

Management of *Waja' al-Rakba* (knee Osteoarthritis) by *TakmīdHārRatab* (hot and moist fomentation) and *Habb-i-Sūranjān*: A case study

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Abstract:

Knee osteoarthritis is a painful condition that represents the degeneration of the cartilages and osteophyte formation in knee joint that affects millions of people worldwide. In *Unāni* System of Medicine, it has been treated by a number of single or compound drugs and various regimens of *Ilajbi'lTadbīr* such as cupping, venesection, massage, hot fomentation, irrigation etc. Among these regimens *Takmīd* (fomentation) either moist or cold is being used with the aim to resolve the swellings caused by *rīh* (gas), to reduce the pain and to make soften, and also for diversion and evacuation of *Mawād-i-fāsida* (morbid materials) from the affected parts. A patient with chief complaints of pain in both knee joints, along with the swelling and mild tenderness feeling severe pain while performing daily activity for last 1 year was treated at IPD of the Hospital National Institute of Unani Medicine, Bangalore, to evaluate the efficacy of *TakmīdHār Ratab* with a warm decoction of drugs including *Babūna* (dried leaves and branches), *Nākhūna* (dried legumes), *Makokhushq* (dried fruits), *Gul-i-tīsu* (dried flowers), *SūranjānTalkh* (dried corm) and *Namak-i-lāhori* in crude form locally for 10 sittings of alternate application. Along with local, oral compound drug *Habb-i-Sūranjān* 2 two times a day for 30 days. The patient was assessed at zero day and 30th day on the basis of changes in subjective and objective parameters, with the help of Knee injury and Osteoarthritis Outcome Score (KOOS). At the end of the treatment patient got significant relief in subjective and objective parameters. The present study reveals that *TakmīdHār Ratab* along with *Habb-i-Sūranjān* is pills safe and effective therapy in the treatment of *Waja' al-Rakba* without any side effect. Hence this case may be recommended for further larger sample sized study.

Key words: *Habb-i-Sūranjān*, Knee Osteo Arthritis, Regimenal therapy, *Takmīd Hār Ratab*, *Unani*, *Waja' al-Rakba*

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Introduction:

Osteoarthritis (OA) is a disease of abnormal joint biomechanics with slow deterioration of articular cartilage; its pathological changes are biochemically mediated. Osteoarthritis of the knee is one of the most common and debilitating areas of joint degeneration. ^[1] Knee OA targets the patella-femoral and medial tibio-femoral compartments of the knee. ^[2] Its high prevalence, especially in the elderly, and the high rate of disability related to disease make it a leading cause of disability in the elderly. ^[3] Clinically, the condition is characterized by joint pain, tenderness, limitation of movement, crepitus, occasional effusion, and variable degrees of local inflammation. ^[4] Conventional treatments for OA include pain medication (non-steroidal anti-inflammatory drugs and cyclooxygenase-2 inhibitors), exercises, hot and cold therapy, corticosteroid injections and eventually, surgery to repair the joint and lastly joint replacement. Despite conventional treatment, OA is often progressive and frequently leads to chronic pain and disability. ^[5] There are several treatment options available for the osteoarthritis at present with their own limitations. However, there is no cheap,

effective and side effect less treatment for OA which can alleviate symptoms and cure the disease. Hence, there is an increased demand to discover cheap, effective and less toxic drug makes a need to validate the time tested traditional drugs scientifically for their therapeutic efficacy.

As far as *Unani* System of Medicine is apprehensive, *Waja' al-Rakba*(Knee OA) is not revealed at all in any traditional script, but the term *Waja' al-Mafāsil* has been used frequently to characterize joint pain. It encompasses all types of joint pain such as *Niqris*(gout), *Waja' al-Warik*(ischial pain), *Irq al-nasa*(sciatica), *Waja' al-Rakba*(Knee pain) etc. ^[6] so *Waja' al-Rakba* is considered a type of *Waja' al-Mafāsil* which has been described by almost all the eminent *Unāni* physicians. Most of the *Unāni* physicians like *Buqrāt*(Hippocrates 460-377 B.C.), *Jalinūs*(Galen 129-200 AD), *Rabban Tabri* (770,780-859 AD), *Rāzi* (850-923 AD), *Majūsi*(930-994) and *Ibn Sīna*(980-1037 AD) have explained *Waja' al-Mafāsil* on the basis of quantitative and qualitative derangement of *Akhlāt* (humours). ^[7] *Zakaria Rāzi* described that the main cause of production of pain in joint is basically due to

the accumulation of abnormal humours inside the joint spaces and these abnormal humours are formed from abnormal chyme. [6] Thus, it can be said that main cause is considered the accumulation of abnormal *Balgham* (phlegm) in the joint structures which leads to *Sū-i-Mizāj* giving rise to the pain and tenderness in the joints. When this condition develops due to the involvement of abnormal *Balgham*, it is known as *Waja' al-MafāṣilBalghami*. Its clinical presentation is very much resembles with the chronic osteoarthritis of modern medicine, which can affect different joints of body.

