

Conceptual description of *Amal-i-Kaiyy* (Cauterization): An overview

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Abstract

Although, there is a detailed description of *Amal-i-Kaiyy* in unani system of medicine, the use of it for therapeutic purposes is now almost abandoned. It remained a precious treasure of unani system of Medicine. One of the earliest references of *Amal-i-Kaiyy* was found in the surgical papyrus in 1600 BC for the treatment of ulcer and tumours. *Amal-i-Kaiyy* is a practice of burning the flesh for therapeutic purposes. It is often used to stop *Jiryān-ud-Dam* (Haemorrhage) or other fluids, to remove unwanted skin or to create an entry point into the skin. It is most effective remedy for the diseases developed due to *Mizāj-i-Bārid-Raṭab* as this remedy is considered to have *Hār-Yābis* effect.

Keywords: *amal-i-kaiyy*, cauterization, *mizāj*, *hār*, *yābis*, *bārid raṭab*

Introduction

In Unani system of Medicine, *Amal-i-Kaiyy* is the practice of burning the flesh for therapeutic purposes. It is often used to stop bleeding or other fluids, to remove unwanted skin or to create an entry point into the skin [1]. Although, *Amal-i-Kaiyy* was a procedure in practice during the golden age of unani medicine, it had been declining in popularity of unani medicine for almost a century. *Amal-i-Kaiyy* was usually used by surgeons and almost all the surgeon were indulged in using this therapy. Later, surgeons replaced *Amal-i-Kaiyy* with less drastic method such as medicine and ligatures.

Amal-i-Kaiyy (Cauterization) is an ancient medical practice and one of the modalities included in *Ilāj bit Tadbīr*. It is the application of corrosive drug or hot metal over the affected site for the therapeutic purposes.

Buqrāt (Hippocrates) discussed about *Amal-i-Kaiyy* in very elaborative manner in his treatise *Kitāb-al-Fusūl* (Hippocratic Corpus). He advised to use *Amal-i-Kaiyy* on haemorrhoids and plague bubos [2].

Before we expatiate on the actual operation of *Amal-i-Kaiyy* it is necessary to mention its advantages and disadvantages and the *Mizāj* upon which it is to be used. It is said that a discourse on the advantage and disadvantage of *Amal-i-Kaiyy* is a long one, a subtle learning, a hidden secret. *Amal-i-Kaiyy* has universal application for every ill constitution, whether organic or functional, with the exception of two: the functional *Mizāj-i-Hār* and the functional *Mizāj-i-Yābis*. About the diseases caused by *Mizāj-i-Hār*, the ancient physicians differed, some saying that *Amal-i-Kaiyy* helps in a constitution of this kind, while others said the opposite: that *Amal-i-Kaiyy* is of no use in a disease caused by *Harārat* or *Yabūsat*; for the fire is naturally *Hār* and *Yābis* and it is obviously absurd to treat *Amrād-i-Hār-Yābis* with a *Hār-Yābis* remedy. But he holds the opposite view says that actual *Amal-i-Kaiyy* may help in the case of such *Amrād-i-Hār-Yābis* as arise in the human body; for when you compare the human body, humid as it is, with the nature of fire you find the human body cold. However, no one should attempt this operation unless he has had long training and practice in use of *Amal-i-Kaiyy*, and fully acquainted with the various human temperaments, and the character of the

complaints in themselves; their causes, symptoms, and duration [3].

It is one of those remedies that have been used by Prophet Mohammad (SAW) on himself and advocated also to use it. As narrated by *Ibn 'Abbās* that the (the prophet said), "Healing is in three things: A gulp of Honey, *Hijāmah* and '*Amal-i-Kaiyy*. But I forbid my followers to use '*Amal-i-Kaiyy* (branding with fire) [4].

Abul Qasim Zahrawi, founder of modern surgical and medical instruments, was most skilled surgeon of his time. He described '*Amal-i-Kaiyy* in his treatise *Al-Tasreef* and dedicated 56 chapters to this noble therapy. He advocated that '*Amal-i-Kaiyy* is useful in every *Su-i-Mizāj* (Mal-temperament) in contradiction with opinion of other physicians at that time and it can be done in all the seasons [5].

Definition

Kaiyy is an Arabic word meaning to cauterize. It is extracted from unani word *Kaiein* meaning to burn. *Amal-i-Kaiyy* is a procedure in which *Kāvvi Mādā* (Caustic Matter), red hot metal rod, electric current, fire etc. are used to burn a specific part of the body in order to dry the excessive fluid, to stop bleeding, to remove the putrefied flesh etc. The instruments used for *Amal-i-Kaiyy* are called *Mikwāt* (Cautery) and the place of the body which is used for cauterization is called *Kaiyya*. The performer of *Amal-i-Kaiyy* is mentioned as *Kawwa* (Cauterist).

