



Review Article

RAKTAMOKSHANA (BLOOD LETTING) –THE VISHA MOKSHANA CHIKITSA

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ABSTRACT

Ayurveda is divided into eight branches for simplifying the understanding of the subjects by scholars. *Agadatantra* (Ayurvedic Toxicology) is one of the branch which deals with the study of signs and symptoms of *Sthavara* (animate) and *Jangama* (inanimate poisoning). Present study is an attempt to study the applied aspect of *Raktamokshana* in *Vishachikitsa*. Modern line of treatment for poisoning cases also consists of elimination of poisons through various means. Both general and particular stage wise (*Vegas*) signs and symptoms, is a special feature of Ayurveda diagnosis of poisoning cases. Vega is the ability of poison to invade the *Dhatus* quickly and consecutively. In this sense *Raktamokshana* is indicated in very first *Vega*. Hence it is the foremost therapy prescribed in *Vishachikitsa*. **Materials and Methods:** all the major classics of Ayurveda be reviewed to collect all the data related to *Vishachikitsa* and *Raktamokshana*, earlier published work on the topic. **Discussion:** *Raktamokshana* (bloodletting) is the easy and fastest way of removal of poison from the site of bite. Fast relief from the symptoms of poisoning is possible and is one of the important and foremost procedure in *Jangamavisha* (animate poisons). *Sthaavaravisha* (plant poison) *Chikitsa* and prime treatment in chronic cumulative poisonings like *Dushivisha* (combatant cumulative poison) and *Garavisha* (artificial cumulative poison). *Raktamokshana* is one of the principal *Shodhana* (detoxification) therapies in Ayurveda. **Conclusion:** Indications of *Raktamokshana* are widely indicated in most of the blood borne diseases, poisoning, and skin disorders.

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INTRODUCTION

Ayurveda, the science of life- deals with all the factors that help to maintain healthy life. The Ayurveda gives maximum importance to prevention. So in *Vishachikitsa*, *Raktamokshana* prevents *Visha* to spread in to body through blood. Literally Vega means speed, According to *Vishjyotshnika*, *Vega* is the ability of poison to invade the *Dhatus* quickly and consecutively.^[1] In other words it is the stages of subsequent invasion of the *Dhatus* by poison. In *Sushruta Samhita* instead of *Dhatus*, the word *Kalaa* is used. So, Vega is the ability of *Visha* (poison) supported by *Vayu* to spread into the *Kalaas* one by one and manifestation of the particular signs and

symptoms. There is a time interval usually taken by the *Visha* to conquer each *Kalaa* fully and is termed as "*Visha Vegantara*." The importance of *Visha Vegantara* is that the medication and treatment. procedures should be carried out during this interval. Many Acharyas shows difference of opinion regarding the number of *Vegas*. Some say it as seven and others as eight. But actually the eighth *Vega* is Death.

In modern toxicology seven principles are followed for treatment of poisoning as follows,

1. Resuscitation
2. Prevention of further spread of poison

3. Decontamination of elimination of unabsorbed poisons.
4. Neutralization or use of antidotes
5. Elimination of absorbed poisons
6. Symptomatic treatment
7. Rehabilitation and secondary prevention

In above principles second and fifth principle is directly related with *Raktamokshana*. Above principles supports the *Visha Vega* concept indirectly.

Raktamokshana is the important and prime process of detoxification of blood. It is derived from two words i.e., *Rakta* which means blood and *Mokshana* which means to leave or relieve. So, the meaning of *Raktamokshana* is letting the blood out. The blood is expelled out from the body to reduce the quantity of toxic substances in the blood borne diseases (*Raktajavikara*). The process of *Raktamokshana* can be traced back to the *Vedic* period only and not beyond that. In the *Koushika sutra* of *Atharvaveda*, reference of *Raktamokshana* by leech application are available. Sushruta, Father of Indian Surgery, has given all the information regarding bloodletting in detail in his treatise, "*Sushruta Samhita*". It is also described by *Charaka* in *Vishachikitsa* chapter of *Chikitsasthaana*. To expel out the vitiated blood, seven procedures are advocated:

1. Venesection (*Sira Vedhana*)
2. Horn application (*Sringa Avacharana*)
3. Gourd application (*Alabu Aavacharana*)
4. Leech application (*Jalauka Avacharana*)
5. Scrapping (*Pracchanna Karma*)
6. Cupping glass application (*Ghati Yantra Avacharana*)
7. Needle application (*Suchi Avacharana*)

