

## “Role of Rasayana Chikitsa in Complications of Madhumeha with Special Reference to Micro Vascular Complications”– Systemic Review

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**Abstracts: Background & objective:** Present era is full of stress & strain due to competitive life style. Change in dietary habit leads to upsurge of Diabetes. Diabetes associated with long term potential effect on almost all systems of body. It leads to various complications. These complications can be managed by Rasayana Chikitsa (Rejuvenation therapy) according to Ayurveda which nourishes, develops & corrects the vitiated Saptadhatu. **Objective:** To study the Micro vascular complications in Madhumeha. To study Rasayana dravya from samhitas. To evaluate the Karmukatva (Activity) of Rasayana dravya on Micro vascular complications. **Material and Methodology:** Literary study of Rakta-Medodushti in complications of Madhumeha thoroughly including Charaksamhita, Sushrut samhita & Vagbhat samhita was done. Literary study of micro vascular complication of Diabetes was done, Karmukatva(Activity) of Rasayana dravya on micro vascular complications was studied. **Result:** Diabetic Neuropathy, Nephropathy & Retinopathy are the micro vascular complications of Madhumeha. These complications are mainly due to Rakta- Medo dushti. The Suvarna& Raupya bhasma are sheetveerya & rasayana which acts specifically as balya& give strength to nerves in Diabetic neuropathy. Medovaha& Mootravaha srotas dushti in Diabetic nephropathy cause structural changes in glomeruli. This structural change is corrected by Haridra&Triphala by their rasayana effect. Triphala act as Mehaghna (antidiabetic) by Pachana of vikrit meda. Haridra act as Medoghna (lipolytic);as it possesses laghu, ruksha guna, it reduces sclerosis. There is Rakta dushti in Retinopathy which is marked by retino vascular micro aneurysm & blot hemorrhages. Manjishtha have Pachana (digestive) & Shaman (palliative) effect on Raktagata Kapha-Pitta. It acts as rakataprasadana (blood purifier), vranaropana (wound healing). Suvarnamakshika bhasma is raktaprasadaka, acts on hemorrhagic disorders such as Retinal haemorrhages. **Conclusion:** On the basis of above study, Rasayana dravyas improve quality of life by alleviating micro vascular complications. [Deshpande M NJIRM 2015; 6(1):81-87]

**Key Words:** Micro vascular complications, Rasayana dravya, Madhumeha, Rakta dushti.

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**Introduction:** Prakarshen prabhut prachuram varmvar va mehati mootratyagam karoti yasminroge sa prameha |” Madhav nidan/Prameha 33/Uttarardh/satik pg no: 1

When a person passes turbid, large quantity of urine with frequent micturation, the disease called as Prameha<sup>1</sup>.

Prameha is clinical entity in which Patient passes frequent and turbid urine. According to Charakacharya all 20 types of prameha are due to vitiation of tridosha. But kaphadosha is with the prime importance, which plays an important role in manifestation of disease. Here dravaguna of kapha get raised due to apathyakar aahar, vihar and causes like aasyasukha (comfortable sitting habits), swapnasukha (excessive/ faulty sleeping habits). Vitiated doshas get combined with vitiated dhatus

(dushya i.e.rasa, rakta, mamsa, meda, majja, shukra, kleda, vasa, lasika, ojas); this condition causes dhatwagnimandya which in turn leads to development of unnourished and abundant dhatus; The mainly vitiated dhatu is meda which is abaddha and asanhata meda. This meda and dhatwagnimandya causes kledottapatti. If person continues to have nidana (causes) mentioned earlier, there will be further vitiation of kleda (i.e. waste product of metabolism possessing wetness / liquid property) which in turn gets converted into mootra. The vitiated meda and kleda along with other vitiated doshas and dushyas reaches to mootravaha srotas for excretion leading to one of the major signs i.e. prabhut aavil mootrata in prameha.<sup>2</sup> Madhumeha is one of the type of prameha mainly due to ojudushti.