AIMS and objectives of kai [5]

1. To prevent the spreading of corruption or decomposition of an organ towards a healthy organ.
2. To strengthen the structure having *Mizāj-i-Bārid* (cold temperament), e.g. coxalgia, the part of the hip branded.
3. To dissolve the corrupt materials or substances this is firmly adherent to the structure of the organ. To arrest *Jiryān-ud-Dam* (Haemorrhage).
4. When the medicines are affectless to drain or melt the corrupt flesh.
5. To prevent the flowing and infiltration of catarrhal fluid.
6. To treat a non-healing ulcer [6]

7. It can be used to get rid of animal poison.

Classification of *Amal-e-Kai* [7]

Classification of *Amal-i-Kaiyy* was done on various bases such as instruments or drugs used timing of *Amal-i-Kaiyy* and the place where it has to perform, etc.

On the basis of Instrument & drugs used

i) *Amal-i-Kaiyy bid Dawā* (Cauterization by Caustic drugs)

Caustic drugs or chemical agents are used in this type of cauterization for the destruction of tissues. There is a long list of *Akkāl Advia* in unani pharmacopeia. When these drugs are used for the cauterization, it is called *Amal-i-Kaiyy bid Dawa*.

ii) *Amal-i-Kaiyy bil Hadeed-ul-Muhmmā* (Cauterization by Hot Metal Rod)

This is an ancient and very common method for *Amal-i-Kaiyy* in which, red-hot metal rod is used for the procedure. This is also called the actual cauterization. In this type, iron rods of different shapes and sizes are heated according to the part of the body to be cauterized and the condition of the disease to be treated. Nowadays electro-cauterization is in use in place of hot metal cauterization.

iii) *Amal-i-Kaiyy bil Quwatul Barqiya* (Electro Cauterization)

Controlled electric current is taken into account in type of *Amal-i-Kaiyy*. Electro-cauterization is used to prevent or stop bleeding after an injury or during surgery, to remove abnormal tissue growth, to prevent infection etc.

On the basis of timing

a) Mandatory

Sometimes *Amal-i-Kaiyy* becomes essential to perform in order to achieve the therapeutic effects. In such conditions, *Amal-i-Kaiyy* should be performed immediately without waiting for appropriate season or time of the day.

b) Optional

When a person, by his own will, wants to be cauterized for preservation of health and prevention from the diseases then this type of *Amal-i-Kaiyy* comes into practice. In such situation, all pre-requisites should be followed or taken into account such as season, time, built of the patient, appropriate site on the body etc.

On the basis of sites

a) External

It is considered easy in practice because the instrument of cauterization and part of the body to be cauterized remain visible. It is useful in skin disorders, anal fistula, chronic wounds and abscesses etc., [7].

b) Internal

It is quite difficult to perform *Amal-i-Kaiyy* to the internal areas of the body such as nose, mouth, uterus, and rectum. Ibne Quf Masīhī, in his book *Kitāb-al-Umda-fil Jarāhat*, stated that in the procedure of internal *Amal-i-Kaiyy*, a hollow pipe of wood is taken and thick end of the *a'ala-i-Kaiyy* is kept in this pipe. Insert the pipe along with *a'ala-i-Kaiyy* in the required opening of the body and move the instrument forward to reach at the exact place to be cauterized. This type of cauterization is useful

in *Amrāz-i-Jigar*, *Hisāt-i-Masana*, internal abscess, Haemorrhoids and indigestion etc. [7, 8].

Other types of *Amal-i-Kaiyy* [7]

i) *Amal-i-Kaiyy Bukhāri* (Steam/Vapour Cauterization):

Steam is applied to the specific part of the body up to a specific time in this type of *Amal-i-Kaiyy*. This method is usually taken into account for the treatment of benign tumours and to stop the bleeding especially from the uterus.

ii) *Amal-i-Kaiyy Shamsī* (Solar Cauterization)

A magnifying glass is used to concentrate the solar rays on a specific part of the body either to heat it or to burn it. It is the sun that produces the energy that falls on the convex lens in the form of light. The lens concentrates all this light in a small spot. A good fraction of the energy is converted to heat and this heat is used for the therapeutic purposes in the form of *Amal-i-Kaiyy Shamsī*.

iii) *Amal-i-Kaiyy bil Ghār* (Gas Cauterization)

A stream of burn out gas is used for this purpose primarily to control the bleeding from some lesions during surgery and also sometimes to debulk tumours in the case of patients for whom surgery is not recommended. A probe is used in this method through which a jet of gas is applied on the required part of the body.

