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A review of medicinal plants selected from Charakokta Shonitasthapan Mahakashyay

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ABSTRACT: Acharya Charak has classified medicinal herbs as per their pharmacokinetics in 50 groups. Shonitasthapana Mahakashyay is mainly pronounced for their actions on the physio-pathological conditions related with the blood. Out of 10 ingredients from Shonitasthapana Mahakashyay, only six medicines of herbal origin were screened thoroughly for their properties, action and indications, considering various Ayurvedic lexicons, texts and scholarly research articles.
It was found that 65% of the herbs from this Shonitasthapana Mahakashyaybelong to kashaya rasa (astringent) and tikta rasa (bitter) each, along with Madhura (sweet) rasa which is present in 50% of the herbs. 65% of herbs work by decreasing the bleeding time and 65% of herbs are good blood purifier. Out of the 6 herbs only Laaja is responsible for maintaining the quality of blood. There are different actions, like blood purification, blood coagulation, increasing the quality of blood,which are all related with the Pitta dosha. It is concluded that these six herbs from ShonitasthapanaMahakashyayunder scrutinyare in possession of kashaya (astringent), tikta (bitter) and Madhura (sweet) rasa (taste) and found to be controlling the pitta dosha.Thus according to various conditions of bleeding disorders, we can categorize these drugs in our treatment.

Keywords: Mahakashyay, Shonitasthapana, hemostatic, blood-purifier

1. Introduction

Being the second largest global population of 1.21 billion[1], India is a major hub for many diseases and is helpless to conquer them, because more than 30% of its population is below of the poverty line. Considering their health, a very common issue is bleeding disorders, which accounts for significant suffering for the patients and their family members. Bleeding refers to the loss of blood from blood vessels anywhere in the body and Sushruta, the great surgeon, has described blood as life[2].If someone has been wounded and is bleeding, it is important to work quickly to control blood loss. In most cases, we should be able to keep the bleeding under control without much difficulty. In more severe cases, shock, circulatory disruption or serious consequences such as tissue damage can arise due to uncontrolled and severe bleeding which can lead to death.

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According to Ayurvedic concepts, blood is totally under control of Pitta dosha in both physiological and pathological conditions. Both Pitta and rakta (blood) are mainly Ushna (hot) in quality and while treating any pathological condition arising from deranged blood, one has to always remember this Ushna veerya. Vagbhata has also mentioned that the food and/or medicines possessing Kashaya, Tikta and/or Madhura rasa are best in controlling Pitta dosha[3].

So the control of bleeding, which also can be labelled as haemostasis, is the primary aim for many diseases, where bleeding can produce unwanted damage to the body organs. Since ages, many herbs are used for this purpose and Charakacharya has classified them under the group of Shonitasthapana Mahakashyay. Actually only 6 ingredients from this Mahakashyay belong to medicinal plant, so we have limited ourselves to study only the herbal part of this Mahakashyay. The pharmacognostical and pharmaco-therapeutics of medicinal herbs come under the subject of Dravyaguna in Ayurveda sciences. Dravyaguna is an essential part of Ayurvedic system of medicine and its study is based on the knowledge of Dravya, Guna, Rasa, Vipaka, Veerya, Prabhava and Karma.

Aim

Literary study of medicinal plants from Charakokta shonitasthapana Mahakashyay.

Objectives

To study the chemical composition of medicinal plants from shonitasthapana Mahakashyay.

To study the Pharmacological action of medicinal plants from shonitasthapana Mahakashyay with respect to Ayurvedic and modern aspect.

2. Material and methods

Literary review of shonitasthapana Mahakashyay was done from Charak Samhita.Study of herbs done from various Nighantu (lexicons) as well as related work done by research scholars was referred.

Shonitasthapana are the drugs which remove derangement of vitiated shonita (rakta) & bring back it to the normal state, also restoring Proper quantity of blood. [4]Raktasthapana means restoring normalcy of blood, haemostatic. According to some Acharya, Shonitasthapana means to stop excessive blood flow.[5]Raktasravarodhak means stopping bleeding, Haemostatic.ShonitasthapanMahakashyay is 46th number of Mahakashyay. This Shonitasthapan group contains 10 ingredients as follows[6]-

1. Madhu (honey),
2. Madhuk-Licorice (*Glycyrrhiza glabra*Linn.)
3. Rudhir (*Crocus sativa* Linn.)
4. Mochrasa (Resin of *Salmalia malabarica* Schott & Endl.)
5. Mrutkapala (Earthen pot pieces)
6. Lodhra (*Symplocos racemosa*Roxb.)
7. Gairik (Ferrum haematite)
8. Priyangu (*Callicarpa macrophylla*Vahl.)
9. Sharkara (Sugar)
10. Laaja (Fried paddy),

Out of these 10 ingredients, drugs of herbal source (audbhida dravya) are studied in this article.

