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Review Article

LEECH THERAPY (TALEEQ): INDICATION, CONTRAINDICATION AND STANDARD OPERATIVE PROCEDURES (SOPS)

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*Correspondence	Abstract
<p>Md Tanwir Alam Department of Preventive and Social Medicine, Allama Iqbal Unani Medical College (AIUMC), Muzaffarnagar, U.P., India</p> <p>DOI: 10.7897/2321-6328.01417</p> <p>Article Received on: 01/10/13 Accepted on: 22/11/13</p>	<p>Blood letting is an ancient medical procedure comprises of leeching, wet cupping (Al-Hijamah) and Venesection; still in use across the world. The evidence of use of leeches for blood letting procedure can be traced back in ancient system of medicine like Greco-roman, Indian and Arabic medicine. In early of 19th century their uses were very common among European surgeons for the means of natural and cosmetic healing in superficial and other surgical cut. Now a days leeching is an established therapeutic modality among Indian system of medicine (Unani and Ayurveda). It is being used for various diseases like varicosity, varicose and other non healing ulcers, warts, Melasma (Chloasma), hypertension, local congestion and joints pain etc. Inspite of that, standard operative procedure (SOPs) for leeching is yet to develop. In this article authors comprises the possible SOPs for leech therapy along with indication and contraindication of the same described in Unani system of medicine.</p> <p>Keywords: Leeching; Irsale Alaq; SOPs; Hirudotherapy; Blood letting; Unani.</p>

INTRODUCTION

Leech (*Hirudo medicinalis*) is known as both a parasite and a therapeutic agent; Leeches are blood sucking worms that are in use as a therapeutic since 2500 years.¹ Leech therapy is able to cure numerous medical conditions. There is much evidence of use of leeches in medicine as a means of local depletion/blood letting from the ancient Greece, Rome, Arab and India. Unani system of medicine is basically combination of all the above ancient medical system. It arose in Greece, flourished in Rome, attained its zenith in Arabian era (Middle Ages) and remerged in India and its sub-continent. These days Unani is one of the vital parts of Indian system of medicine; recognised by its holistic approach, unique and rational concept which address health and related states very efficiently. Its attraction and popularity can be assumed by its inclusion in the National Rural Health Mission (NRHM) of the government of India. Thousands of certified unani practitioners can be seen in India. In unani system of medicine it is believed that imbalance in the proportion of humours (body fluids) are one of the main cause of disease. Leeching is one of the natural therapeutic processes used to restore that balance and bring back good health.

Leech Therapy in Unani: Historical Perspective

In Unani; Arabic word “Alaq” is used for leech. “Irsale alaq” means application of leeches and word “Taleeq” is used in equivalent to leech therapy. In short we can say “Taleeq” or “Irsale Alaq” means, “leeching”. The word “Alaq” is the plural of “alqa”, which means, “leech”. Leech therapy was first introduced by Hippocrates a famous Unani physician and father of medicine. Furthermore Galen classified Leech

therapy as a method of treatment and prevention of health.²⁻⁴ Famous Unani physicians like: Rofus, Arkaghanees, Razi, Majoosi, Maseehi, Zahravi, Ibn Sina, Ibn Hubal Badhdadi, Ismail Jurjani, Akbar Arzani And Abdul Hameed Bhopali etc. have recommended Irsale Alaq in their writings for various ailments. There was boom in Leech therapy during middle ages. After a long gap the leech therapy was brought back into the medical domain in the middle of 20th century.^{1,2,5-15}

Definitions of Leeching

In ancient unani literature two definitions are in vogue for the leeching these are: “Leeching is blood letting process with the help of medicinal leeches for the treatment of various diseases.” or “Leeching is a bloodletting process which can be used on that area of the body where other process of bloodletting like Fasd and Hijamah are impossible to perform.^{2,3,15}