Madhumeha can be correlated with diabetes mellitus. Present era is full of stress and strain due to lifestyle modification. Changes in dietary habits lead to upsurge of diabetes. Diabetes has long term potential effect on all systems of body, hence it leads to complications. The complications are categorized as Macro vascular e.g. CAD, CVD. & Micro vascular e.g. Neuropathy, Nephropathy, Retinopathy. Skin infections, Tuberculosis. Micro vascular complications are one of the complications in Madhumeha in which Rakta-Meda dushti are seen.

“Rasayanam tu tad kneyam yad jaravyadhivinishanam |” Sharangdhara samhita<sup>3</sup>

The therapy that builds up immunity of body against the disease and also stops the process of ageing is called "Rasayanam" (Rejuvenation therapy).

The word Rasayana (Rejuvenation therapy)<sup>4</sup> is formed with two words Rasa+Ayana. Rasa is rasadi saptadhatu & ayana means vardhana. Rasayana is the chikitsa used for nourishment of Rasaadi saptadhatu. Rasayana dravya nourishes dhatu, Increases dhatwagni; gives strength to srotasa, Because of these properties Rasayana Chikitsa is helpful in micro vascular complications of Madhumeha. So it is important to study Karmuktva of Rasayana dravya on Micro vascular complications.

**Aim:** To study the role of Rasayana Chikitsa on Micro vascular complications.

**Objectives:** 1. To study Rakta - Medodushti in micro vascular complications of Madhumeha.  
2. To study Karmuktva (Activity) of Rasayana dravya on Micro vascular complications.

**Material and Methodology:** This is a literary type of study. Literary study of Rakta & Medo dushti in Madhumeha thoroughly including Charaka samhita, Sushruta samhita & Vagbhat samhita was done. Detailed study of micro vascular complications in Diabetes Mellitus was done. Study of Karmuktva of Rasayana Dravya on micro vascular complications was done.

Following data mentioned is the short review of literature included in study:

#### **Prameha Samprapti: Hetu (Etiological Factors)**

- Vitiating of Tridosha with predominance of kapha dosha
- Vitiating kapha dosha get mixed with medadi dhatu vitiating of kapha with dravaguna (liquid form)
- Formation of bahu (abundant) and abaddha (malformed) dhatu Agnimandya (diminished metabolism)
- Aggravation of dhatu dushti + dhatu shaithilya (laxity) Dhatwagnimandya
- Meda- mamsjanya Dushti vikar Poor metabolism of dhatu
- e.g. pidika (boils) vidradhi (abscess) Excessive production of viguna /vitiating
- kleda (waste product of metabolism possessing wetness)
- Mootrasya kleda vahanam
- Increase in urine quantity to excrete excessive kleda
- Sthansanshraya of vitiating dosha in mootravaha strotas
- Prakruta swarupa (normal appearance) of mootra
- (Urine) gets affected due to presence of
- abnormal constituents as dhatwansh, kleda.
- Prabhat aavil mootrata

**Prameha:** Continuation of hetu sevana (Causative factor) Aggravation of mootravaha strotodushiti lakshana → **Madhumeha**<sup>5</sup>

#### **Importance Rasa-Rakta Dhatu:**

Ta ete sharirdharnat dhatu etiuchate | Sushruta sutrasthan 14 Dhatus are those entities which actually sustain living body.

Rasatraktam tato mamsam mamsan meda prajayate | Medsoasthi tato majja majjna shukram tu jayate || Sushruta sutrasthan<sup>14</sup> Rasa (Constitutional fluid) is bio-converted into Rakta (Blood). Rakta is bio-converted into Mamsa (Muscle), in such fashion previous dhatu generates next dhatu due to bio-conversion.<sup>6</sup> Among these seven entities Rasa & Rakta Dhatu are Aadya (Main) dhatu which nourishes & develops further

dhatu Mamsa (Muscle), Meda (Adipose tissue), Asthi (Bone), Majja (Bone marrow) & Shukra (Semen).