Acharyas emphasize the *Shodhana* therapy as the line of treatment at various places. Among these various *Shodhana* therapy, *Raktamokshana* is indicated specially because *Rakta* is mainly involved as *Dushya* in *Sampraptighatak* for many diseases.^[1] *Rakta* is important *Dhatu* as it does the *Dhaarana* of *Sarira*.^[2]

Panchkarma therapy is known as biopurification and detoxification therapy worldwide. But its principles can also be applied as it is in the treatment of poisoning by *Charaka*. Modern science also applies the alleviation of toxic material from the body by stomach wash and diauresis and purgation procedures. In *Charaka*, *Vishachikitsa* consists of twenty-four modalities of treatment for poisoning. Out of which, eight are directly of *Panchkarma*. As to save the life of patient all emergency precautions and methods be used. Comprehensive study of procedure of *Raktamokshana* with literature review with modern science for better understanding of the subject is done, procedure and tools used, indications and contraindications, *Pathyaaapathya* during *Raktamokshana kriyas* is carried out to have a broad vision to the practitioner while dealing with patients of toxicity. At the end of the article one is able to know the application of principle of *Raktamokshana* treatment in acute and chronic poisoning cases with appropriate choice of drugs.

According to *Charaka*, *Visha* consists of ten *Gunas* (Properties) *Charaka*.^[3] Ayurvedic basic principles depicts that effect of any drug used as medicine totally depends on its *Raspanchaka*, *Guna*, *Panchbhautikatva*, *Doshakaarita*, effects on *Dhatu*, *Upadhatu*, *Mala*, *Strotas*, *Agni*, *Aam*, *Pradnyaaparadha*.

Table 3: Effect on Body and Responsible *Visha Gunas*^[4]

S. No	Responsible <i>Guna</i>	Effect In the body
1	<i>Sukshma, Ashu, Vyavayi</i>	Enters in all body parts
2	<i>Tikshna, Vikasi, Chedi</i>	Disturbances in <i>Marmasthaana</i>
3	<i>Tikshana, Vikashi, Madaawaha, Chedi</i>	Reflecting <i>Buddhi</i>
4	<i>Sukshma, Tikshna</i>	<i>Raktadushti</i>
5	<i>Ruksha</i>	<i>Vaatdushti</i>
6	<i>Ushna, Agneya</i>	<i>Pittadushti</i>
7	<i>Anirdeshyarasa</i>	<i>Kaphadushti</i>
8	<i>Anirdeshyarasa</i> and <i>Yogwaahi</i>	Increasing <i>Aahar-rasa</i>
9	<i>Ashu, Vyavaayi</i>	Spreading rapidly
10	<i>Vyavaayi</i>	No change

11	<i>Apaaki</i>	Not get digested
12	<i>Laghu</i>	Minimizing the treatment measures
13	<i>Laghu, Apaki</i>	Difficult to treat
14	<i>Vishada, Chedi</i>	Loosing body and mind
15	<i>Ashu, vyavayi, Vikashi</i>	Sudden death
16	All <i>Gunās</i>	Destroying <i>Ojas</i>

Relevance of above table is *Gunaviparita Chikitsa, Doshaviparitchikitsa* that is which *Dosha* is getting aggravated, and use of opposite quality drugs to counteract the effect of poison. The 24 remedial measures for poisoning:

- 1 *Mantra* (incantation)
- 2 *Arishtaa* (binding a tourniquette/ preventing by powerful *Vishahar* mantras)
- 3 *Utkartana* (incision)
- 4 *Nispidana* (compression)
- 5 *Chusana* (sucking)
- 6 *Agni* (heating/ cauterization)
- 7 *Pariseka* (sprinkling)
- 8 *Avagaha* (bath)
- 9 *Raktamoksana* (blood-letting)
- 10 *Vamana* (emesis)

- 11 *Vireka* (purgation)
- 12 *Upadhana* (Medication on incised scalp)
- 13 *Hridayavarana* (protection of the heart)
- 14 *Anjana* (collyrium)
- 15 *Nasya* (snuffing/nasal medication)
- 16 *Dhuma* (smoking)
- 17 *Leha* (linctus)
- 18 *Ausadha* (other medicaments)
- 19 *Pradhamana* (blowing powders up through the nose)
- 20 *Pratisarana* (local application)
- 21 *Prativisa* (antidotes)
- 22 *Sanjnasamsthapana* (resuscitation)
- 23 *Lepa* (pastes for external application)
- 24 *Mritasamjivana* (revivation)