Aims of Leeching

- The main aim of Leeching is to clean the morbid matter from the site of the disease.
- To absorb sanguineous matters more efficiently from deeper tissues as compared to Hijamah (wet cupping) and fasd (Venesection) with little or no pain.
- Leeching is the counter part of Venesection in children
- To do Imala (diversion of morbid matter)
- To relieve the pain.
- To relieve venous congestion, more effectively than conventional therapies.^{6-8,15}

Indications

Leeching is one of the blood letting procedures among Unani system of medicine. By definition it is clear that leeching is usually advised when other blood letting procedure like Fasad and Al-Hijamah are impossible to perform.^{3,15} Because Unani physicians believes that unnecessary procedure should be avoided and the plan of treatment should be finalized by keeping in mind that the treatment must be safe, cheap, acceptable, effective and less invasive. Famous Unani physicians like: Rofus, Arkaghanees, Razi, Majoosi, Maseehi, Zahravi, Ibn Sina, Ibn Hubal Badhdadi, Ismail Jurjani, Akbar Arzani and Abdul Hameed Bhopali etc., have recommended Leeching in following conditions in their

writings: Skin diseases like warts, Melasma (Chloasma), Vitiligo and skin cancer, disease of ENT, disease of male reproductive organ, Diphtheria, Joints Disease like arthritis and Rheumatic diseases, Sciatica, Varicose Veins and Venous diseases, Infected wounds, Non healing ulcers, Chronic wounds, Heart Diseases – Ischaemic disease, Hypertension, Antidyscratic therapy (blood purification and regeneration), Gynecological disorders (Endometriosis, Chronic adnexitis), Eye diseases (Glaucoma), Passive congestion and spastic conditions and Hemorrhoids.^{1-3,8,12,16} Following details of leech application in various diseases in terms of number, time and site of application has been found in Unani literature (See Table 1)^{2,3,5-10,12-16}

Table 1: Leech application in various diseases in terms of number, time and site of application

S. No	Disease	Site of application	Number of leeches	Time duration (in minutes)
1	Amraze mufasil (Joints disease)	Above the joints	2-4	20-30
2	Amraze halaq (disease of throat)	Sub mental region	1-2	5-10 or till the leech disattached
3	Amraze lissa	Periodontal areas	1-2	As above
4	Skin graft and cosmetic surgery.	Along the suture line.	According to the requirements	As above
4	Qurooh khabeesa / Q. muzmina (chronic ulcers)	On the ulcers	Depends on the size of ulcers	20-30
5	Qooba (On the lesion	Depends on the extent of patches.	10-15
6	Kheraj (fissure)	Local	As per the size of Kheraj	10-15
7	Saafa/kalaf (alopecia)	Local	As per the area involved	10-15
8	Kalaf Melasma (Chloasma)	Local	As per the area affected	10-15
8	Nasal Polyps	Local	1	15-20
9	External piles / hemorrhoids	Over the mass	1-3	20-30
10	Hypertension	Mid of the both scapular region	2-5	15-30
11	Dawali (Varicose veins)	Direct on the varicose area of vein	Depending upon the extend of varicosity	30-60 or till the leeches disattached.

Contraindications

We should keep in mind that before starting leech therapy we must aware of contraindications regarding this therapy. Following are the conditions in which leeching is contraindicated: Anaemia, Coagulation disorders, Haemophilia, Pregnancy, Hypotonia, Leukemia, Local Pain During Treatment, Local Itching, Hypotension and Vasovagal Attacks, Blood Loss, Super infection, Allergies, Sepsis, Transmission of Infectious Diseases and Scarring.^{1,2,8,9,16}

Complications

Although leech therapy is an innovative and safe approach in medical science and promising for various ailments but its use is accompanied by various complications too. The most common may be:

- Prolonged bleeding.
- Allergic reactions and bacterial infections. The bacteria *aeromonas-hydrophilia* present in gut of leech can cause pneumonia, septicemia or gastroenteritis.
- Allergic reactions such as itching followed by burning and blister formation and ulcerative necrosis due to toxins present in leech saliva have also been reported after leech therapy.
- Transmission of certain infections from one subject to the other is another probable complication of leech therapy. Hence, it is mandatory to rule out the selected cases for certain conditions by performing a series of required hematological or serological investigations.