When it develops in knee joint and causes knee pain, then it is known as *Waja' al-Rakba* (knee OA). *Waja' al-Rakba* has been treated by eminent *Unāni* physicians since ancient times. They have described four modes of treatment i.e. *'Ilājbi' lTadbīr* (regimenal therapy), *'Ilājbi' lDawā* (pharmacotherapy), *'Ilājbi' lGhizā* (dietotherapy) and *'Ilājbi' lYad* (surgery) for the management of *Waja' al-Rakba*. [8] Among them, *'Ilājbi' lTadbīr* is one in which various regimens like *Dalk* (massage), *Fasd* (venesection), *Dimād* (paste), *Takmīd* (fomentation), *Irsāl-i-'Alaq* (leeching) and *Hijāma* (cupping) etc. are

used to provide relief to the patient. From the above enumerated regimens, *Takmīd* (fomentation) is one which is believed to provide relief to the patient of *Waja' al-Rakba* by evacuating the *Mawād-i-Fāsida* (morbid matters).⁷

Takmīd (fomentation) involves applying heat either moist or dry and cold (by ice) on joints to improve the symptoms of osteoarthritis and it can be done with packs, towels soaked in decoction of drugs and also the application of warm wax etc. Heat may work by improving circulation and relaxing muscles, while cold may numb the pain, decrease swelling, constrict blood vessels and block nerve impulses to the joint. [9] In this case *Takmīd Hār Ratab* (hot and moist fomentation) was undertaken with a decoction of some Unani drugs, which are having *Mohallil* (anti-inflammatory) and *Musakkin* (analgesic) properties such as *Bābūna* (*Matricaria chamomilla*), *Nākhūna* (*Astragalus homosus*), *Mako Khushk* (*Solanum nigrum*), *Gul-i-tīsū* (*Butea frondosa*), *Sūranjān Talkh* (*Colchicum luteum*) and *Namak-i-Lāhori* (Sodium chlorate).

Case History

A 61years male patient was admitted in the male ward of National Institute of Unani Medicine Bangalore, Karnataka in the month of March 2018with the chief complaints of the pain in both knee joints, along with the swelling and mild tenderness for last 1 year. Patient felt severe pain while performing daily activity. The pain was aggravated during walking, climbing stairs and doing heavy work. There was cracking or grinding with joint movement. He had no history of hypertension, metabolic disease, tuberculosis and trauma or any other injury on his knee. He had no family history of such complaints also. He had taken occasionally non-steroidal anti-inflammatory drugs.

Examination of the patient

On general examination, vitals were within normal limit and no abnormality was detected through systemic examination. On physical examination patient's gait was Antalgic due to pain, crepitus present on passive knee flexion on knees, mild swelling and tenderness were also present, there was no popliteal swelling. Painful and restricted movement and bony enlargement were present.

Based on literature, special questions were asked relevant to knee OA such as, acute injury, swelling, locking of knee, generalized pain, pain at rest, pain rising from chair, pain climbing stairs, inactivity stiffness and night pain etc. Before starting the procedure patient underwent thorough some precautionary lab investigations like hemoglobin percentage (Hb%), erythrocytic sedimentation rate (ESR), fasting blood sugar (FBS), post prandial blood sugar (PPBS), Blood Urea, Serum Creatinine, Serum Uric acid, Rh factor, Antistreptolysin O Titer , C-Reactive Protein, serum glutamic oxaloacetic transaminase(SGOT)&serum glutamic pyruvic transaminase(SGPT). X-ray reveals bilateral tibial spikes were normal; osteophytes were seen in both knee joint, bilateral knee joint spaces were reduced. Based on the above findings the case was diagnosed as *Waja' al-Rakba* (Knee OA).

Materials and Method:

For the procedure of *TakmīdHārRatab*(hot and moist fomentation), dried crude drugs were obtained from local market including *Bābūna* (*Matricariachamomilla*), *Nākhūna*(*Astragalushomosus*), *MakoKhushk* (*Solanum nigrum*), *Gul-i-tīsū* (*Butea*

frondosa), *SūranjānTalkh* (*Colchicum luteum*) and *Namak-i-Lāhori* (Sodium chloride). They were soaked for half hour in *Ab-i-Taza* (fresh water) and boiled till the water remains half, then after filtration a luke warm *Joshānda* (decoction) approx. 40°C was obtained. [10] Then with the help of two small towels procedure was started, one by one both towels dipped in *Joshānda*(decoction) and wrapped around the knees for 15 minutes. Total 10 sitting of *Takmīd* was done on alternate days. Along with *Takmīd* (fomentation), *Habb-i-Sūranjān* prepared in the pharmacy of National Institute of Unani Medicine, Bangalore has been administered 2 tablet two

times in a day for 30 days/per orally, so the study protocol was of 30 days.

