AN ANALYTICAL REVIEW ON NUTOOL (IRRIGATION) THERAPY

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ABSTRACT

Nutool therapy, also known as irrigation is a popular mode of treatment in Unani medicine which refers to the pouring or dripping of drugs on body parts. Usually decoctions of drugs and medicated oils etc are used for this purpose. The benefits achieved are an amalgamation of neurological effects, psychological effects and pharmacological actions of the drugs used. Nutool plays an especially important role in diseases where it is required to alter the temperament of an organ, to disperse toxic humors or to strengthen an organ. The procedure is carried out on a daily basis for a fortnight to achieve sustained results. It is specifically useful as an adjuvant treatment in the management of CNS disorders like headache, insomnia, migraine, amnesia, melancholia, vertigo, epilepsy etc; also in certain other disorders like cystitis, mastitis, arthralgia etc. For this purpose, specific drug formulations have been prescribed in Unani texts to be used for nutool therapy. The need of the hour is to further evaluate these age-old prescriptions on modern parameters.

Keywords: Nutool, Sukoob, anxiolysis, temperament.

INTRODUCTION

Nutool (irrigation) or pouring of medication over various body parts is one of the favoured modes of treatment in Unani medicine under Ilaj bil Tadbeer. It is a unique therapy in which medicated oils or decoction of herbs are poured continuously for a predetermined period of time over a specific area of the body.¹ The therapeutic effects are thought to be brought about, in part, by the medicinal action of the drug used, and more importantly, by the mechanical effect of the dripping of oil or decoction. The term sukoob is used synonymously with nutool at some places.² The basic distinction between nutool and sukoob is of the distance from which the drugs are dripped-if the drugs are poured from a close distance, the procedure is known as sukoob, and if the distance is increased, it is known as nutool.³

Ibn Sina states that it is one of the best treatment when resolution of inflammation is required; and also in those cases where the temperament of a part of the body has to be altered along with strengthening it. Therefore, nutool-e-muqawwvi (nutool done for the purpose of strengthening an organ) is initiated with warm drugs if there is no sign of inflammation, and then nutool with cold drugs is done. However, if any inflammation is present, the therapy should be initiated with cold drugs so that the inflammation is resolved, and then warm drugs are used. For the same reason, the treatment of erectile dysfunction also includes the nutool of external genitalia alternatively with hot and cold water.⁴ The rationale behind this is that the warmth relaxes the tissues and helps in better oxygenation, while the cold drugs used after that helps in restoring normal tonicity.

For the purpose of nutool, the affected area should be kept uncovered. Wherever possible, nutool is preferably done in supine position. Then medication or oil at the recommended temperature is poured manually or with the help of newer apparatus available, continuously for about 20-45 minutes from a height of approximately 0.5 ft. If nutool is done on the forehead, care should be taken to cover the eyes with sterile gauze to prevent spilling of medication into the eyes.⁴

PHYSIOLOGICAL EFFECTS OF NUTOOL

The basic underlying idea behind nutool therapy in Unani texts is that it helps in dissolution of wastes from the diseased part, modifies the local temperament and helps in dispersing toxic substances from the diseased area.¹ The clinical uses of nutool in Unani medicine usually comprise of one or more of the following indications: first, to disperse toxic matter, the drugs used for nutool for this purpose are always used at a warm temperature; second, for analgesia and relaxing of tissues, such drugs should be of a warm temperament; third, to cause vasoconstriction, for instance, nutool with cold water may be done on an injury to prevent the development of inflammation. The cold compression advised in modern day medicine for acute inflammations or after surgeries is done for the same reason.
reason. Fourth indication is strengthening of tissues for which drugs are used at a lower temperature.  

With the recent advances in medical science, however, there has been a much deeper understanding into the intricacies of physiological changes induced by nutool. The simple act of pouring of drugs from a distance has multidimensional effects which include stimulation of different nerve plexus, glands and brain cells; it also induces relaxation similar to that in meditation which is reflected by decreased heart rate, bradycardia, lowered sympathetic tone, slowing of alpha waves on EEG, decreased tidal volume and CO₂ excretion. Nutool on forehead is especially known to have psychoneuroimmunologic effects which lead to an altered state of consciousness which also leads to anxiolysis. Biochemical changes include suppression of noradrenaline, decrease of PMN/lymphocyte ratio and alpha receptors which suggest a sympathetic suppression rather than parasympathetic activation. The impulses from the forehead cause a stimulation of the trigeminal nerve and also a somato-autonomic reflex and changes in levels of various neurotransmitters including serotonin and catecholamine, resulting in sympathetic suppression and physioimmunologic changes of peripheral circulation and natural killer cell activity.