- Few such conditions include various blood borne infections like HIV and Hepatitis, blood disorders like hemophilia, thrombocytopenia and conditions like pregnancy and anemia.^{2,8,9,16}

But if we follow the standard operative procedure; chances of complications and side effects are almost negligible.

Standard Operative Procedure (SOPs)^{1-3,5-10,13-15}

Accelerating use and acceptance of leech therapy in mass needs rational presentation, aseptic procedures and safety assurance. So development of standard operative procedure regarding the leech therapy is need of hour. Decision to advice Leech therapy for a selective disease, selection of medicinal leeches, number of leeches, site of applications, duration for which leeches should be used and the whole procedure of leech application till the removal of leech comes under SOPs. Two heading can be framed for leeching procedure.

- Selection of Leeches
- Procedure of Leeching

Selection of Leeches

Types of leeches

The leeches are hermaphrodite as earth worm (have both male and female elements). As per Unani medicine two types of leeches are found one those are therapeutically usable called as “medicinal leeches” and rest is non-medicinal or poisonous leeches. Medicinal leeches are needed to separate from non medicinal leeches. *Hirudo medicinalis* and *Hirudinaria granulosa* species are commonly known

medicinal leeches; these medical leeches are haemophagic parasitic “blood sucking” and have been used in Unani system of medicine since centuries. The medicinal leeches found in fresh water, leech saliva contains anticoagulant, vasodilators, lipotropic and anesthetic properties. Medicinal leeches have two suckers, one at each end. The caudal (Back end) end has suction cup which helps the leeches to ambulate (crawling) and to attach to its host. The frontal end which also known as rostral suction cup also contains the mouth with three sharp jaws that leaved a ‘Y’ shaped mark.

Features of therapeutically usable leeches

- According to Unani physicians the leeches should have following feature for medicinal purposes
- The leeches should be trapped from the clean water where algae / moss are abundantly present
- The pond should also have frogs
- The colour of leeches should be Masheeu laun (colored like seed of *Vigna radiata*), greenish and with two golden colored strip on the body.
- We can select those leeches also which are of hepatic colored.
- We can select those leeches also which are like a Rat’s tail in its fineness and roundness.
- Leeches should be thin and small headed
- With emerald green and rounded side.

Procedure of Leeching

It can be divided as follows;

- Pre-leeching procedure
- Leeching procedure
- Post-leeching procedure

Pre leeching procedure

Ideally aseptic and separate room should be there which is well equipped with

- Patient bed
- Separate tank/bottles for leech storage
- The dressing trolley which is having sterilized gloves, sterilized gauze pieces, normal saline, turmeric powder, sufoof habisuddam, dressing material, BP instrument, emergency medicines etc.
- Doctor should wear the sterilized apron.

Examination and Investigations

Examine vitals and blood pressure

Important investigations which should be done before leeching process (last three are optional).

- Hemoglobin estimation to avoid anemic patients. Hb % should be done on every 15th day during treatment.
- BT, CT, BS level. To detect and avoid patients having diabetes, hemophilia and other diseases.
- HIV test to avoid cross infection
- Complete haemogram
- HBsAg avoid cross infection

Preparation of Leeches

According to Unani literature leeches should be collected just one day before the use

- The collected leeches dropped in a wide mouth kidney like tray or bowel filled with clean water.

