

ANCIENT METHODS OF SUSHRUTA FOR MEDICAL EMERGENCIES MANAGEMENT - A REVIEW

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ABSTRACT

Ayurveda is the oldest holistic system of medical science. The belief that it is not applicable for emergencies and mere used as an alternative therapy is a myth and is wrong, misleading and devaluating the Ayurveda. Many references are present in Ayurveda text books especially in *Sushruta samhita* that have proven the glorious history of Ayurveda for successful management of emergency and life threatening conditions like *Agnidagdha* (Burn), *Kanthpidana* (Throttling), *Dhumopahata* (Smoke choking), *Atiraktasrava* (Heavy bleeding), *Moodhgarbha* (Retained fetus), *Bhagna* (Dislocation and fracture), *Atisara* and *Chhardi* (Acute diarrhea and vomiting) etc. These managements have become obsolete over the due course of time. So, in this article, a review of ancient methods of management of emergencies as described by *Sushruta* is being attempted.

Keywords: Emergency, Ayurveda, *Sushruta*.

INTRODUCTION

21st century is the century of science. Science has progressed in every field of present time especially medical science. Diseases that were previously considered as incurable they have been now curable with a great extent. In emergency situations modern medical science has proved itself to be a boon. Human life is being saved from dying in emergency situations or accidents by modern medical techniques. Modern medical science made significant progress in this field. But it is not that in the ancient times no emergency medical treatments were done, as per the belief in common people. This notion is completely untrue

because in Ayurveda scriptures there are many evidences available as verses in the context of that period which shows the emergent conditions and their successful treatment. Management of emergencies like *Agnidagdha* (Burn), *Kanthpidana* (Throttling), *Dhumopahata* (Smoke choking), *Atiraktasrava* (Heavy bleeding), *Moodhgarbha* (Retained fetus), *Bhagna* (Dislocation and fracture), *Baddhgudodara* (Intestinal obstruction), *Chhidrodara* (Intestinal perforation), *Antarmritgarbha* (Intra uterine death of fetus), *Atisara* and *Chhardi* (Acute diarrhea and vomiting), *Tamakshwash* (Asthma), *Teevraudarshool* (Acute ab-

domen), *Tuni-pratituni* (Renal Colic), *Shalya* (various types of foreign body), *Jwara* (fever), *Moorchha* (Fainting), *Sanyasa* (Unconsciousness), *Mutraghata* (Retention of urine), *Haridyopghata* (Heart attack) etc are described by ancient acharyas in form of verses, especially elaborated in *Sushruta samhita*. On the basis of these medical principles of ayurveda, even in the present time, many emergency cases can be treated successfully.

Aim & Objectives- The paper was written to find out some medical emergency conditions and their ayurvedic basis of management as described in *Sushrutasmhita*.

Material and Methods-The references have been collected and compiled mainly from *Sushruta samhita* and their available commentaries and some modern books of surgery.

Observation

Various medical and surgical emergency conditions and their management are widely described in *Sushruta samhita*. Acharyas knew about the importance of the management of these emergencies. So that they stated that emergency management should be implemented as soon as possible and do whatever which can save a life. Various emergency managements are described in *Sushruta samhita*, *Charak samhita* and *Ashtangasangraha* or *hridaya*. Some of the emergencies and their management as described in *Sushruta samhita* are as follows-

Principle Of Emergency Care¹-

Emergency conditions require urgent management so *Acharya Sushruta* explained that in emergency, at first treatments which are urgently required should be done and need not to follow the normal rules or line of treatments of a disease or condition.

Acute Traumatic Pain Management² –

Mild to moderate intensity of pain which is caused by any sharp instrument like knife or blade should be treated by application of lukewarm *ghee* boiled with *Yashtimadhu* (*Glycyrrhiza glabra*) powder.

Atiraktasrava (Haemorrhage) And Its Management-

Blood is an important fluid in the body. It is known as lifeline of human. Thousand of year ago Ayurveda

acharyas had knew the importance of blood. Therefore, *Acharya Sushruta* had mentioned that ‘The cause of our live body is the blood; it is mere thing that holds the body so it should be protected by every possible way. So *Sushruta* has quoted ‘Blood is life itself³.