Table 1: Classification of 24 *Upkrama* on the basis of modern principal

To check the entry of poison in the blood	Eliminative therapy	Symptomatic Therapy	Counteracting measures	Pacifying measures
<i>Arishtabandhana</i>	<i>Raktamokshanam</i>	<i>Hrudayavaranam</i>	<i>Mantram</i>	<i>Anjanam</i>
<i>Utkartana</i>	<i>Vamanam</i>	<i>Sajnasamsthapanam</i>	<i>Prativisham</i>	<i>Lepam</i>
<i>Nishpeedan</i>	<i>Virechanam</i>	<i>Mrutasanjevanam</i>	<i>Aushadham</i>	<i>Dhumam</i>
<i>Chushanam</i>	<i>Nasyam</i>			<i>Leham</i>
<i>Agni</i>				<i>Upadhaanam</i>
<i>Parishekam</i>				<i>Pradhamanam</i>
<i>Avagaham</i>				<i>Pratisaaranam</i>

Dhumam and *Pradhamanam* come under the *Nasyaupkrama*. *Utkartana* (incision), *Nishpidanam*, *Chushanam* all comes under *Raktamokshan* to eliminate the local poison effect just after the bite, but in the cases of ingestion of poison *Raktamokshana* with *Jalukavacharana*, *Shrung*, *Tumbi*, *Siravyadhanam* may helpful.

Treatment of Local Poisoning by Bite, etc: In case of the bite-poison which has not spread that is localized, the physician should:

- 1) *Arishtabandhana*- bind a tourniquet four finger above bitten point, means physician tries to obstruct the flow of blood at superficial level (venous return), to go towards heart. It is indicated to bind towards the direction of heart

so as to prevent spread of vitiated toxic blood throughout the body.

- 2) A) *Nishpeedan* compress it fully or to remove maximum *Visha* afflicted blood from the site. 2-B) *Utkartana*, one should extract the fang (through incision) except in vital partor 2-C) *Chushanam*, one should suck the poison out through his mouth. Precaution for the physician who will suck out poison from a patient's bite is he should first fill his mouth with barley powder or dust or cotton cloth whichever is available.

Elimination of Poisoned Blood

There from blood should be eliminated through scraping, application of horn or leech or

venesection because blood being affected by poison, the constitution is deranged and thus the patient expires. Hence, if blood is not coming out, it should be impelled by application of rubbing powders such as of *Trikatu*, soot, *Haridra*, five salts, *Gorochana* (cow's bile) and *Vartaka*. These all are *Ushna* (hot) and *Tikshna* (sharp) drugs.

When the bleeding is excessive, paste of cold drugs like *Vata* (Banyan tree- mational tree of India) etc. should be applied. "Blood blows up the poison as air blows up the fire, by application of cold paste or sprinkling blood drops down and as such the force of poison goes away. "Due to force of poison, narcosis, fainting, affliction and palpitation of heart arise. These should be averted with cold applications. Moreover, the patient should be fanned till there is horripilation (goosebumps). So that the patient is refrigerated sufficiently that the poison will not cause burning problems. Cooling therapy also pacifies the hotness of *Rakta*. Now a day's cryotherapy is used.

Benefits of Some Topical Treatments for Localized Poisoning (Bites/ Stings)

Poison does not advance after excision (removal) of the bite, just like a tree whose roots have been cut does not grow. "Sucking is taking out and *Arishtaas* (bindings) are like water *bundhs*." Application of heat (cauterization) burns the poison situated in *Twak* (skin) and *Mamsa* (flesh). Blood-letting eliminates poison from the blood.

Among the *Chaturvinshatiupkrama*, *Raktamokshana* is at ninth place i.e., bloodletting eliminates the poison from the blood as the blood is the major media which blow up the Poison. Principle should be speedily restored in the case where the poisoned area has become discoloured, rigid, swollen and painful.^[5] It should be performed by scraping, application of horns, leech or venesection. This therapy is not included by *Charaka Acharaya* in his five folds of *Panchakarma*, but he has specified *Raktamokshan* wherever there is *Rakthadushthi*. *Sushruta Acharya* had described in details about this therapy. This therapy had limitations as the main component of the body i.e., (*Rakta*) blood is removed directly. In this procedure small quantity of impure blood is let (*Mokshana*) out from the body by leeches (*Jaluka*), by puncturing the vein with the help of syringes (*Siravedha*), *Prachhana* (with the help of surgical blade), *Shrunga* (horns of animals) etc. *Pitta* and *Rakta* have *Ashraya-Ashrayibhava Sambandha*. Hence with the help of bloodletting not only impure blood is removed from the body but *Dushit* (impure vitiated) *Pitta* is also removed from the body. It is

very effective in skin disorders as psoriasis, eczema, acne, scabies, urticaria, leucoderma, etc. Most of the skin disorders are the product of *Dushivisha* in *Vatavyadhis* as paralysis, sciatica etc.