Definition of Shonita: According to Acharya Sushruta, when rasa (Lymph) is mixed with “ranjaka pitta” it forms Rakta or Shonita (blood). The whole Physiology of body is dependent on Rakta. It strengthens the body and keeps it healthy. It increases life span and keeps the person active[7].According to Acharya Sushruta, Raktastambhaka drugs are- Lodhra, Madhuk, Priyangu, Gairik, Sarjerasa, Shalmalipushpa, Shankha, Shukti, Maasha, Yava, Godhum etc.[8]

1. Madhuk (*Glycyrrhiza glabra* Linn.)

Chemical composition- Glycyrrhizin (principal agent), glycyrrhizic acid, glycyrrhetinic acid, liquirtin, isoliquiritin, neoisoliquiritin, liquiritogenin, isoliquiritogenin, glabrin, glabranine, licuraside, licoxhalcones A&B, licoricidin, glabrene, liquiritic acid, glabrolide etc.

Properties as per lexicons (Nighantu)- Sweet taste (Madhura Rasa), Guru, Snigdha Guna, Sheeta Veerya, Madhura Vipaka, Pittaghna, Vataghna, acts on Shukra, Rakta (complexion enhancer-varnya)[9], Majjadhatu(beneficial to eyes) and mala as it promotes healthy hair, Mutragami Karma,Rasayana, Vrushya, Chakshushya, Shukrala, Keshya, Swarya, Vajikara, Medhya, Vedanahara.

Due to madhur Vipaka and sheeta veerya, Yashtimadhu exerts raktastambhak action (haemostatic) by vatashaman property. Especially in AdhogaRaktapitta, it pacifies vata dosha in vatasthana.[10] Its root is haemostatic, haematinic and blood purifier. Thus it is used in anaemia, Raktapitta (bleeding disorders), Vranashotha, Daha (Burning sensation/ irritation).

In skin ailments like psoriasis and eczema, liquorice extract has shown evidential improvements. When implemented in creams and gels it relieves itching, swelling and redness.Its dose is 3-5gram in Powder form. Some formulations of Yashtimadhu are Yashtyadi choorna, Yashtyadipaak, Yashtimadhvadi tail, Madhuyashtyadi tail etc.

Fig.1 Madhuka (*Glycyrrhiza glabra*Linn)

2. Rudhir(*Crocus sativa* Linn)

Properties (Rasa Panchak)- Katu, Tikta Rasa, Snigdha, Laghu Guna, Ushna Virya, Katu Vipaka, Kapha-vataharaDoshaghnata, acts on Rakta (improves complexion, useful in hyper pigmented spots, liver, blood and heart diseases and small pox), Majja (debility), Shukra (impotency), Rasa dhatu (Dysmenorrhoea, amenorrhoea), Mutra (useful in dysuria), Varnya, Shothahara, Deepan, Pachan, Ruchikar, Vishaghna, Chakshushya, Grahi Karma.

Its Stamens or Stigma is useful in liver disorders, heart diseases & blood disorders as it's having blood purifying property. Traditionally saffron is believed to promote fairness of the complexion. It is widely used in cosmetics, especially in fairness creams.Its Dose is 0.5-1gm in Powder form. Kumkumadilepam, Kumkumaditailam, Kumkumadighritam and KesharadiVati are some formulations of Keshara.

Fig.2 Rudhira (*Crocus sativa* Linn.)

3. Mochrasa(Resin of *Salmalia malabarica* Schott & Endl.)

It possessesKashaya rasa, Laghu, Snigdha guna, Sheeta veerya, Madhura Vipaka, Kapha pittaghna, Vata shaman properties. Tannic and gallic acid are its main chemical contents.It is astringent and haemostatic in nature, so it is used in Atisara (diarrhoea), pravahika, raktajapravahika, grahini, raktajaarsha (bleeding piles) and other bleeding disorders. Mocharas used in oral ulcers and for local application on the face in discolouration and hyperpigmentation.