Tatresham sarvadhatunam annapanrasa prinyati | Sushrut sutrasthan<sup>14</sup> Rasa is first dhatu develops from Aahar rasa. It causes Prinan (saturates) of all dhatus.<sup>7</sup>

Tesham kshayvrudhi shonitnitmitte| Sushrut sutrasthan<sup>14</sup> The Kshaya (waning) & Vruddhi (Excess Accumulation) of all dhatus depend upon Rakta dhatu; so vitiation of Rasa-Rakta Dhatu causes impairment of further dhatus.

**Raktadushti:** Dehasya rudhiram mulam rudhirenaiv dharyate| Tasmata yatnen samrakshya raktam jeev iti sthiti ||Shushrut sutrasthan14. The root (originating factor) of body is blood. Body is sustained verily by blood. In other words blood is life so protect the healthy blood carefully. Rakta is one of the saptadhatu. Charakacharya has mentioned Rakta dhatu as Pranayatana.<sup>[8]</sup>Jeevana is the main function of Rakta so Raktadushti leads to various complications which are life threatening.

**Hetu of Raktadushti:** Vidahini annapanani snigdghoushani dravani cha | Raktvahini dushanti bhajtam cha atap analau || Charak vimansthana 5 Raktavahasrotas get vitiated due to the intake of irritant food and drinks, & with unctuous hot and liquid properties, exposure to sun and fire.

**Lakshana of Raktadushti:** Tata shonitajaroga prajayante pruthgvidha| Mukhpakoakshiragsh cha putighran-asyaghandhita|| Gulmopkusha visarpa raktapitta pramilak|vidradhi raktamehashcha pradaro vatashonitam || Charak sutrasthana<sup>24</sup> The following diseases occur due to vitiation of rakta (blood) Mukhapaka (stomatitis), Akshirag (conjunctivitis), Putighran-asyaghandhita (foul odour of nose & mouth), Gulma (abdominal tumor), Upakusha (Pyorrhea), Visarpa (can be correlated with eripsals), Raktapitta (Bleeding disorders), Pramilaka (drowsiness), Vidhradhi (abscess), Raktameha

(diabetes with haematuria), Pradara (menorrhagia), Vatarakta (gout)<sup>9</sup>.

Shonitkshaye twakparushya amlasheetprarthana sirashaithilyam cha ||Sushrut sutrasthan15

Due to waning of Rakta dhatu (blood) - roughness in skin, craving for sour & cold, looseness of vessels occurs.

**Medodushti:** Avyayamad diwaswapnat medyanam cha atibhakshanat| Medovahini dushanti varunyashcha atisevanat| |Charak vimansthana 5 Lack of exercise, day time sleeping, excessive intake of fatty food and excessive consumption of alcohol leads to dysfunction of Medovahasrotas.

**Dushti Lakshana:** Dantadinam maladyatva pragrupam panipadyo| Dahachikkanta dehe trut swadu asyam cha jayate || Madhav nidan Prameha 33 Dantadinam maladyatva (excess dirt at teeth, palate, base of tongue etc.), Panipadyo daha (burningsensation of hand and foot), Dehachikkanta (unctuousness of body), Swadu-Asyata (sweetening of mouth)

**Correlation between Rasa-Raktadushti & Micro Vascular Complications:** Diabetic micro vascular complications affect small blood vessels & capillaries of eye, kidney & brain<sup>10</sup>. The small blood vessel & capillaries can be correlated with *Raktavahi Dhamani* (vessels) which are *moolasthan*(origin) of *Raktavaha Srotasa*(Channel).<sup>11</sup>



**Micro Vascular Complications:** The micro vascular complications of Diabetes encompass long term complications of diabetes affecting small blood vessels. These classically have included Retinopathy, Nephropathy, and Neuropathy<sup>12</sup>. Retinopathy mainly divided into two main categories: Non proliferative Retinopathy & Proliferative Retinopathy. Non proliferative retinopathy is recognized by micro aneurysms, venous loops, retinal haemorrhages, hard & soft exudates. Proliferative retinopathy is defined as presence of new blood vessels with or without vitreous haemorrhage. Proliferative retinopathy represents a progression of nonproliferative retinopathy.