Abnormal flow of blood from ruptured blood vessels is called as haemorrhage or bleeding. It may be external (visible on the outside of the body) or internal (where there is no sign of bleeding outside the body)⁴. Human life can be threatened due to heavy bleeding. Uncontrolled haemorrhage is one of the leading causes of death. There are various incidents or conditions which can cause haemorrhage. The most common cause of haemorrhage is trauma; other causes can be medical conditions like haemophilia, leukemia, menorrhagia, liver diseases, carcinomas or medicines like blood thinners, radiation therapy, and aspirin etc^{4,5}. Acharyas knew the importance of blood so they considered heavy bleeding as emergency and explained the line of treatment and many medicines for haemostasis.

Complications of heavy bleeding-

The ancient Ayurveda scholars were also aware about complications of heavy bleeding and most of them are similar to as in modern medical science. Headache, blindness, Adhimantha (a disease of the eye), Timira (partial blindness), depletion or loss of tissues, convulsions, paralysis, burning sensation, hemiplegia, hiccup, dyspnoea, cough, anemia, unconsciousness, dizziness, loss of hearing and death are described as complication of heavy bleeding⁶.

Management of Hemorrhage⁷ –*Acharya Sushruta* had explained about the management of haemorrhage in detail which can be described in 4 types as below-

A. Local application –

a. Lodhradichurna- In case of haemorrhage powder of *Lodhra* (*Symplocos racemosa*), *Madhuka* (*Glycyrrhiza glabra*), *Priyangu* (*Callicarpa macrophylla*), *Patanga*, *Gairika* (Fe_2O_3), *Sarjarasa* (*Shorea robusta*), *Rasanjana* (extract of *Berberis aristata*), *Salmalipuspa* (*Salmaalial malabarica*), *Shankha*, *Shukti*, *Masha*, *Yava* and *Godhuma*

should be sprinkled on the wound and pressed into the wound with the fingers.

- b. **Saladichurna-** powder of bark of *Sala (Shorea robusta)*, *Sarja*, *Arjuna (Terminalia arjuna)*, *Arimeda (Acacia fernasiana)*, *Meshashringi (Gymnema sylvestre)*, *Dhava (Anogeissus latifolia)* and *Dhanvana (Grewia tiliaefolia)* or ash of *Kshauma* (flax) or powder of *Samudraphena* and *Laksha* should be sprinkled on the wound. Tight bandaging should be done by using any bandaging material.
 - c. **Sheetal upchar (Cold therapies)-** A moist cloth should be covered on wound or on patient and put him in a cold room, cold poultices should be applied on bleeding wounds. Cold liquids can also be poured.
 - d. **Ksharkarma or Agnikarma-**In case when the above measures can't stop bleeding then bleeding vein or wound area should be burnt by *Kshara* (caustic alkali) or by direct fire (red hot rod).
 - e. **Shiravedhana-** The bleeding vein should be cut once again near the cut area which had been cut accidentally or therapeutically.
- B. Oral medication-**
- a. The decoction of *Kakolyadigana* added with sugar and honey should be given to drink in case of haemorrhage.
 - b. In critical case of haemorrhage the whole blood of deer, antelope, camel, rabbit, buffalo or boar could be given to drink. It was the original concept of Acharya *Sushruta*, which later established as blood transfusion.
 - c. The food must be taken along with milk and *Yusha* (soup of grains) should be taking with excess quantity of *ghee* or oil.
 - d. In case of hemorrhage due to the weak digestive power, food should be light (easily digestible), not very cold, which promote blood formation, and either slightly sour or devoid of sour.
- C. Management of complications-**Complications should be treated appropriately with line of treatment as described.
- D. Patient's Department-** patient should be admitted in cold environment.

Raktasrava Nirodha Karma⁸ (Methods of management of Hemorrhage)-

The above management to prevent the hemorrhage can be concluded in four types of methods as follows-

- a. **Skandana-** It means to promote clotting. Cold drugs or materials are used for this purpose. These drugs or materials make the blood to clot. At first this method should be used.
- b. **Sandhana-** Joining the edges of the wound is called as *sandhana*. The astringent drugs are used for this purpose. If the bleeding cannot stop by *skandana karma* then this method should be done.
- c. **Pachana-** The drugs which adheres the wound by their coagulation effect are used in this method like ash or alkali materials. In condition of failure of *sandhanakarma* it should be done.
- d. **Dahana-**Direct heat can coagulate and constricts the veins. Thus, provide the haemostasis. This is the best method for haemostasis which should be done in case of failure of above three methods of haemostasis. This process is done by electric cautery in modern medical science.

