



Physiological Aspect of *Raktamokshana* – A Critical Review

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Raktamokshana refers to the letting of blood, which is used to treat a variety of diseases, particularly when there is *raktadushti*, as well as during physiological function. In *Ayurveda* surgery, the first complete rational, systematic description of *raktamokshana* for numerous ailments is stated. According to *Acharya sushrut*, a person who regularly takes bloodletting will not be impacted by ailments like as *shopha* (inflammation), *twak dosha* (skin problems), *visarpa* (erysipelas), *granthi* (tumour), and others. The primary goal of this research is to determine the most likely method of action and effect of *raktamokshana*.

A literary review is undertaken utilising electronic databases such as Pubmed, Google Scholar, IJAM, and *Ayurveda* classics such as *Charaka Samhita*, *Sushruta Samhita*, *Ashtang Sangrah*, and

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so on. The goal was to assess the effectiveness and implications of *raktamokshana* in treating pathological diseases and preserving physiological function. According to the study, both *Ayurveda* and current science explain that *raktamokshana*, or significant blood loss, activates / initiates a plethora of beneficial physiological mechanisms, making the body attentive and adaptive to deal with numerous systemic problems.

Keywords: *Raktamokshan; jalauka; siravedha; ghatiyatra; bloodletting; mode of action.*

1. INTRODUCTION

The entities that keep the body, mind, and *prana* (life) [1] together are known as *dhatu*s (tissues). The second *dhatu* to form in the sequence is *Rakta*. Given its importance in supporting life, a few *acharyas* consider *rakta* to be a fourth *dosha* (physiological humour required for life) [2]. According to our ancient literature, *rakta* is responsible for the *kshaya* (depletion) and *vriddhi* (repair) of *dhatu*s [3].

Charaka considers *Rakta* to be one of the *Dasha pra-naayatana* [4,5]. It is one of the *Dasha Jeevitadhama*, according to *Astanga Hridaya* [6]. It is one of the *Dasha pranaayatana*, according to *Astanga Samgraha* [7]. *Raktavahastrotas* play a vital part in *raktadhatu* metabolism. The *yakrita* (liver) and *pleeha* (spleen) are the two main organs [8]. The availability of *strotas* (channels) is required for unfettered blood circulation. Any vitiation in the middle causes *strotodushti* (channel aberration) in the form of *atipravritii* (excess formation), *sang* (obstruction), *siragranthi* (growth inside conduits), and/or *vimarg-gaman* (leaving its own channel and entering unusual channel) [9]. As seen in Table

1, it causes a variety of disorders. The objective of this review was to assess the effectiveness and implications of *raktamokshana* in treating pathological diseases and preserving physiological function.

2. METHOD

This review is undertaken utilising electronic databases such as Pubmed, Google Scholar, IJAM, and *Ayurveda* classics such as *Charaka Samhita*, *Sushruta Samhita*, *Ashtang Sangrah*, and so on.

3.1 Observations

Acharya Sushrut emphasises the function of *Rakta* in the third and most significant stage, *Prasara*, while listing the six *Kriyakala* kinds. The humours must be disseminated throughout many planes of the body, and *rakta* plays an important role in this phase. *Rakta* has a stronger physiological identity, and certain target-specific procedures (*siravyadha*) are more easily applied to this level of bodily systems. The penetration of morbid *doshas* by *Uttarothara dhathu* is now restricted [10].

Table 1. Diseases occurring as a result of *Strotodushti*

S. No.	Type of strotodushti	Diseases occurring as a result of strotodushti
1.	<i>Atipravritii</i> (Undue excessive action)	<i>Asrigdar</i> (menorrhagia)
2.	<i>Sang</i> (Complete or partial obstruction of <i>strotas</i> or Channel)	<i>Kushtha</i> (skin diseases), <i>pidika</i> (<i>Acne Vulgaris</i>), <i>gudpaka</i> (inflamed anal region), <i>medhrapak</i> (inflamed penis), <i>neelika</i> (nevus), <i>vyanga</i> (melanosis), <i>tilkalak</i> (non-elevated mole), <i>dadru</i> (tinea corporis), <i>charamdal</i> , <i>shwittra</i> (leprosy), <i>pama</i> (scabies), <i>kotha</i> (urticarial), <i>pleeharoga</i> (spleen disease), <i>kamala</i> (jaundice), <i>vatarakta</i> (gout)
3.	<i>Siragranthi</i> (Growth inside channels)	<i>Arsha</i> (piles), <i>vidradhi</i> (abscess), <i>arbuda</i> (growth or swelling)
4.	<i>Vimarg-gaman</i> (Entering some other channels after leaving its usual channel)	<i>Kamala</i> (jaundice), <i>raktapitta</i> (epistaxis), <i>vatarakta</i> (gout)

The *raktaja vikara* is destroyed from its roots by the *Raktamokshana* (*Siravyadh*) method, exactly as when the bundles of a field are broken, the crop of paddy, etc., is completely destroyed. This technique purifies the blood and makes the person lustrous; *indriyas* become clear or are able to detect their objects in a balanced/ideal manner; his digestive fire performs well; and his digestive fire is enriched with happiness, good nourishment, and vigour [11].

Avarana chikitsa - Raktamokshana is used to treat *pitta*, *rakta*, and *kaphaj vyadhi*, as well as *pitta* and *kapha* in *anubandha* to *vata dosha*. When *vata prakopa* is caused by *kapha* and *pitta avarana*, *raktamokshana* can help to remove the *avarana* of *pitta* and *kapha dosha*, allowing *anuloma gati* of vitiated *vata* to emerge, hence curing the *vatika* symptoms indirectly [12].