Fig. 3 Mocharas(Resin of Salmalia malabarica Schott & Endl.)

4. Lodhra(*Symplocos racemosa*Roxb.)

Chemical composition- The bark contains loturine 0.06%, coloturine 0.02%, loturidine anddinovine. Ashes contain 18% sodabicarb.,Symposide, (-) epifzelechin; loturine, loturidine, colloturine etc.

Rasa Panchak- Kashaya, Tikta rasa, Laghu, Ruksha guna, Sheeta veerya, Katu vipaka, Kapha-Pittaghnadoshaghnata, Rakta(raktapitta), Purisha (Grahi), Chakshushya, Raktastambhaka, Sandhaniya, Purishasangrahaniya, Vrana-shodhak, Kushthaghna, Kandooghna, Vishaghna.

Predominance of Kashaya rasa results in constriction of microchannels and vessels. Thus acting as shonitasthapana (haemostatic) and vranasandhanakar (wound healing). Since its stem bark or flowers are

coagulant, it is used in bleeding disorders. It causes excellent vasoconstriction of capillaries thus stopping bleeding and reducing swelling.

In Pradara (menorrhagia) or Raktapitta, bark of Lodhra is given orally. Its Stem bark Powder is given in the dose of 1-5gram and decoction in 50-100ml. Lodhrasava, Lodhradikaadha, Rodhrasava, Lodhradi Kashaya and Jatyadi tail are some formulations of Lodhra.

Fig. 4 Lodhra – *Symplocos racemosa* Roxb.

5. Priyangu (*Callicarpa macrophyla*Vahl.)

Seeds and leaves containCaliterpenone,Monoacetate, Betasitosterol, in addition seed contains fatty acid.Priyangu possessTikta, Kashay, Madhura rasa, Guru, Ruksha guna, Sheeta veerya, Katu vipaka. It is tridoshaghna, Vata-pittashamak in nature, acts on raktadhatu, Purisha(Raktatisaar), Mutra (Pittaj prameha). Tikta, kashaya rasa and sheeta veerya of Priyangu pacifies pitta dosha; whereas Kashaya rasa exerts haemostatic action. Its flower is mentioned as Pitta-asradoshjit (acts on Pitta & bleeding disorders)[11] and Rakta-shodhak (blood purifier). Dose of its powder is 1-2gram. Priyangwadi taila is commonly used formulation of Priyangu.

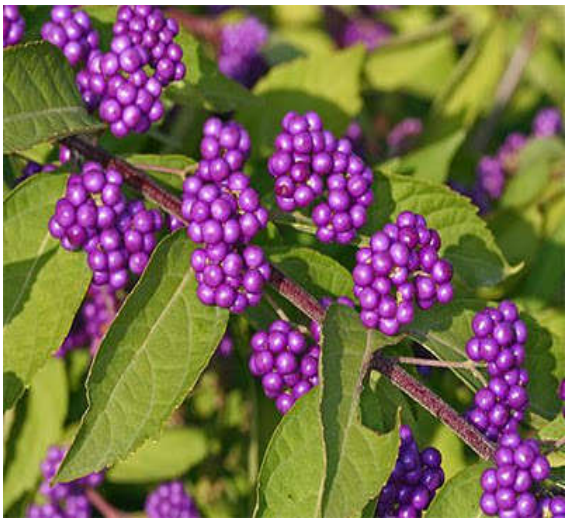

Fig.5 Priyangu (*Callicarpa macrophylla*Vahl.)

6. Laaja(Fried paddy)

According to Kaiyadeva Nighantu, Laaja is prepared by crushing shaali. Laaja is Kashay Madhur in taste, agnideepak (appetizer), Laghu and sheetaveeryatmak (cold potency).
It is useful in Pipasa (cures thirst), Prameha (diabetics), Meda and Kaphashamak, Daah (used in burn), Kaas (cures cough) and decreases mala (waste products).

Fig.6 Laaja (Fried Paddy)

Discussion

Shonitasthapana karma can be explained as the activity of plants which controls the pitta dosha and removes derangement of vitiated shonita (rakta) and bring back it to normal state. This activity is Raktashodhana (Blood purifying), Raktavardhana (Hematopoietic) or Raktastambhan (Haemostatic) in nature.
The six herbs from this ShonitasthapanaMahakashaya possess such attributeswhich controls the Pitta dosha. Another main action of these drugs is related with the derangement of Rakta dhatu, along withmaintenance of its normality. Derangement of Rakta may lead to excessive bleeding which is dangerous for the life, whereadministration of coagulants isvery important.