In this competitive and fast era, perceptive society is now much aware with the science and its utilities, so old fashioned process advised by texts may not apply with full flagged. The careful modulation of bloodletting, using modern technique can treat many diseases were all other means fail.

It removes poison or vitiated *Dosha* from blood through skin route. Blood is great media for spreading poison in the body. Due to blood as media poison is absorbed and circulated throughout the body speedily, leading to death. When we remove blood by *Raktamokshana* procedure then poison or toxin will also get removed with blood from body. Hence *Raktamokshana* is topmost treatment in poisoning. It can be done by *Pracchana* (multiple incision), *Shrunga* (horn like shape), *Jalouka* (leech therapy), *Alabu* or *Siravedha* (venesection). *Siravedha* is now commonly done. Bloodletting of veins at extremities and forehead- *Kakapada* (shape of crow's leg) incision and placing fresh flesh on the incision is effective in removing toxins from blood. By osmosis impure blood get sucked in to the fresh flesh. This procedure also indicates the high skills of surgeons present at ancient era to take incision on skull with perfection to save life of the patient.

Types of Raktamokshana [6,7]

Raktamokshana is of two types.

Shastra Visravana - Generally metallic instrument are used to carry out this process. It is further divided into two category- *Pracchana* which means letting the blood passes through several incision and *Siravyadhana*, which is also known as venepuncture.

Anushastra Visravana- The metallic instrument is not considered for carrying out this procedure. It is further divided into 3 categories:

1. *Jalaukavacharana*, which mean applying leeches on a particular area. This is mainly done for *Pitta Dosha* disorder. So more relevant in *Vishachikitsa* due to its *Ashrayatva* with *Rakta*
2. *Alabu*, which mean creating vacuum and extracting blood through the vacuum using a vegetable, which may be bottle guard or *Alabu*. This is mainly done for treating the *Kapha Dosha* diseases.
3. *Shrungavacharana*, which mean applying the cows horns. This is mainly used for treating the *Vata* disorder.

Purva Karma: It is preparatory phase before going to main *Karma*. In this all the material should be collected. Example: cotton swab, gauze piece, instrument, gloves etc.

Pradhana Karma: The various procedures can be considered under *Pradhana karma*.

Prachhana: This method helps to provide relief from stress, tension and anxiety.

Siravyadha: The patient either lies or sits in erect position. According to the disease the vein is selected. Then after proper oleation and sudation, the liquid gruel is injected. The size should be that of 1 *Brihi* or half barely *Pramana* in muscular area.

Jalaukavacharana: Small tiny sized nicks are applied near the affected region. As soon as the blood oozes out, the leech is applied. Its mouth is covered with a wet cotton cloth. After sucking of impure blood the leech will leave the area on its own. In any case when it does not leave its own then turmeric powder is sprinkled on the leech.

Shringa Yantra: The horn is applied on the fleshy part of the body in this a vacuum area has been created by which blood oozes out.

Paschat Karma: After completion of *Pradhanakarma*, dressing is done with medicated oils.

Drugs Collection: *Vrudhipatra* (sharp instrument), *shrunga*, *Jalouka*, *Alabu*, *Kutharika* (Blunt instrument), drugs for stopping blood flow, scalp vein for venesection.

Indications: With special reference to poisoning cases are as follows.

1. when poisoned area becomes discoloured, swollen, rigid and painful^[8]
2. In unconsciousness it should be done at extremities and forehead^[9] (*1st Vega*)^[10]
3. In *Rajiman Sarpadamsha Raktamokshana* is done with *Alabu*. In *Dushivisha Panchsiravedhan* (five modes of *Raktamokshana*, it may be interpreted as removing blood from five major *Siras*- (veins of the body) is indicated.^[11]
4. In *Luta* poisoning^[12,13]
5. In *Mushaka* (rat) poisoning. *Raktamokshana* is done by *Pracchhannakarma*.^[14,15,16]

Procedures in leech therapy-also known as hirudo therapy in western countries- it is more relevant to *Vishachikitsa* explaining it elaboratively.

