

# Cauterization: An Age-Old Therapeutic Modality in Unani (Greek-O-Arab) System of Medicine

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DOI: <https://doi.org/10.52403/ijshr.20230426>

## ABSTRACT

Cauterization (Amal-I-Kaiyy) is one of the traditional medical practices and has been widely used in Unani system of medicine in past. It is one of the important regimes in ilaj bit tadbeer (regimental therapy) modality of Unani system of medicine with wide range of applications in number of ailments including leprosy, Sar (epilepsy), numbness, Bawāsīr al-Anf (nasal polyp), vertigo etc. Although, there is detailed description of this therapeutic practice in Unani system medicine it is almost completely forgotten nowadays due to pain and suffering associated with it. Traditional cauterization is nowadays replaced by modern cautery which is widely used in surgical and other medical practices. Here in this review concept and various therapeutic applications of cauterization (Amal-I-Kaiyy) in the light of Unani system of medicine is described in detail.

**KEY WORDS:** Amal-I-Kaiyy, cauterization, Sar, Bawāsīr al-Anf

## INTRODUCTION

There are many forms of Regimental Therapy (Ilaj Bil Tadbeer) in the Unani System of Medicine (USM), including hijma (cupping), fasd (venesection), dalak (massage), qay (emesis), etc. Amal-i-Kaiyy (cauterization) is one of these and is used to prevent the organ damage when the drug is unable to stop the bleeding and heal the wounds. (1) This form of treatment is frequently recommended in classical Greco-Arabic literature and entails branding unhealthy organs or tissues with hot metals,

oils, or caustic substances in order to burn off specific tissues, skin, or entire organs with a device called a "*Mikwāh*" (cautery). (1) The best treatment for treating faṣd-i-mizj (temperament anomaly), which occurs when a person's temperament is mostly brid (cold), is stated to be kayi. It can be utilised to get rid of morbid humours and stop sepsis from spreading. Kayi is the finest treatment for removing dead or gangrenous tissue, malignant tumours, and control of haemorrhage, especially arterial in origin. It also aids in desiccation and protects healthy organs if disease-causing humours are in excess. (2) Kayi was employed in a wide range of diseases from head to toe, and practiced by most renowned scholars of Greco-Arabian medicine like Ibn Sina (Avicenna, 980-1035 AD), Ibn Rushd (Averroes, died 1198), Razi (Rhazes, 865-925 AD), Ibn al-Qaf Masiḥi (1233-1286 AD), Abul Qasim Al-Zahrawi (Abulcasis, 936-1013 AD) and many more. (1)

## CAUTERIZATION AND RENOWNED UNANI SCHOLARS

One of the first mentions of kayi can be found in the writings of Hippocrates (460–377 BC), who promoted its usage for a number of ailments. He recommended the use of kayi for the treatment of hemorrhoids (3), trachoma (4), and other conditions.

The physician Jālinūs (131–199 AD) outlines the use of cauterization for burning a tumor's roots, a procedure that may also

prove to be risky, in his work on tumours against nature from the second century.(5) In his renowned work Firdaus al-Hikmah, Rabban Tabri (770–850 AD), one of the first Muslim physicians to conduct study on kayi, discussed using it to cure sciatica (6). Later, Zakariya Razi (865–925 AD) mentioned cauterization as a treatment for a number of ailments, including sciatica, piles, coxalgia, and even as a way to manage bleeding (7). Abul Hasan Ahmad Bin Mohamed Tabri, a renowned physician and scientist who died in 985 AD, supported kayi and documented its usage in treating a number of illnesses(8) . Ibn Rushd suggested using medications that "act like fire" and promoted medical cauterization (9).

Zahrwi was the practitioner who truly brought cauterization to its pinnacle. He suggested cauterization as a method of treating numerous illnesses, including haemorrhoids, epilepsy, headaches, toothaches, and depression, in addition to using hot metals or hot oils to halt bleeding. The inclusion of graphic pictures of various cauteries utilised in the kayi of various organs is a significant aspect of this work. This book was the first to have such thorough diagrams of more than 50 cauteries. Additionally, Zahrawi included in this book safety precautions, sterilising methods, and potential kayi problems along with their treatments(10).

Ibn al-Qaf Masihi in his most famous work *Kitāb al 'Umda Fī Ṣanā' t al-Jarrāh* has extensively described theoretical and practical aspect of cauterization(11).

### Definition

The Arabic term "*kaiyy*" means to cauterise. It derives from the Unani term *Kaiein*, which means to burn. *Amal-i-Kaiyy* is a process in which *Kāvvi Mādda* (Caustic Matter), a red-hot metal rod, electricity, fire, etc. are used to burn a particular portion of the body in order to dry the surplus fluid, halt bleeding, remove the putrid tissue, etc. The body part that is cauterised during *Amal-i-Kaiyy* is referred to as *Kaiyya*, and

the tools used are known as *Mikwāt* (Cautery). There is a reference of *Kawwa* (Cauterist) as the performer of *Amal-i-Kaiyy*.