Daha (Burn) And Its Management-

Other than therapeutical burn, *Acharya Sushruta* explained four kinds of accidental burns caused by fire i.e *Plushta*, *Durdagdha*, *Samyakadagdha* and *Atidagdha*⁹. *Plushtadagdha* is explained as a pigmented area present on the skin associated with severe burning sensation. The burns in which *sphota* (blebs, vesicles) appears on skin, accompanied with severe sucking, burning pain, redness and *paaka* (exudation or ulceration) and these are subsiding after a long time define as *Durdagdha*. *Samyakadagdha* has the color like of the fruit of *Tala (Borassus flabellifer)* tree, even surface and not having severe symptoms. *Atidagdha* is described as burn in which the muscles are hanging loose, stiffness in the body, severe pain in the veins, tendons, joints and bones. Fever, burning sensation all over the body, severe thirst and fainting are associated with this condition. *Atidagdha* wounds have delayed healing and healed ulcers have discoloration. According to modern terminology *Plushtadagdha* can be correlated with scorched burns (burns of the first degree), *Durdagdha* with blistered

burns (burns of the second degree), *Samyakadagdha* with superficial burns (burn of third degree) and *Atidagdha* with excessive deep burn (burn of the fourth degree).

Management of Burn¹⁰-

The *Plushtadagdha* (burns of the first degree) is treated by warming the affected part and medicines which have hot potency should be administered. This should be done because due to burn, temperature of the body increased then blood becomes liquefied but water by nature is cold in potency so it makes the blood thick hence hot treatments gives comfort in these types of burns.

In *Durdagdha* (burns of the second degree) both warm and cold therapies should be done. But use of *ghee*, application of poultices and fomentation of body should be done in cold state.

In the management of *Samyakadagdha* (burn of third degree) at first *ghee* processed with *Tugakshiri* (*Bambusa arundinacea*), *Plaksha* (*Ficus lacor*), *Chandana* (*Santalum album*), *Gairika* and *Amrita* (*Tinospora cordifolia*) should be applied over the body. The paste of meat of domestic animals or animals those living in water or marshy region should be applied over the burnt area. The body temperature should be maintained.

In *Atidagdha* (burn of the fourth degree) at first the hanging muscles should be removed then cold therapies applied. A paste of broken rice, bark of *Tinduki* (*Diospyros peregrina*) mixed with *ghee* should be locally applied. Then wound should be covered with leaves of *Guduchi* or aquatic plant (like lotus etc.). The line of treatment of *pittaja visarpa* (erysipelas) should be performed in this condition. For the all kinds of wound a medicated *ghrit* made with *Madhucchishta*, *Madhuka*, *Rodhra*, *Sarjarasa*, *Manjishtha* (*Rubia cordifolia*), *Chandana* (*Santalum album*) and *Murva* (*Marsdenia tenaciissima*) is the best.

Dhumopahata (Suffocation By Smoke) And Its Management-

In case of fire along with fire smoke also causes great trouble. It causes suffocation which can be fatal so this condition also requires urgent treatment. *Acharya Sushruta* described the sign and symptoms of a suffo-

cated person (*Dhumopahata*) along with their management. A suffocated person has sign and symptoms as increased respiration, sneezing, flatulence and cough, burning sensation and redness in the eyes, inhales smoke, does not understand the smell of other substances, loss all the tastes sensation, impaired hearing, excessive thirst and burning sensation in body. Patient also gets fever, weakness and can faint¹¹.

Management¹²-

The management of *dhumopahata* can be divided in four steps as (a) *Vamankarma* (stomach wash)- at first induced vomiting or stomach wash should be done by any of these materials- *Ghee*, juice of sugar-cane, draksa, milk, sugar water, sweet or sour tastes things. This induced vomiting purifies the stomach and smell of smoke from elementary canal or lungs. *Vamankarma* also subside the debility, sneezing, fever, burning sensation, fainting, thirst, flatulence, dyspnoea and cough. (b) *Kavalagraha* (mouth gargles)- second step is doing mouth gargles with luke-warm liquids of sweet, salt and sour tastes medicines. This can improve the sensory system and mind so that a person will be able to perceive objects by all the sense organs. (c) *Shirovirechan*- third step is doing *shirovirechan* (nasal medication) by purgative medicines. These medicines clean the head through nasal route. By this process vision, head and throat becomes clear. (d) *Ahara* (diet)- diet should include light food, with oil or *ghrit* and those which do not cause burning sensation.