Action of Shonitasthapaka Drugs:

Anticoagulant activity of Madhuk[12], [13]

Glycyrrhizin, an already known anti-inflammatory compound, has also been found as the first plant based inhibitor of thrombin. It prolongs the thrombin and fibrinogen clotting time and increases plasma recalcification duration. The thrombin induced platelet aggregation was found to be inhibited by the action of glycyrrhizin but platelet Aggregation Factor (PAF) or collagen induced agglutination was not affected by glycyrrhizin.

Antithrombotic activity of Rudhir (Saffron)[14]

An *In-vitro* study noted significant increase of prothrombin time and partial thromboplastin time in the presence of crocin, as well as the inhibition of Xa factor *in* silico. As a summary, it is concluded that saffron exerts antithrombotic effect, especially at the arterial part.

Anti-haemorrhagic activity of Lodhra[15]

From the result of the study, it was found that drug S. Racemosa at a dose level 25 µl/100gram body weight in albino rabbits showed a significance decrease in whole blood coagulation time, prothrombin time and fibrinolytic activity. The author concluded that S. Racemosa possesses significant anti-haemorrhagic potential.

Haemostatic effect of Priyangu

Animal experiments show that this grass has the effect of promoting blood coagulation.Beautyberry has a direct contractile effect and indirectly through the intestinal vascular resistance and blocking contracture oppression haemostasis intestinal vascular. Beautyberry leaf injection increases the bleeding time, blood clot retraction time andshortens Prothrombin time.

Table 1:

	Dravya	Guna	Rasa	Vipaka	Virya
1.	Madhuk*(Glycyrrhiza glabra* Linn.)	Guru, Snigdha	Madhura	Madhur	Sheeta
2.	Rudhir(*Crocus sativa* Linn.)	Snigdha, Laghu	Katu, Tikta	Katu	Ushna
3.	Mochrasa(Resin of Salmalia malabarica Schott & Endl.)	Snigdha	Kashaya	Katu	Sheeta
4.	Lodhra (*Symplocos racemosa* Roxb.)	Laghu, Ruksha	Kashaya, Tikta	Katu	Sheeta
5.	Priyangu (*Callicarpa macrophyla*Vahl.)	Guru, Ruksha	Tikta, Kashay, Madhura	Katu	Sheeta
6.	Laaja(Fried paddy)	Laghu	Madhur, Kashaya	Madhur	Sheeta

Table 2:

Drug name	Madhura (sweet)	Katu (Spicy)	Tikta (bitter)	Kashaya(astringent)
Madhuka	✓	-	-	-
Rudhira	-	✓	✓	-
Mocharasa	-	-	-	✓
Lodhra	-	-	✓	✓
Priyangu	✓	-	✓	✓
Laaja	✓	-	-	✓
% of rasa	50%	16%	50%	65%

We can observe that 65% herbs are possessing kashaya rasa (astringent taste) and 50% herbs each having madhura (sweet) and tikta rasa (bitter) are mainly responsible for pacifying pitta dosha. As per Acharya Vagbhata, kashaya, tikta and madhura rasa are mainly responsible for pittashamana (alleviates pitta). So the base of the shonitasthapana mahakashaya is its pittashamana attribute which diminishes the ushna and vidahi quality of deranged rakta dhatu.

As per modern concept, the derangement of blood is mainly related to its clotting or bleeding values. Increase in bleeding time is mainly related to the ushnaguna of pitta. So controlling the ushnaguna with madhur rasa (sweet taste) and sheeta veerya (cold potency) is the main function of shonitasthapana mahakashaya.

Secondly, to control the bleeding, kashaya rasa (astringent) causes vasoconstriction resulting in obstruction to the blood flow.

In review of some scholarly articles, it is found thatMauricio I, Francischett B, Monterio RQ, Guimaraeas JA. has described the alkaloid of madhuka is responsible for anti-coagulation activity. We cannot comment on this aspect as little research has been done stating the anti-coagulant activity of Madhuka. On the contrary, Ayurveda has prescribed Madhuka in amlapittajavrana for controlling the bleeding in peptic ulcer. It is advisable to correlate the action of 'alkaloid of madhuka' and 'madhuka as a whole drug' for their anti-coagulating activity.