A more detailed study into this effect reveals that the stimulus from the skin over the forehead is conveyed by the ophthalmic branch of trigeminal nerve to the reticulospinal neurons. A small fraction of this causes an immediate motor response and much of the remaining is stored for future control of motor activities. Therefore, repeated stimuli are needed for consolidation of this information which needs 5-10 minutes for minimal consolidation and about one hour for stronger consolidation. This explains the practice of carrying out nutool for about 45 minutes. Further, to achieve permanent effect of nutool, there must be change in response characteristics of different neuronal pathways, which may be brought about by regular therapy for a fortnight. Regular or continuous pressure input generates continuous impulse to the central nervous system (CNS) thereby continuously stimulating the CNS. Practicing this procedure regularly for 15 days may lead to long lasting stimulation of the CNS.

Although proper scientific studies are not available on the therapeutic benefits of nutool on other body parts, it is observed that nutool induces a feeling of relaxation. Also, the decoction or oils used for nutool are absorbed through the skin which has curative benefits. Therapeutic benefits are also brought about by the use of specific drugs for nutool. It was observed in a recent study that lavender oil has better and more potent anxiolytic effects when dripped on forehead as compared to plain sesame oil. It was hypothesized that the difference is due to the presence of relaxing essential oils in lavender. Another controlled study on nutool therapy compared the effects of nutool with roghan-e-hanafsha and roghan-e-gul on primary insomnia patients. Although the severity of insomnia decreased in both the groups, yet it was observed that the use of the above-mentioned oils significantly enhanced the efficacy of the therapy as evidenced by the improvement in sleep latency, day-time somnolence, dysfunctional and mental stress and depression.

**PRACTICAL APPLICATIONS IN UNANI MEDICINE AND SCIENTIFIC VALIDATION**

Disease management in Unani medicine takes into account the nature and pathology of the disease, general constitution and nature of the patient; with special emphasis on the temperament. All diseases are known to produce certain specific humoral and temperament changes in the human body which may be identified by the aijas-e-asha (ten signs) described in the texts. Therefore, drugs are prescribed after taking into account the temperamental abnormalities of the patient, which is known as ilaj bil zid, i.e., the drugs to be prescribed are such that they produce a temperament change opposite to that induced by the disease condition. Below listed are some of the common disease conditions and the recommended formulations of nutool as an adjuvant therapy.

**Headache:** In Suda'-e-haar (headache caused due to increased heat/hot humors)-the following are recommended:

Make a decoction of Jaw (Hordeum vulgare), peel of kadau (Laginaria siceraria), Tukhme kahu (Lactuca sativa Linn seed), isapghol (Plantago ovate seeds), Banafsha (Viola odorata), Khatmi (Althea officinalis seed), neelofer (Nelumbium speciosum) in water and pour it over the scalp. Another prescribed treatment is a decoction of Banafsha (Viola odorata), grinded jaw (Hordeum vulgare), ground seeds of kadau (Laginaria siceraria), Khurfu (Portulaca oleracea), Katan (Linum usitatissimum), peel of opium (papaver somniferum), root of luffah (Arropa belladonna), Khatmi (Althea officinalis seed), Tukhme Kahu (Lactuca sativa Linn seed), barg-e-bed (leaves of Salix alba), rose (Rosa centifolia). The decoction is then poured over the scalp of the patient, and then followed by nutool with roghan-e-banafsha mixed in milk. This is especially recommended for headache caused by hot humors and associated insomnia.

It is also advisable to make a decoction of gul-e-neelofer (Nelumbium speciosum), khubazi (Malva sylvestris), peel of opium (papaver somniferum) and ground Jaw (Hordeum vulgare) and use it for nutool on the head. In all types of headache, nutool is done on the basis of ilaj bil zid, i.e. if headache is caused due to humors having a hot temperament, medications having cold temperament should be used for nutool.

In suda-e-barid (headache caused due to a predominance of cold temperament or cold humors), the following medications are recommended for nutool on the head:

Ustokhudooos (Lavendula stoechas), barg-e-ghaar (Laurus nobilis), Qaisoom (Artimisia abrotanum), Hulba (Trigonella foenum seed), wheat husk, table salt, babuna (Matricaria chamomile), barg-e-turanj (Citrus modica leaves), Badranjboya (Melissa parviphila herb), Sacij (Cinnamomum obtusifolium leaf), qaranfal
(Syzygium aromaticum), badyan (Foeniculum vulgare Mill), behk-e-badyan (root of Foeniculum vulgare Mill), behk-e-karafs (root of Carum roxburghianum), rose, pudina (Mentha arvensis), sudab (Ruta graveolence) and hasha (Thymus vulgaris)-take all medicines in equal amount and boil them in water. Use this water for nutool on the forehead, it can also be used for inhalation of vapours, fomentation after dipping a cloth in it, and the medicine left after boiling can be made into a paste and used for anointing on the head.\textsuperscript{12}