- Use palatable water which is free from contaminations and chlorination because it can kill the leech. Water should be changed every 3rd day.
- Fine turmeric powder is mixed in it. One can observe that an inactive leech become active and runs all around the tray immediately after sprinkling of the powder which indicates its carving for food.
- After this, the active leeches are selected and transferred in another tray having clean water.
- Preparation of the patient
- Selection of suitable patient
- Light semi solid diet before the procedure should be advised.
- Disorders like anemia, hemophilia, Diabetes Mellitus, Hepatitis and HIV etc. should be ruled out by appropriate investigations.
- The desired site should be washed with cold water properly.
- Spirit gauze or turmeric should not be used for cleaning the application site.

Leeching procedures

- Take towel, soap, gauze pieces, powder of natural anticoagulant (like Geru (red Chalk), Murdarsang and Alum) and sterile needle.
- The desired site is cleaned with wet gauze.
- Now, the leech is held at its neck with fingers and applied directly to the skin.
- Once leeches start sucking the blood, they are covered with wet gauze and cold water is poured on them from above time to time, so as to make leech comfortable during sucking.
- If leech do not catch the site by its own, then rub the site of leeching to increase blood circulation of that particular area or a small prick induced bleeding may be required so as to facilitate the sucking procedure.
- The leech when once starts sucking the blood, elevates its neck, and fixes its head to the supporting point of skin. One can observe wave like movements indicating sucking of blood.
- Leave it for 30 minutes to 60 minutes.
- When leech become fully satisfied with its food, it leaves off the skin of the patient and drops itself down.
- If this not happen, then the patient may feel itching sensation which indicates impure blood from that spot is no more available for the leech.
- In such a case, a little turmeric powder is sprinkled on the sucking point of the leech and immediately the leech takes away its mouth from that point.

Post leeching procedure

For patients

- Leech is removed from the site
- The site is cleaned with normal saline or other antiseptic solution.
- Turmeric powder is sprinkled to the bleeding site
- Bandaging is done to arrest the bleeding (some physicians suggest that blood is allowed for some time to ooze after removal of leech)
- Sips of lime water, soup, or glucose water can be offered to the patient

- Patient is allowed to sit for few minutes before leaving the place.

For leeches (Post procedure leech care)

- Leeches after use are kept in an empty tray.
- Turmeric powder is sprinkled on its mouth just to induce vomiting so that it vomits the blood.
- Some of the practitioners advocate to gently squeezing out the blood with fingers from anus to mouth.
- After this the leech is again washed in clean water.
- At the end leech is transferred in the separate jar and kept starving for normally seven days.
- Please keep the leeches in separate container of each patient with their name tag or code and date of starting the procedure.

Methodology

The classic and relevant books of Unani system of medicine were studied and literature and claims in support of this article has been taken from them. For the search of these books author visited following four libraries, namely (a) Library of Allama Iqbal Unani Medical College (AIUMC), Muzaffarnagar, Uttar Pradesh, India (b) Library of National Institute of Unani Medicine (NIUM), Bangalore, India (c) Departmental Library of Ajmal Khan Tibbia College and Hospital, Aligarh Muslim University (AMU), Aligarh, Uttar Pradesh, India and (4) Maulana Azad Library of Aligarh Muslim University (AMU), Aligarh, Uttar Pradesh, India. Scientific databases like Google Search, Pub Med and Google scholar were used; the keywords used for the literature search were Leech Therapy, Hirudotherapy, Irsale Alaq, medicinal benefits of leeches and leeching in Unani.

CONCLUSION

Leech therapy has edge over Al-Hijamah and Fasd as it can be applied on those places which are impossible for later both (Al-Hijamah and Fasd) like tonsils, hemorrhoids and the cervix etc. It is also less invasive and comparatively less painful. As far as standard operative procedure is concern we must follow the SOPs because it deals with body fluids; which are very liable to infected if aseptic condition is not adopted. Although leeching is very commonly advised in Unani and ayurveda system of medicine but we still need

more refined and SOPs oriented Randomized Control Trials to standardize and rationalize this efficacious therapeutic procedure.

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