Conclusion

Blood is vitiated mainly by pitta. Shonitsthapan drugs have astringent (Kashaya), Sweet (Madhur) rasa and sheet veerya. Due to these properties these drugs alleviate pitta dosha & remove derangement of pitta directly or indirectly. On the basis of their action we have concluded that-

- Lodhra, andMochrasa help in Raktastambhan (blood coagulating).
- Priyangu and Kumkuma support in Rakta-shodhanactivity (blood purification).
- Laaja indirectly helps in Raktavardhana (increasing quantity of blood).
- Madhuk helps in Raktavilayan activity (anti-coagulation)

For the ease of drug selection in treatment of different bleeding disorders, this study will be very much helpful as it throws light on the mode of action for the individual drugs described in shonitasthapan Maha kashaya.

References:

1. Anita Kar et.al., ''Epidemiology & social costs of haemophilia in India", IJMR Indian journal of medical research, 140(1), 19-31, July 2014
2. Kaviraj Dr. Ambikadatta Shastri, Sushruta Samhita (Hindi Translation), (Varanasi; Chaukhamba Sanskrit sansthan. Reprinted 2005), Vol 1. Sutrasthana Chapter no.14, verse no 44, pg 56
3. Kaviraj Atrideva Gupta, AshtangaHrudaya (Hindi Translation), (Varanasi, Chaukhamba Prakashan. Reprinted 2009.), chapter 1, verse no 15, pg10.
4. Acharya Vidyadhar Shukla &Prof.RavidattaTripathi, Charak Samhita (Hindi Translation,Dehli; Chaukhamba Sanskrit Pratishthan. Reprinted 2005, Sutrasthana, Chapter 4, Verse no.8, Vol 1, pg.71
5. Kaviraj Dr. Ambikadatta Shastri,Sushruta Samhita (Hindi Translation),(Varanasi; (Varanasi; Chaukhamba Sanskrit sansthan. Reprinted 2005), Vol 1. Chikitsasthana Chapter no.1, verse no 48, pg 7
6. Acharya Vidyadhar Shukla &Prof.RavidattaTripathi. Charak Samhita (Hindi Translation). (Delhi; Chaukhamba Sanskrit Pratishthan. Reprinted 2005), Vol 1, Sutrasthana, Chapter 4, verse no18, pg 77
7. Kaviraj Dr. Ambikadatta Shastri,Sushruta Samhita (Hindi Translation),(Varanasi; Chaukhamba Sanskrit sansthan. Reprinted 2005), Vol 1. Sutrasthana Chapter no.14, verse no 44, pg 56
8. Kaviraj Dr. Ambikadatta Shastri,Sushruta Samhita (Hindi Translation),(Varanasi; Chaukhamba Sanskritsansthan. Reprinted 2005), Vol 1- Sutrasthana Chapter no.14, verse no 36, pg 54
9. Prof. Priya Vrat Sharma. Kaiyadeva Nighantu (Hindi translation). (1st ed. Varanasi; Chaukhamba Orientalia.1979), aushadhi varga, verse no. 101-103, pg22
10. Vd. G. A. Phadake, Dravyaguna Shastra, (Vaman Dinanath publication, Mumbai, 1960), Chapter 8, Page no.285
11. Dr. IndradevTripathi, Rajanighantu (Hindi translation), (3rd edition, ChaukhambaBharati Academy, Varanasi, 2003) Chandanadi varga, verse no. 44-46, pg 403
12. Mauricio I, Francischett B, Monterio RQ, Guimaraeas JA. "Identification of *Glycyrrhizin* as thrombin inhibitor", Biochim Biophys Res Commun; 235:259-263, 1997.
13. Mendes-Silva W, Assafim M, Ruta B, Monteiro RQ, Guimaraes JA, Zingali RB *et al*. "Antithrombotic effect of *Glycyrrhizin*, a plant-derived thrombin inhibitor" Res; 112:93-98, 2003
14. Zacharis M Sinakosa, George D Geromichalosb. "The effect of Saffron (*Crocus sativus*) on Haemostasis".Medical, Pharma
15. Deepti Singh Chalia. "Revisiting the past: Review of central Council for research in Homoeopathy Quarterly Bulletin", vol,17(1-4), 1995