Migraine: In a patient of migraine having a hot temperament (shaqiqa haar), it is advisable to first expel the disease-causing matter with the prescribed medicines, if the disease still persists, then make a decoction of khoshkhkhash (Papaver somniferum), banafsha (Viola odorata), and wheat husk and use it for nutool on the head.\textsuperscript{12}

Meningitis: For Sarsam saudavi (menigitis predominated by melancholic humors), since melancholic humor has a dry temperament, the nutool should be done by medications having a moist temperament; however, they may be used after medical expulsion of vicious humors has been done. For nutool, prepare a decoction of 10 gms each of babuna (Matricaria chamomile), shibt (Anethum sowa), barg-e-rehan (Ocimum sanctum), banafsha (Viola odorata), gul-e-nargis (Narcissus tazetta flowers) and add roghan-e-babuna, roghan-e-kunjad, roghan badam and milk. When it is lukewarm, use for nutool on the forehead.\textsuperscript{12} For meninitis, the drugs used for nutool should not be having astringent properties. Ibn Sina recommends the use of khashkhkhash as nutool to induce relaxation and the addition of babuna (Matricaria chamomile) so that the inflammation is resolved.\textsuperscript{13}

Insomnia: A decoction of banafsha (Viola odorata), neeolfe, rose, grilled seeds of kahu, kishneez sabz (Coriandrum sativum), khashkhash, and crushed seeds of jaw may be used for nutool on the head.\textsuperscript{12} Since a dry temperament leads to insomnia and vice versa, any nutool which is prescribed for insomnia should always contain medicines having a moist temperament.\textsuperscript{14}

In insomnia caused due to old age, daily nutool is prescribed with a decoction of kashk-e-jaw (A special preparation of Hordeum vulgare seeds in which they are boiled in water, then the seeds are strained and boiled in fresh water again. Then they are grilled into a paste), babuna (Matricaria chamomile), and Ughuwan (Pyrethrum parthenium).\textsuperscript{12,15}

For insomnia associated with melancholia: A decoction of khashkhkhash (Papaver somniferum seeds), babuna (Matricaria chamomile), and Ughuwan (Pyrethrum parthenium) is beneficial for insomnia.\textsuperscript{12,13}

Melancholia: For a patient of melancholia, nutool on the head is also recommended to expel the saudavi matter from the brain and also to correct the abnormal temperament. For this purpose, the drugs like shibt (Anethum sowa), sosan (Iris florentina), babuna (Matricaria chamomile) and nakhuna (Trigonella uncata) are recommended.\textsuperscript{14} If a patient of melancholia shows signs of cold temperament, then nutool with oils having a hot temperament and the following drugs is recommended: babuna (Matricaria chamomile) 25 gms, nakhuna (Trigonella uncata) 25 gms, barg-e-badranjboya (Nepeta hindostana), barg-e-saru (leaves of Cupressus sempervirens), jaw al-saru (Fruit of Cupressus sempervirens), flowers of henna ( Lawsonia alba)-25 gms each, ushna (Permelia perlata), barg-e-khubazi (Malva sylvestris leaves), barg-e-khatmi (leaves of Althea officinalis) and wheat husk. Boil all drugs and pour on the head continuously when warm.\textsuperscript{16}

Amnesia (complete loss of memory): A decoction of babuna (Matricaria chamomile), nakhuna (Trigonella uncata), qurtum kofa (Carthamus victorious, grilled), khatmi (Althea officinalis) or barg-e-khatmi (leaves of Althea officinalis) may be used for nutool. While doing nutool, the scalp should be gently massaged continuously with any soft object.\textsuperscript{16}

Paralysis: Take 450 gms of vinegar and add 35 gms of rose oil. Then heat this mixture on slow flame till the vinegar is burnt off. Strain the mixture and use it for nutool on the head.\textsuperscript{16}

Vertigo caused due to phlegmatic humors: Nutool on the head with a decoction of babuna (Matricaria chamomile), nakhuna (Trigonella uncata), marzanjosh (Origanum majorana), saatar (Thymus serpyllum) and nammam (Ocimum basilicum) is prescribed.\textsuperscript{12}

Epilepsy: To help in the release of vicious humors, decoction of mulattif (attenuant) drugs such as babuna (Matricaria chamomile), nakhuna (Trigonella uncata) and marzanjosh (Origanum majorana) may be used for nutool on the head.\textsuperscript{12} In addition, shibt (Anethum sowa) and branjasif (Artemisia abrotanum) may also be added while making the decoction. However, if the disease is caused due to bile, then drugs used for nutool should be of cold temperament.\textsuperscript{17}