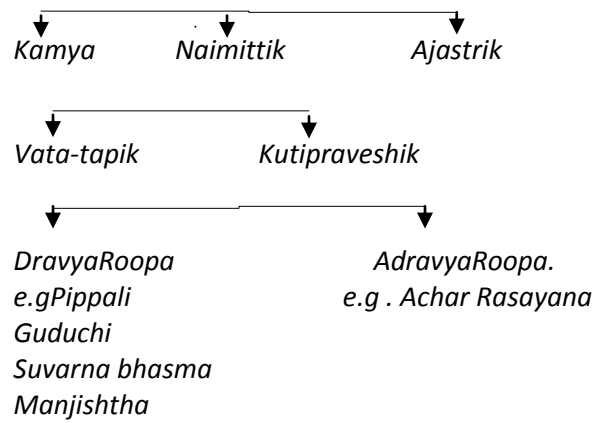
Diabetic nephropathy is defined as the presence of persistent proteinuria greater than 0.5g/day. Diabetic nephropathy results from increased glomeruli capillary flow leads to increased extracellular matrix production & endothelial damage. These lead to glomeruli permeability to macromolecule. Mesangial expansion & interstitial sclerosis ensues resulting in Glomeruli Sclerosis.

Neuropathy is group of conditions characterized by nerve dysfunction. The condition is classified according to nerves affected. The classification of neuropathy includes focal, diffuse, sensory, motor, autonomic neuropathy. Diabetes is associated with dyslipidemia, hyperglycaemia, low insulin & growth factor abnormalities. These abnormalities associated with glycation of blood vessels & nerves. Trauma & neuro entrapment leads to structural nerve damage including demyelination.

**Rasayana:** *Labhopyo hi shastanam rasadinam rasayanam | Charak chikitsasthana 1*  
*Rasayana* (Rejuvenating therapy) is entity that nourishes & develops *saptadhatu*.<sup>13</sup>

*Vardhana* (increase due to nourishment) of *saptadhatu* results into excellent potentiality of body, attain intellect & freedom from disease. It also highlights & improves the Moto of *Ayurveda*.

**Types of Rasayana:**



**Action of Rasayana:**

- Rasayana achieve appyayana of dhatu.
- Improvement of Dhatwagni.
- Give strength or act as Balya for srotasa from which dhatu originates.
- Gives proper direction (Anuloma gati) to vata.

Complication	Rasayana dravya	Rasa ( taste)	Vipak (metabolic activity)	Veerya (Active potency) <sup>23</sup>	Guna (properties)	Karmukatva (Action on complication)
Diabetic retinopathy	<i>Manjishtha</i> (Rubia cordifolia)	<i>Tikta , Kashaya Madhur</i>	<i>Katu</i>	<i>Ushna</i>	<i>Guru, Ruksh</i>	<i>Shaman</i> ( palliative) effect on <i>Siragata vrana</i> (hemorrhage) act as <i>Raktaprasadana</i>
	<i>Swarnamakshik</i> (Copper pyrite)	<i>Tikta Madhur</i>	<i>Katu</i>	<i>Sheet</i>	<i>Laghu</i>	act as <i>Raktaprasadana</i> and <i>raktastambhana</i> ( hemostasis)
Diabetic nephropathy	<i>Haridra</i> (Curcuma longa)	<i>Tikta Katu</i>	<i>Katu</i>	<i>Sheet</i>	<i>Laghu Ruksh</i>	Act as <i>medoghna Shoshana</i> of <i>medogata kleda</i> .