Management of Ushna Vata-atapa Dagdha (Heat stroke), Shitadagdha (Frostbite) and Indravajrapata (Burn by Thunder bolt)¹³-

The burn caused by hot breeze and sunstroke should be managed by cold treatments like cold poultices, cold fomentation, application of cold medicated *ghrit*, oil etc. The burn caused by cold breeze known as *sheetadagdha* (frost bite) and should be managed by hot and unctuous treatments.

In case of burn by electricity or thunder bolt, if a person is alive then this case should be managed by oil massage, oil bath and application of warm thick paste of medicines on the body.

Moorchha (Fainting) And Its Management¹⁴

A person may faint in condition of fear, severe pain or due to other medical illness. In this condition the patient should be sprinkled with cold water on face and his vitals (*Nadi, Hridaya, Shwasa* etc.) should be monitored regularly and protect them. The efforts should be done to increase his will power and positivity.

Jalamagna Moorchhita (Drowning) And Its Management¹⁵

The person who submerged in water and get fainted should be held with his head in down position and his abdomen should be pressed or body shaken to remove water from abdomen and lungs. Induced vomiting should be performed or buried in a heap of ash up to his face.

Kanthpidana (Throttling) And Its Management¹⁶

Accidently or intentionally severe throttling or strangulation or hanging is an emergency condition. *Acharya Sushruta* explained that in this condition *vata* and *kapha dosha* gets aggravated and blocks the passage of the throat. In this condition excessive saliva and froth comes out through mouth and patient losses his consciousness. This condition should be managed by massage with oil, give fomentation, administered with strong *shirovirechak* medicines by nasal route, and should be given soup of meat which having *vatahara* (mitigating *vata*) properties.

DISCUSSION

The most ancient textbook of *Shalya tantra* is *Sushruta samhita*. Deep knowledge of every branch of medical science was covered within it, but it emphasizes more knowledge of surgery by *Acharya Sushruta*. Along with various surgical disorders, surgical emergency conditions and with their management, *Acharya Sushruta* also described about the medical and medico legal emergency conditions and their management in details. *Sadyovrana* (Acute wound), *Agnidagdha* (Burn), *Kanthpidana* (Throttling), *Dhumopahata* (Smoke choking), *Atiraktasrava* (Heavy bleeding), *Moodhgarbha* (retained fetus), *As-thibhagna* (Dislocation and fracture), *Baddhgudodara* (Intestinal obstruction), *Chhidrodara* (Intestinal perforation),

Antarmritgarbha (Intra uterine death of fetus), *Tuni-pratituni* (Renal Colic) etc. are described in details in *Sushruta samhita*.

The basic principle of management of emergency condition is still relevant and it is more elaborated in modern medical science. Emergencies need immediate care and need not to follow the general rules. Clinical decision making and immediate response is very important in emergency conditions¹⁷. Therefore, it is considered by *Acharya Sushruta* that a physician or surgeon should be always *Yuktigya* so that he can handle all the acute or emergent situations.

Acharya Sushruta was the first person who used the alcohol as anaesthesia and analgesic¹⁸. Besides the herbal analgesic drugs, he also used the *Ashwasanachikitsa* to cure the pain during surgical practice because he knew the role of mental constitution in pain sensation. Still this basic principle is unchanged in modern medical science¹⁹.

The importance of blood in human body, complications of haemorrhage and management of haemorrhage are described with details in *Sushruta samhita* and these are still unchallenged. To stop the haemorrhage during surgery *Sushruta* used the *Agnikarma* with red hot rod. This was the original concept of *Sushruta* which is later modified as electric cautery by modern scientist. *Acharya Sushruta* had given a detailed description of the types, symptoms and management of burns which have very similarity to concept of burn in modern medical science. He had also given the detailed description of *Dhumopahata* with its management which is unique and firstly described by him. Some other emergency conditions like *Jalamagnamoorchhita*, *Kanthpidana*, *Murchha*, *Vishapita* (poisoning), Fracture including cranial and cervical bone²⁰ fracture etc. was also described by *Sushruta*. His basic concepts of management of these conditions are still relevant, useful and remained unchanged even in modern days. These techniques of *Sushruta* show the glorious past of the ancient Indian medical science.

CONCLUSION

Here it can be concluded that Ayurveda has a glorious history of successful management of emergencies and life-threatening conditions and proves that ayurveda medicines are very useful to manage the emergency conditions even in present era.

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