Mania: For treatment of mania, frequent nutool, up to five times a day is effective, especially if done after expelling vicious matter with medicines. The drugs included for nutool should be moist and cold in temperament.\textsuperscript{13} For nutool, banafsha (Viola odorata), neeolfe (Nelumbium speciosum), flowers of khatmi (Althea officinalis), sweet basil (Ocimum basilicum), kashk-e-jaw (Hordeum vulgare), leaves of bad (Salix alba), rose petals, leaves of kahu (Lactua sativa), fresh leaves of maurid (Myrtus communis), leaves of mako (Solanum nigrum)-all are taken in equal quantity and decoction is prepared. This is used for nutool while the patient is in hamman.\textsuperscript{14} For treating mania, the following nutool is also effective: dried banafsha 25 gms, fresh banafsha 25 gms, sapistan 25 gms, grinned jaw 50 gms, wheat husk 50 gms, rose 50 gms, barg-e-kammi (Murraya paniculata leaves)-2 fistful (approx 50 gms), barg-e-isapghol or barg-e-khubazi-1 fistful (approx 25 gms)-boil all drugs and pour over the soft palate so that the effect reaches brain.\textsuperscript{16}

Conjunctivitis: If conjunctivitis is caused by cold humors, the nutool on the head with a decoction of babuna, rose and marzanjosh (Origanum majorana).\textsuperscript{17}

Pleuritis: For relief of pain in pleuritis, nutool with hot water on the affected area helps in relieving pain.\textsuperscript{12}
Renal stones: Take 6 gms each of gul-e-tesu (flowers of Butea monosperma), gul-e-kasam (Carthamus tinctorius flowers), tukhm-e-kharpaaz (Cucumis melo seed), tukhme khayarain (Cucumis sativus seed) and khar khasak (Triabulus terrestris) and make a decoction; this is used for nutool over the area of pain.18 For calculi in the urinary bladder, nutool with a decoction of babuna (Matricaria chamomile), nakhuna (Trigonella uncata), khatmi (Althea officinalis) and wheat husk is recommended over the pelvic region.19

Cystitis: Nutool with warm roghun-e-ward mukarrar (a special type of concentrated rose oil) on the pelvic region is effective in resolving the inflammation, especially if it involves the neck of bladder.19

Dysuria: If dysuria is caused due to any wound in the urinary tract, then nutool on the pelvic region with a decoction of babuna (Matricaria chamomile), nakhuna (Trigonella uncata), pudina (Mentha arvensis), qaisoom (Artemisia abrotanum) and wheat husk is recommended to accelerate healing.14

Alopecia: If alopecia has been caused due to excessive heat, then nutool with a decoction of jaw (Hordeum vulgare) and khashkahsh (Papaver somniferum seeds) may be done.18

Deafness: The following medicines are prescribed for nutool in partial or complete deafness

Make a decoction of Banafsha (Viola odorata), neelofer (Nelumbium speciosum), babuna (Matricaria chamomile), nakhuna (Trigonella uncata), marzanjosh (Origanum majorana), peeled jaw (Hordeum vulgare seeds peeled off after boiling in water), kali tulsi (Ocimum canum), and sosan (Iris florentina flowers) and use it for nutool on the head.20

Arthralgia: The given drugs are effective in painful conditions of the joints when used as nutool: Cascuta reflexa (2 parts), Solanum nigrum (1 part)-boil both drugs in water and use for nutool on the affected joints. This should be followed by massage of the area with Roghan-e-gul.18

Mastitis: In mastitis caused due to accumulation on milk in the breasts after weaning etc, use a decoction of 6 gm each of babuna (Matricaria chamomile), shibit (Anethum sovata), halba (Trigonella foenum graecum), qaisoom (Artemisia absinthium), jund-bedstar (Castoreum). Boil these drugs in two liters of water till only 1.5 liters are left. This may be used for nutool on the affected area.3

CONCLUSION

There is a vast amount of literature in Unani medicine on the therapeutic effects of nutool in several disease conditions. Furthermore, the gentleness of this therapy and the immediate relaxing effects add to the benefits. Nutool therapy has shown promising results in many clinical studies and is a practitioner’s delight mainly due to the holistic and calm nature of treatment. With the increasing prevalence of psychiatric and nervous disorders in the recent years, the search for an all-inclusive therapy continues which can provide both physical and psychological benefits. Nutool therapy is one such treatment which is easy to administer, cost-friendly and may be employed in low-resource settings also. However, to reap maximum benefits out of this age-old treatment, it is necessary to carry out further detailed researches on the efficacy of the prescribed compound formulations in Unani medicine.

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