprofen offers quick relief, making it suitable for acute episodes of pain, while Habbe Suranjan aligns better with chronic and recurrent pain conditions due to its holistic approach and safety profile. Integrative use under medical supervision could optimize pain control while minimizing adverse effects. Further randomized controlled trials are warranted to establish pharmacokinetic equivalence, safety, and efficacy of Habbe Suranjan in comparison to standard NSAIDs.

XII. CONCLUSION

Ibuprofen remains a gold-standard NSAID for the short-term management of low back pain, whereas Habbe Suranjan represents a valuable Unani alternative offering anti-inflammatory and analgesic benefits with fewer side effects. The integration of Unani formulations like Habbe Suranjan into evidence-based practice may provide safer long-term management options for musculoskeletal disorders.

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