	<i>Triphala</i> (Terminalia chebula Terminalia belerica Emblica officinalis)	<i>Pancha- rasatmak</i>	<i>Madhur</i>	<i>Anushna</i>	<i>Laghu Ruksh</i>	Act as <i>mehaghna</i> (anti diabetic) <i>Pachana</i> of <i>vikruta meda</i> Regulate <i>prabhuta mootrata</i> . (polyurea)
Diabetic neuropathy	<i>Swarna bhasma</i> (Auram)	<i>Tikta , Kashaya Madhur Katu</i>	<i>Madhur</i>	<i>Sheet</i>	<i>Guru Snigdha</i>	<i>Balya</i> to <i>vatavahini Shaman</i> of <i>prakupitavata</i> and <i>Rakta</i> .
	<i>Raupya bhasma</i> (Argetinum)	<i>Kashaya Amla</i>	<i>Madhur</i>	<i>Sheet</i>	<i>Guru Snigdha</i>	<i>Shamak</i> effect on <i>siragatavata</i> <i>Shamana</i> of <i>kshobha , chimchimayan</i> .

**Discussion: Diabetic Retinopathy:** Micro aneurysm is seen due to capillary weakness. Retinopathy is a result of ischemia & release of vasoactive substance that stimulate new blood vessel formation. These vessels are friable & can lead to haemorrhage & cause retinal detachment. According to Ayurveda *sirashaithilaya* (micro aneurysm) & *siragata vrana* leads to *Raktasrava* (Retinal haemorrhages).<sup>14</sup>

**Manjishtha:** *Manjishtha madhura tikta kashay swar-varnakrut | Raktatisar kushtha asra visarpa vran mehanut | | Bhavprakash*

*Manjishtha* is *madhura* (sweet), *tikta* (bitter), *kashya* (astringent) *swar-varnakrut* (good for voice-complexion). Cures *raktatisar* (diarrhea with bleeding), *kushtha* (leprosy), *visarpa* (herpes), *vrana* (wound) & *meha* (diabetes)<sup>15</sup>.

*Manjishtha* due to its *tikta* (Bitter) *kashaya* (Astringent) & *madhura* (Sweet) *rasa* & *ruksha guna* causes *pachan* & *shaman* of *Raktagata kapha-pitta*. This leads to *Raktaprasadana* (blood purifier) & *Raktaposhana* (Nourishment of blood). It is *vataghna*. The *pachana-shamana* and *Tridoshaghanta* corrects *raktadushti* & *sira shaithilya*. *Manjishtha* due to its *vrana shodhana* and *ropana* action treats *siragatavrana* (Retinal hemorrhage). *Manjishtha* act as *Rasayana* in Diabetic Retinopathy by treating micro aneurysms & haemorrhage.

**Suvarnamakshika Bhasma:** *Swarnamakshik swadu tiktam vrusham rasayanam | Chakshushyam bastihritkanth pandumehavishodaram || Bhavprakash*

*Suvarnamakshika* is sweet & bitter in taste. It is aphrodisiac, rejuvenator, good for eye, cures disease of urinary bladder, leprosy, anaemia, diabetes, poison, enlargement of abdomen<sup>16</sup>.

*Suvarnamakshikaismadhura* (Sweet), *tikta* (Bitter), *balya*, *yogavahi rasayana*. As there is capillary weakness, friable vessels leads to retinal haemorrhage. According to *Ayurveda* there is *raktadushti* due to enhancement of *tikshna* & *dravaguna* of *pitta* causes thinning of *Raktavahini* leads to *Raktasrava*.<sup>17</sup>

*Suvarnamakshika* have *raktastambhana* & *prasadana* action due to *madhura, tikta rasa* and *sheetveerya* which stops Retinal haemorrhage.