iv) *Amal-i-Kaiyy bil Maa-ul-Hārrah* (Hot water cauterization)

Zahrawī and *Ibne Quf Masīhī* recommended the use of hot water as a cauterization agent in the cases of *Iraq-un-Nasā* and different types of warts.

v) *Amal-i-Kaiyy Jamdi* (Cold Cauterization)

The application of any substance, such as liquid nitrogen, carbon dioxide snow or a very cold instrument, for the destruction of tissues by freezing is called *Amal-i-Kaiyy Jamdi*. It is also called cryocauterization. *Amal-i-Kaiyy Jamdi* is usually performed for the patients having excessive vaginal discharge or bleeding, chronic wounds, warts, telangiectasia, etc. The temperature remains upto - 80°C in this type of cauterization so it should be used carefully.

vi) *Amal-i-Kaiyy Tahtul Jild* (Subcutaneous Cauterization)

When caustic material is used for cauterization sub-cutaneously with the help of injection, it is known as *Amal-i-Kaiyy Tahtul Jild*.

Benefits of *Amal-i-Kaiyy* [7]

- 1. Mane'Intishaar-e-Fasaad:** It prevents the spread of infection from one organ to other.
- 2. Taskheen-e-Uzoo:** If the Mizaj of any organ of the body becomes Baarid, *Amal-e-Kai* helps that organ in getting Mizaj-e-Haar.
- 3. Muhallil-e-Mavad-e-Fasida:** Sometime, Mavad-e-Fasida becomes deeply wedged to the structure of the organs causing difficulty in removal. In such conditions, *Amal-e-Kai* helps to resolve that Mavad-e-Fasida.
- 4. Mane'Jiryaan-e-Khoon:** *Amal-e-Kai* is very much acceptable in checking the bleeding. It is not only used in ancient period but also being practicing in modern era to

check the bleeding especially during surgery in the form of electro-cauterization.

5. **Mane'Insibab-e-Mavad:** The movement of Akhlat in the body is a continuous process. In some conditions, the descent of Mavad-e-Fasida creates harms to specific organ and it becomes necessary to stop that Insibab-e-Madda from primary organ to secondary organ. In such situation, Amal-e-Kai should be performed on the primary organ to stop the descent of Madda.
6. **Indifa'e-Lahm-e-Fasida:** In some conditions, the tissues of diseased organs become putrefied, thus need to remove them. In this process metal cauterization is used. Red hot metal rod is placed on the affected area until the patient feels the pain.
7. **Tajfeef-e-Qurooh:** Excessive fluidity in the wound hampers the healing process. Amal-e-Kai is used to dry up this excessive fluid from the wound, thus helps in wound healing. In chronic ulcers and non-healing ulcers, Amal-e-Kai has a wonderful effect.
8. **Izala-e-Sumoom:** Amal-e-Kai is helpful in getting rid of the poisonous matter of the body also.
9. **Tahreek:** When there is a need to stimulate any part of the patient, Amal-e-Kai may be taken into account. It is very useful therapy to stimulate the patients of coma.
10. **Counter-irritation:** Amal-e-Kai is also used for counter-irritation. Zahrawi suggested Amal-e-Kai as a counter-irritant in the management of frequent dislocation of shoulder joint for strengthening the related tendons and ligaments.
11. **Izala-e-Ta'afun:** It was also advisable as an antiseptic technique upto 20th century. *Amal-i-Kaiyy*, for *Izala-e-Ta'afun*, was replaced by the use of antibiotics.

Limitations and Harmful effects of *Amal-i-Kaiyy* ^[7]

Amal-i-Kaiyy is one of the useful regimens in unani system of medicine. It has some harmful effects also as follows

1. It is not effective in the diseases of *hār-yābis* nature as it causes hararat and yaboosat when used.
2. Sometimes, nerves, ligaments, tendons etc are damaged by doing *Amal-i-Kaiyy*.
3. *Amal-i-Kaiyy* is very painful procedure. Severe pain of the therapy is sometime unbearable for sensitive patients.
4. Sometimes, profuse bleeding starts if procedure is not done properly.
5. *Amal-i-Kaiyy* may be harmful for the brain and covering of the brain

Precautions and Instructions ^[7]

It is not advisable to use *Amal-i-Kaiyy* in each and every condition or disease. Ancient physicians advised it in those patients who accomplish the following conditions

1. When medicine fails to treat the disease then only *Amal-i-Kaiyy* is advisable.
2. *Tanqiya-e-Badan* should be done before performing the *Amal-i-Kaiyy*.
3. Any part of the body should be cauterized according to its size and strength.
4. *Mikwāt* should be hold carefully in order to prevent burning to the performer.
5. When *Amal-i-Kaiyy* is needed on more than one place, there should be a sufficient gap between them.
6. Bone should not be cauterized.