Pitta dosha should be addressed first in cases of *samsrita dosha*, because *asayaasrayitva bhava* of *rakta* and *pitta raktamokshana* aid to soothe vitiated *pitta* [13].

Pitta is a mala of *rakta*, and *raktamokshana* removes vitiated *pitta* together with *rakta*, assisting in the development of *shudha rakta* [14].

Pitta resides in *rakta* (blood) and *sweda* (sweat) as *ashrayi* (dependent) [15]. When *pitta* is vitiated and *pitta*-relieving medications are ineffective, bloodletting can help. Because both *rakta* and *pitta* are acquaintances, it is treatment for both.

The *sanga* (obstruction) of *srotas*, which is the *dushti prakara* in many skin ailments, is relieved by *rakta mokshana* (*Kushta*) [16].

The entire body is nourished by *siras*, and *raktamokshana* from *sira* is the sole means to alleviate vitiation of *dosha* affecting a vast portion of the body, as it has an influence on the entire body [17].

4. DISCUSSION

Sharp or blunt instruments can be used to perform *Raktamokshan* –

4.1 Using Sharp Implements

Prachhana and *Siravedha* are included:

- *Prachhana* is a Sanskrit word that means "rapid sharp cuts."

- *Siravedha*: piercing a vein with a needle straight.

4.2 Using Blunt Instruments

Shringa (animal horn), *alaabu* (dry gourd or long fruit of the *Cucurbitaceae* family), and *ghatyantra* are examples of blunt implements (a medium sized bell like instrument with one end open).

One of the processes covered by *ashastrakrita* (without the use of sharp instruments) *raktamokshan* is the application of *jalauka* (Leech therapy) [18].

Ghatyantra's main premise is to increase blood flow in the affected area. The metabolites that have accumulated in that location will be washed out and the discomfort will be eased. Cupping therapy [19] is credited to a variety of ancient sciences, although the underlying concept or mechanism of action was first mentioned in *ayurveda* classic books thousands of years ago.

Leeches' secretions, particularly saliva, contain physiologically active chemicals. Recent studies have discovered that its saliva contains bioactive peptides and proteins. *Anti-thrombin* (*hirudin*, *bufrudin*), anti-platelet (*calin*, *saratin*), factor *Xa* inhibitor (*lefaxin*), and antimicrobial agents are among them (*theromacin*, *theromyzin*).

Leeches produce a complex mixture of physiologically and pharmacologically active chemicals into wounds while feeding on blood. The antithrombotic agent *hirudin* is abundant in the saliva of leeches. As a result, it is useful in the treatment of cardiovascular illnesses that affect the heart, veins, and arteries.

The saliva of a leech has an inhibitory effect on thrombin. It also temporarily boosts blood flow to the targeted location. It also acts as a *Xa* coagulating factor inhibitor. As a result, it inhibits the coagulation cascade and acts as a *fibrinolytic* agent. In addition, leech saliva has analgesic, anti-diabetic, anti-microbial, and anti-metastatic properties [20].

Certain illnesses, according to *Acharya Charak*, require *raktamokshan*. Bloodletting is recommended in *vatarakta* (gout) utilising *shringa*, *jalauka*, *suchi*, *alabu*, *pracchan* and/or *siravedha*. Bloodletting is not recommended when the *vata* is exacerbated because it causes *rakta kshaya* [21].

Because *visarpa* (*erysipals*) cannot occur without *rakta* and *pitta* vitiation [22] bloodletting is

considered the most important treatment. Bloodletting can be used to treat *Gulma roga* (abdominal tumours) that have not responded to other treatments [23]. Bloodletting is advised in the temporal area or border of hairline in the treatment of *unmada* (psychosis), *vishamjwar* (fever with irregular onset, symptoms, and duration), and *apasmara* (epilepsy) [24].

Bloodletting is based on an ancient medical concept in which blood and other physiological fluids were thought to be humours that needed to be balanced in order to stay healthy. *Pittadosha* and *raktadhatu* are similar in appearance. As a result, the vitiation of one leads to the vitiation of the other. And when *rakta* and *pitta* poisoning has reached a point where herbs or other treatments are no longer effective, *raktamokshan* comes to the rescue.

Hypertension, skin illnesses such as acne, *urticaria*, dermatitis, eczema, abscess, boils, and other illnesses can all benefit from bloodletting. Therapeutic phlebotomy is used to eliminate extra red blood cells from the body in disorders including *hemochromatosis* and *polycythemia vera* [25]. Few of the related studies were reviewed [26-30].

5. CONCLUSION

This is a thousand-year-old *Ayurvedic* precept that is less well-known. Bloodletting therapy is being successfully practised by a large number of educated *ayurveda* practitioners across the country. However, it still lacks mainstream appeal. The need of the hour is for practitioners and patients to become more aware of the benefits of this therapy. It can be used as a preventive measure to avoid the spread of blood-borne infections, as well as a therapeutic measure in the situations discussed in this paper. Yoga and meditation, which are two major parts of *ayurveda*, are well-accepted in the Western world. It also contains a number of other mysteries, such as *raktamokshan*, that must be investigated for the sake of the entire human race.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

NOTE

The study highlights the efficacy of " Ayurvedic " which is an ancient tradition, used in some parts of India. This ancient concept should be carefully evaluated in the light of modern medical science and can be utilized partially if found suitable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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