### CLASSIFICATION OF CAUTERIZATION

Classification of *Amal-i-Kaiyy* (cauterization) is done as follows:

#### A. On the basis of metal used (2)

1. *Kaiyy bil Hadeed*: Cautery by application of heated Iron.
2. *Kaiyy bil Tila*: Cautery by application of heated gold rod
3. *Kaiyy bil Nuhas*: Cautery by application of heated copper rod
4. *Kaiyy bil Nuqra*: Cautery by application of heated silver rod

#### B. According to the use of herbs, minerals and animal substance for cauterization

Cauterization done by using caustic drugs/acids or alkalis is known as *Kaiyy bid-Dawa*. Aritiyus, a Roman physician, developed the *Amal-i-Kaiyy* mechanism employing Zarareeh (canthrides). Famous Arab physician Hunain Ibn Ishq wrote a book on *Amal-i-Kaiyy* called "*Ikhtiyar-ul-Advia Al Muharriq*" that contains information on medications that are useful for treating a variety of illnesses while also being utilised as cauterising agents. [nayab] According to Roghan-e-mom Kuhna, corrosive ointment made from Khardal (*Brassica nigra*), Zubd-ul-bahr (cuttlefish bone), Kibrit (sulphur), Revand (rheum), Muqil (*Commiphora mukul gum*), and Ushaq (*Dorema ammoniacum*) is used to treat nodules that develop in tertiary syphil (Wax oil).(12)

#### C. According to the method of heating the metal rod

According to physicians, the treatment involved constantly sucking through the injured side with a muhajim (cupping device) for a number of days, until a vesicle emerged, and then performing *Kaiyy bil-Nar* (cauterization with fire). Galvano-

cautery or electro-cautery has since supplanted this process.(13)

General indications of cauterization in Unani medicine

1. To arrest the spread of sepsis
2. To induce movement of disease-causing humours away from the healthy areas
3. To treat abnormally cold temperament of an organ
4. cessation of haemorrhage
5. The removal of dead and necrosed tissues.(2)

## **APPLICATION OF CAUTERIZATION IN UNANI MEDICINE**

### **Balghami diseases of the brain**

In situations where there is an excess of balgham in the brain, which results in catarrh, tiredness, throat pain, paralysis, facial palsy, stupor, etc., cauterization of the head is typically used. A proper mus'hil medication should be administered to the patient for three to four nights before to kayi in order to mobilise the toxic material from the brain.

### **Melancholia**

According to Ibn Zuhr (1092–1162 AD), kayi is also beneficial for psychoses induced by melancholia.(14)

### **Şuda‘Balghami (Headache caused due to phlegmatic matter)**

Hakeem Azam Khan (1211–1320 AD) suggested cauterization in the centre of the skull as a final resort if all other treatments fail to relieve a headache of this nature.(15)

### **EPILEPSY**

In Al-Ikseer, Hakeem Azam Khan advises that during an epileptic seizure, one should heat a piece of marjin until it is red hot and cauterise on the forehead between the eyebrows. This both ends the attack and prevent recurrence.(16)

### **OTALGIA**

Zahrawi recommends cauterization using the device "punctate" for otalgia brought on by the cold. In order to heal the wound, he

advised cauterising 10–12 places around the damaged ear or ears, a little distance from the ear.

He recommends cauterization on approximately 10–12 spots surrounding the affected ear or ears, somewhat away from the ear, followed by dressing the wound until it heals.(10)

### **FACIAL PALSY**

Zahrawi suggested cauterising three locations for the treatment of facial palsy: the ear's root, a bit below the temple, and the intersection of the lips. The healthy side should receive all cauteries. The depth of the burn should be roughly about half of the skin's thickness.(10)

Cauterization behind the ear is helpful for facial palsy patients as well(15). A particular type of facial palsy that Mohammad Tabri discussed causes salivation to continue even after the problem has been treated. He advised cauterising the vessels behind the ears in this situation, as well as doing one cauterization in the skull's centre. The cut should be deep enough to cause a contracture and the cauterization should be performed where the skin is soft and loose(8).