Assessment of efficacy

The patient was assessed at zero days and at 30th day with the help of Knee injury and Osteoarthritis Outcome Score (KOOS) [13]

Result and Discussion:

KOOS consists of 5 subscales; pain, other symptoms, function in daily living (ADL), function in sport and recreation (Sport/Rec) and knee related Quality of life QoL. Traditionally in orthopedics, 100 indicate no problem and 0 indicates extreme problem. Assessment scores at 0 and 30th day are presented in table-1

Table -1: Assessment scores before and after treatment:

Parameters	BT score (at 0 day)	After Treatment at 30 days
Pain	52.77	69
Other symptoms	39.5	82
Activities in daily living (ADL)	41.17	76
Sports and Recreation	Not applicable	Not applicable
Quality of life (QOL)	31.25	75

Table-2: Ingredients of *Habb-i-Sūranjān* for oral use

Unani name	Botanical name	Temperament	Action in internal use	Quantity
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<i>SibrSaqūtari</i>	<i>Aloe barbadensis</i>	Hot and Dry in 2 nd degree ¹¹	Deobstruent, resolvent of gasses ¹¹	40 darhum (140 gm) ¹¹
<i>Post HalilaZard</i>	<i>Terminalia chebula</i>	Cold in 1 st & Dry 2 nd degree ¹¹	Purgative of yellow bile ¹¹	20 darhum (70 gm) ¹¹
<i>Sūranjānshīrin</i>	<i>Colchicum luteum</i>	Hot in 3 rd and Dry in 2 nd degree ¹¹	Anti-inflammatory, analgesic, deobstruent ¹¹	20 darhum (70 gm) ¹¹

Table-3: Ingredients of the *TakmīdHārRatab*(hot and moist fomentation) for local procedure

Unani name	Botanical name	Temperament	Action in local application
<i>Bābūnah</i>	<i>Matricaria chamomilla</i>	Hot in 2 nd & Dry in 1 st degree	Anti-inflammatory, demulcent, nerve tonic ¹²
<i>Nākhūnah</i>	<i>Astragalus hamosus</i>	Hot in 2 nd & Dry 2 nd degree	Anti-inflammatory, rubifacient, desiccant, softening the inflammation ¹²
<i>Makokhushq</i>	<i>Solanum nigrum</i>	Cold in 2 nd & Dry 2 nd degree	Demulcent, desiccant, anti-inflammatory, divergent ¹²
<i>Gul-i-tīsu</i>	<i>Butea frondosa</i>	Cold & Dry (near to hot)	Anti-inflammatory, astringent, analgesic ¹²
<i>Sūranjāntalkh</i>	<i>Colchicum luteum</i>	Hot & Dry in 3 rd degree	Anti-inflammatory, deobstruent, Analgesic ¹²
<i>Namak-i-lāhori</i>	<i>Sodium chlorate</i>	Hot & Dry in 2 nd degree	Antiseptic, anti-inflammatory ¹²

The treatment objectives are to hold-up the degenerative process and to minimize symptoms, so that the patients of OA can move freely to perform their day to day activities by themselves. Unani System of medicine provides a better, less side effect,

economical and effective way of treatment by its various means like '*Ilājbi'lTadbīr*(regimental therapy), '*Ilājbi'lGiza* (dietotherapy), '*Ilājbi'lDawā* (pharmacotherapy) and '*Ilājbi'lYad* (surgery). According to literature review it is

found that Unani physicians were used these methods as single as well as combined way. In this study *TakmīdHārRatab* (hot and moist fomentation), a procedure of regimental therapy of anti-inflammatory herbo-mineral formulation was done along with the administration of *Habb-i-Sūranjān* (a Unani compound in the form of pills) per orally. The all ingredients which were used for *Takmīd* have anti-inflammatory, demulcent, analgesic, divergent, desiccant properties (Table-3) by which we can say that the decoction having some chemical constituents of above said properties work locally by doing *imāla-i-mawād* (diversion of morbid matters) from diseased part to healthy part followed by resolving the inflammatory condition of the knee. The astringent effect of the drugs strengthen the knee joints. Oral administration of *Habb-i-Sūranjān* can affect by its *mushil* (purgative), anti-inflammatory, analgesic properties as the ingredients in the compound have in it (Table-2). By their purgative and diuretic properties the morbid matter collected in joints may evacuated from the diseased part through defecation and urination.

Conclusion:

Present case report reveals that applying *Takmīdharratab* (hot and moist fomentation) with a decoction of and *musakkin* drugs with *Habb-i-sūranjān* is quite effective in the management of *Waja' al-rakba* (Knee OA). Therapy was found to be safe and well tolerated by patient. Hence it is suggested that further evaluation is necessary for the scientific conclusion. More well designed study with a standardized protocol and adequate number of participants is needed to evaluate the effects of *Takmīd* (fomentation) as adjuvant therapy with other Unani oral compound drugs in the treatment of OA of the knee.

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