**Diabetic Nephropathy:** In nephropathy pathogenesis occurs at *vrukka avayava* i.e. *Medovahasrotodushti* (as *vrukka* is *moolsthan* (origin) of *medovahasrotas*). Loss of *snigdha* of *meda* causes *kathinya* at *vrikkagata sira* (glomeruli sclerosis).

**Haridra:** *Haridra katuk tikta rukshoshna kaphapittanut | Varnyatwakdoshamehasrashoth paduvranapha | | Bhavprakash*. *Haridra* is *katuk* (pungent), *tikta* (bitter), *ruksha* (causes



dryness), *ushna* (hot in potency) *kaphpittanut* (mitigates *kapha* & *pitta*), *varnya* (bestows colour). Cures diseases- *twakadosha* (skin), *meha* (diabetes), *asra* (disease of blood), *vrana* (ulcers). *Harirda* act as *medoghna* (lipolytic) by *shoshana* (desiccation) of *medogata kleda* (i.e. a waste product of metabolism possessing wetness/liquid property) due to *laghu rukshaguna*.<sup>18</sup>

**Triphala:** Triphala kaphpittaghani mehakushthahara sara| Chakshushya dipani ruchyavishamjwarna shini|| Bhavprakash. Triphala acts as mehaghna (antidiabetic) due to ruksha guna which causes pachana of vikrit meda & kaphashoshana increases medodhatwagni. Triphala also manages the prabhutamootrata.<sup>19</sup>

**Diabetic Neuropathy:** Prakupitavata in Madhumeha vitiate sira & causes suptata (Numbness), chimchimayana (Tingling sensation), sirashaitilya & shosha.<sup>20</sup>

**Suvarna Bhasma:** Suvarnam sheetalam vrusham balyam guru rasayanam|Pramehgrahnyatisarshcha kushtam jawarm hanti shandhyam|| Bhavprakash Suvarna bhasma is sheet(cold in potency), vrushya (aphrodisiac), balya (strengthening), guru (heavy for digestion), is rasayanam (rejuvenating). Cures diseases as follows-prameha (Diabetes), atisar (diarrhea), grahani (duodenal disease), jwar (fever). Suvarna is snigdha, madhura, kashaya, tikta and sheetveerya. This Rasayana mainly act as balya to vatavahini, causes shamana of prakupita vata.<sup>21</sup> It corrects raktadushti and siradushti.

**Raupya Bhasma:** Rupyam sheetam kashsy amlam swadupak rasm sarm|Vayasa sthapanm snigdham lekhanm vatapittajit||Pramehadikrogashcha nashytiachirat dhruvam|Bhavprakash. Raupya bhasma prepared well is sheet (cold in potency), kashay (astringent), amla (sour) in taste. Swadupak(Sweet at end of digestion), vaysthapanm (retards aging), snigdha (unctuous) lekhan (scraping) vatapittajit (corrects vata and pitta).Cures diseases like prameha. Raupya bhasma acts as shaman on kshobha & chimchimayana as these symptoms are seen due to siragata vataprakopa. Raupya bhasma is balya and rasayana to vatavaha sira.<sup>22</sup>

**Conclusion:** On the basis of above study *Rasayana dravyas* are beneficial on micro vascular complications. *Rasayana dravya* advances life of diabetic patient.

**Scope For Future Study:** Clinical trials on *Karmuktva* (Activity) of *Rasayana dravya* in micro vascular and other complications of diabetes mellitus.