### **ENTROPION**

Majusi advised tweezing the affected area's lashes prior to entering the area with enteropion. Then, using a fine cautery, cauterise the hair roots in that region of the lid border (17). Zahrawi, however, asserts that enteropion can also be treated by cauterising the lid.(10)

### **ASCITES**

The following areas, according to Azam Khan, should be cauterised: first, over the stomach's fundus; second, over the liver; third, over the spleen; fourth, on the section of the stomach; and fifth, directly above the umbilicus. Cauterize all the locations at once if the patient is strong enough; alternatively, they could be done on different days. (16)

### **DROPSY**

Zahrawi advised cauterising the upper surface of the feet in the dip between the little and fourth toes in a dropsy case. Do not allow the cautery to slant; it must be used vertically. then permit the fluid to leave the area. Employ a cautery with a beak-shaped blade. After that, cauterise both heels in a longitudinal direction at one place each. After that, cauterise both thighs twice each and the popliteal fossa once. Then, do not allow the wounds to heal so that the fluid can escape. After that, proceed with the routine wound care.(10)

### **BACKACHE**

Backaches brought on by the buildup of cold and moist humours are treated with cauterization.(10)

### **COXALGIA**

According to Kutub-e-Hind, which has been cited by Rabban Tabri (770–850 AD), cauterization may be used to treat coxalgia if other treatments including enema, hammam, resolvent ointments, and oral medications are ineffective. In such situations, cauterise the kidney-related nerves first. Then cauterise twice on each of the thighs, both knees, the ankle, both heels longitudinally, and all four toes. If there is a chance that the hip joint will dislocate, cauterise the damaged hip at three to four locations and keep the wound open using the proper medications to allow the pus to drain.(18)

### **SCIATICA**

Zakariya Razi recommended cauterization When cupping fails to relieve sciatic pain. Apply longitudinal cupping to the painful area on both thighs. Next, cauterise the lateral surface of the heel, just below the ankle, as well as one place on the smallest toe. According to Razi, this treatment permanently eliminates sciatica. Hippocrates mentioned in Ebizimiya that cauterization of the gluteal region relieves sciatica. A thorough description of

cauterization for sciatica was provided by Razi. He advises cauterising all sites from the back to the area of pain, however he advises sparing the muscles in the heels. Deep cauterization should be applied to the areas of the toes where the pain stops. The wounds shouldn't be allowed to heal after that. The day of cauterization shouldn't permit the patient to eat dinner.(18)

### **CANCERS**

Ahmad-al Hasan Jurjani has also spoken about his experiences with cancer cauterization. He claims that after removing the unhealthy tissue, the affected area may be cauterised. However, sometimes more deterioration may result after the excision and cauterization, particularly if the tumour is close to a key organ. JURJANI(19)

### **HAEMORRAGE**

According to Jalinoos, when cauterization is carried out correctly, eschar without a blood supply results. Because it thickens the skin and reduces blood flow to the area, it has a strong hemostatic effect. It burns much like a fire does. He is quick to stress out that the patient's life is in danger if a significant haemorrhage occurs that necessitates the use of cautery, though(12). In order to limit blood flow, it is therefore advised to use a very hot cautery; otherwise, the heat may actually make the haemorrhage worse (12,20) Hippocrates (460–377 BC) wrote in Kitab-al-Adviya Al-Mufradah that cauterization would be most effective in causing haemostasis if it resulted in fever in such instances. In this perspective, pure gold has been referred to as the best metal because it does not cause blister formation.(20)

### **HEMORRHOIDS**

Amal-i-Kaiyy has been employed by Buqrat (Hippocrates; 4th century BC) to heal haemorrhoids. He suggested heating an iron rod to a red-hot temperature and then burning the hemorrhoid until it dried up.(21) Burnt sesame seeds (*Sesamum indicum*), when put to the pile mass, provide

immediate pain alleviation, according to a statement made by a physician by the name of Ahran, which Razi cited.(18)

### **Contraindication And Precautions**

Cauterization should not be done in extremes of cold and hot weather.(20)

Never cauterise nerves, ligaments, tendons, or muscles. MASEHI

Jalinoos asserts that pure gold is the ideal metal for cautery. It prevents the production of blisters, and the wound heals quickly(20). According to Zahrawi, Gold is a better metal for cautery but it can occasionally liquefy when heated. Iron may therefore be preferred for this purpose.(10)

To preserve the healthy tissues, if cauterization is required inside an opening such as the uterus, nose, or other body cavity, the cautery should be inserted inside a hollow tube.(20)

### **CONCLUSION**

Amlī-e-kayyī (cauterization) is an important modality of treatment in Unani system of medicine. It has been practised in Unani medicine extensively in past due to its multiple therapeutic benefits as described in classical Unani literature. In modern medicine traditional cautery is replaced by electrocautery. In modern medicine electrocautery has limited usage. In order to explore wide therapeutic benefits of cautery as described in Unani medicine more studies need to be done.

### **Declaration by Authors**

**Acknowledgement:** None

**Source of Funding:** None

**Conflict of Interest:** The authors declare no conflict of interest.

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How to cite this article: Rayees Ahamad Mir, Nadeem Ahmad Shah. Cauterization: an age-old therapeutic modality in Unani (Greek-O-Arab) system of medicine. *International Journal of Science & Healthcare Research*. 2023; 8(4): 183-188. DOI: [10.52403/ijshr.20230426](https://doi.org/10.52403/ijshr.20230426)

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