7. Proper surface marking should be done prior to perform *Amal-i-Kaiyy*.
8. *Jālinūs* advised that *Amal-i-Kaiyy* should not be performed in excessive hot and cold seasons.
9. It should be kept in mind that nerves are not getting damaged.
10. Arterial haemorrhage should be prevented while performing *Amal-i-Kaiyy* and *Hābis-ud-dam Advia* should be ready to use with the performer.
11. Extra care should be taken while doing *Amal-i-Kaiyy* on the head because it may harm brain and coverings of brain.
12. *Amal-i-Kaiyy* should be performed on the middle of head, if it is needed to be done on head.
13. If *Amal-i-Kaiyy* is needed to be done on chest it should be performed in intercostals spaces.
14. *Rāzi* said that the *mikwāt* should be red hot in managing the bleeding so that scab would be formed thick and strong and will not be easily dislodge from its place. In any case, if it is displaced, it may cause profuse bleeding which may be very difficult to check.
15. *Amal-i-Kaiyy* should be shallow in case of pleurisy and restricted upto the thickness of skin.
16. The effect of thickness should be upto the thickness of skin in case of *Būrūdat wa Rūtūbat-i-Jigar* and *Istisqā-i-Ziqi* (Ascitis).
17. The line of demarcation between the putrefied and healthy areas should be well known to the performer so that he can remove the putrefied flesh easily.

Contraindications ^[7]

Children and old aged persons, severely ill patients, during pregnancy and lactation, acute diseases, extra sensitive patients, severe anaemia, excessive hot and cold seasons.

Identification of proper, improper and excessiveness of *Amal-i-Kaiyy* ^[7]

Identifications of proper *Amal-i-Kaiyy*:

1. Skin colour will be bluish or blacking at the place of *Amal-i-Kaiyy*
2. There will be pitting on the part of *Amal-i-Kaiyy*
3. Goal will be achieved for that *Amal-i-Kaiyy* has been done.
4. The body will be felt lighter
5. Cessation of bleeding and drying of extra fluid
6. Cauterised part will be reduced in size

Identification of improper *Amal-i-Kaiyy*

1. Appearance of inflammation at the site of *Amal-i-Kaiyy*
2. Itching and tingling sensation
3. Feeling of heaviness in the body
4. Progression in the disease

Identification of excessiveness of *Amal-i-Kaiyy*

1. Excessive swelling and burning at the site of *Amal-i-Kaiyy*
2. Secretion of fluid from the part of *Amal-i-Kaiyy*
3. Severe pain
4. Fatigue & Drowsiness
5. Excessive thirst

Post *Amal-i-Kaiyy* care ^[7]

After the process of *Amal-i-Kaiyy*, wounds should not be left open in order to avoid the infection resulting in a problem to

the patient. Following instructions should be followed after the procedure of *Amal-i-Kaiyy*.

1. A cloth soaked in the mixture of *Roghan-i-Zaitoon* and white portion of egg should be applied on the wound.
2. *Zimad-e-Mulayyana* should be applied if inflammatory reaction occurs after *Amal-i-Kaiyy*.
3. *Hābis* or *Mumbit Advia* mixed with honey is used on the wound.
4. In case of *Amal-i-Kaiyy* with *Zimād-i-Zarārīh*, a soft cloth soaked in cow butter should be applied.

Selection of metal for *Amal-i-Kaiyy* ^[5,8]

It is a controversial discussion among the ancient physicians that which metal is used for *Amal-i-Kaiyy*.

Ibne Sina recommended that gold metal should be used for *Amal-i-Kaiyy*.

Razi, with the reference of *Jālinūs*, suggested that the best metal for *Amal-i-Kaiyy* is pure gold because no bulla formation at the place of cauterization, and if formed, cured soon.

Abul Qasim Zahrawi has a different view about the selection of metal for *Amal-i-Kaiyy*. He recommends iron, the best metal for *Amal-i-Kaiyy* on the basis of following points.

1. It is very difficult to guess the approximate temperature of gold metal even after becoming red.
2. Gold metal becomes cold soon in comparison to iron because its consistency is less than iron.
3. Because gold is soft in consistency, it bends or breaks due to the pressure in comparison to iron.
4. Iron has a quality to strengthen the overall organs of the body.

Conclusion

Though, this regimen has become obsolete but possesses various beneficial therapeutic effects. Only the need of the time is to use this therapy in our daily clinical practice to gain confidence. It is also a good opportunity for the researchers to conduct some exhaustive clinical trials on large sample size by using modern scientific parameters to fix any conclusion about the effect of this therapy.

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