#### References:

1. Madhava nidana with madhukosh tika by vijayrakshit and shrikant datta. Yadunandan Upadhyaya Chaukhambha Prakashan, Varanasi Reprint edition 2006. P.1, 3, 5,7,8,10,18.
2. Charaksamhita - Agnivesh.Elaborated by Charak &Dridhbala. With Ayurveda Dipika commentary by Chakrapanidatta & edited by Yadavjee Trikamjee Acharya, Chaukabha Prakashan Varanasi, Reprint 2011. P.213 ,445.
3. Sharangadhar Samhita. Pandit Shastri P V. 4<sup>th</sup>ed. Varanasi: Chowkhamba Orientale; 2000.Page no.48
4. A Dictionary English and Sanskrit Monier M. – Williams, Motilal Banarasidas Publisher Pvt limited, Delhi, 1992.
5. Charaksamhita - Agnivesh.Elaborated by Charak & Dridhbala. With Ayurveda Dipika commentary by Chakrapanidatta & edited by Yadavjee Trikamjee Acharya, Chaukabha Prakashan Varanasi, Reprint 2011. P.213 ,455.
6. Sushruta Samhita with Nimbandha Sangraha by Dalhana Yadavji Trikamji Acharya Chaukhambha Surbharti Prakashan Varanasi Reprint edition 1994.P 60.
7. Sushruta Samhita with Nimbandha Sangraha by Dalhana Yadavji Trikamji Acharya Chaukhambha Surbharti Prakashan Varanasi Reprint edition 1994.P.60
8. Charaksamhita - Agnivesh.Elaborated by Charak & Dridhbala. With Ayurveda Dipika commentary by Chakrapanidatta & edited by Yadavjee Trikamjee Acharya, Chaukabha Prakashan Varanasi, Reprint 2011. P.181.
9. Charaksamhita - Agnivesh.Elaborated by Charak & Dridhbala. With Ayurveda Dipika commentary by Chakrapanidatta & edited by Yadavjee Trikamjee Acharya, Chaukabha Prakashan Varanasi, Reprint 2011. P.124.

10. Davidson's principles and practical medicine. Davidson. 21<sup>th</sup> ed. China: Elsevier publication; 2010. Page no.827, 828, and 829,830,831,832.
11. Sushruta Samhita with Nimbandha Sangraha by Dalhana Yadavji Trikamji Acharya Chaukhambha Surbharti Prakashan Varanasi Reprint edition 1994.P. 386.
12. Davidson's principles and practical medicine. Davidson. 21<sup>th</sup> ed. China: Elsevier publication; 2010. Page no.827, 828, 829,830,831,832.
13. Charaksamhita - Agnivesh.Elaborated by Charak & Dridhbala. With Ayurveda Dipika commentary by Chakrapanidatta & edited by Yadavjee Trikamjee Acharya, Chaukabha Prakashan Varanasi, Reprint 2011. P.377.
14. "Study of Raktadusthi in complication of Madhumeha". Kaloge S. T.A.M.V. Pune; 2010
15. Bhavaprakasha Bramtia Shankar Mishra Chaukhambha Sanskrit Sansthan, 8th Edition, 2003.P.107
16. Bhavaprakasha Bramtia Shankar Mishra Chaukhambha Sanskrit Sansthan, 8th Edition, 2003.P.597.
17. Aushadhigunadharmashashtra. Gune G. Vaidhyakgranthabhandar; Pune:2005 P.102, 143, 152
18. Bhavaprakasha Bramtia Shankar Mishra Chaukhambha Sanskrit Sansthan, 8th Edition, 2003.P. 110
19. Bhavaprakasha Bramtia Shankar Mishra Chaukhambha Sanskrit Sansthan, 8th Edition, 2003.P.12
20. Charaksamhita - Agnivesh.Elaborated by Charak & Dridhbala. With Ayurveda Dipika commentary by Chakrapanidatta & edited by Yadavjee Trikamjee Acharya, Chaukabha Prakashan Varanasi, Reprint 2011. P.617.
21. Aushadhigunadharmashashtra. Gune G. Vaidhyakgranthabhandar; Pune:2005 Page no.102, 143, 152
22. Aushadhigunadharmashashtra. Gune G. Vaidhyakgranthabhandar; Pune:2005 Page no.102, 143, 152
23. The Practical Sanskrit English Dictionary Apte V.S., Motilal Banarasidas Publisher Pvt limited, Delhi 1992.

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