Poorvakarma	Pradhankarma	Pashchaatkarma
Collection of leeches -Preservation of leech -Examination of patients -Shodhana of leech -Preparation of the patients	Application of leech -Inference of sucking -Provide cooling atmosphere -Removal of leech	Vomiting of leeches -Dressing of lesion -Preservation of leech

Therapeutic properties of hirudotherapy

Reflexogenic hypotensive bloodletting, immunopotential Internal decongestion, bacteriostatic Anticoagulant, anti-inflammatory, protective antithrombotic local anti-oedematous, thrombolytic analgesic removal of microcirculation disorders, antiatherosclerosis, Anti-ischemic removal of abnormal infarctions.^[17]

Contraindications

It is contraindicated in pregnancy, children, and old persons. But as poisoning is the emergency condition it is applied to all in the interest of saving the life as other complications can be managed after saving the life.

The careful modulation of bloodletting, using modern technique can treat many diseases were all other means fail. Creature has miraculous properties with the symbiotic nature, which are helping this type of bloodletting process with just natural way. The father of surgery, *Sushruta* has listed procedures like *Shringa*, *Alabu*, *Ghatiyatra*, *Prachhanna* etc for bloodletting action. Out of these,

Jalaukavacharana (bloodletting by Leech) is been renowned for its safest, quick acting nature and less complicating effect. Earliest references of bloodletting are found in the basic works of all systems of medicine. The oldest civilization of the world too used this method to bestow health on its subjects from time immemorial. All the major classics of Ayurveda have dealt the topic with minute details of a scientist. *Raktamokshana* is a technical term employed to denote a para-surgical procedure to expel out the vitiated blood from selected areas of the body, by specific methods.

Pathya

Pathya in *Visha Roga*: *Haritaki*, *Amalaki*, *Ajamutra*, *Tiktadravya*, *Nirvatasthana*, *Peya*, *Usnodaka*, *Yavagu*, *Mamsa Rasa*, *Raktashali*, *Mudga* *Yusha*, *Paravala*, *Vartaka*, *Karavellaka*, *Pittapapada*, *Guduchipatra Shaka*, *Laghu Anna*.

DISCUSSION

Out of 24, *Utkartana* (incision), *Nishpidana* (compression), *Chushana* (sucking), *Raktamokshana* (blood-letting), *Upadhana*

(medication on incised scalp), these five procedures directly or indirectly come under RM. This shows the significance of RM in poison treatment that is near about 21 percent of the *Vishachikitsa* consists of different types of RM treatment. Thus, if it is done timely, no other or very a smaller number of modalities required for *Vishachikitsa*. *Rakthamokshana* means the procedure of bloodletting for the therapeutic purpose for removing morbid *Doshas* with blood or it can be practiced in blood borne diseases, in *Pitta* predominant diseases and also in a few *Vata* disorders. This therapy in Ayurveda is a partial or a complete treatment depending on the situation. It explained about thousands of years ago and still holds an important place in Ayurvedic treatment in curing many diseases, and has become a necessity in today's world due to changing food habits and lifestyle, for curing ailments and also to maintain health. Also in lifestyle disorders, hormonal imbalances, *Viruddhahar* (food), *Garavisha*, *Dushivisha* (cumulative toxicity), bloodletting is the ultimate and result oriented treatment. Easy to accessible with very less equipment. Comparatively economic for patient's pocket as compared to other PK, in agronomic country like India.

CONCLUSION

Raktamokshana is one procedure among *Panchkarma* which aims at excreting vitiated blood (*Dushtarakta*) from the body. *Rakthamokshana* means the procedure of bloodletting for the therapeutic purpose for removing morbid *Doshas* with blood or it can practised in *Raktajavikaara* (blood borne diseases), in *Pitta* predominant diseases and also in a few *Vata* disorders. This therapy in Ayurveda is a partial or a complete treatment depending on the situation. Further researches are required to investigate whether RM really prevents the another impulses of *Visha* spreading from one *Kalaa* to next one that is aggravation of poison from one *Dhatu* to another one. Its best possible application in the cases of poisoning be ruled out. As poison's *Laghuguna* is more fatal than *Ushna Tikshnaguna* of *Rakta* so whether use of *Shrung* is more beneficial or *Jalauka* is yet to be decided only by practical experiments on animals. Such grey areas of research need to be explored in the clinical field of *Agadatantra*.

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