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## Principles of Drug Formulation w.s.r. To *Pittaja Vikaras*

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### ABSTRACT

Principles of Ayurveda were established thousands of years ago but are still valid in 21<sup>st</sup> century. The most important principle- three dosa theory is the basic foundation to this science. Vata – pitta – kapha are the three basic constituents of human body. Their equilibrium is health and their imbalance is ill-health. Hence an Ayurvedic physician has to assess functioning of three dosas. Once assessed, the imbalance is corrected using drugs possessing the opposite gunas (properties).

Rasashastra and bhaishajya kalapna is the branch which helps in preparation of medicaments that are designed with utmost care to precisely correct the dosha imbalances resulting in the diseases. This branch is aimed at formulating medicines that are target oriented, here the target would be specific doshas and their imbalances.

To prepare such target oriented medicaments, one has to choose the correct medicinal drugs that are collected from suitable place, at suitable time along with anupana specified for the condition. Also the processing techniques vary as per the doshic imbalances. Time of intake of medicaments, dosage and other details should also be kept in mind for target orientation and quick action. In this article an attempt is made by review of different literatures to bring together different principles and commonly used medications to treat pittaja vikaras.

### KEYWORDS

*Dosha, Guna, Anupana, processing techniques*



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## INTRODUCTION

Drug Designing is the innovative process of finding new medications based on the knowledge of biological target. It includes many aspects like collection of drugs, selection and processing of raw drugs, preparation of compound formulation, dose fixation, storage of the prepared drug, time of administration of medicine and also vehicle for administration.

## MATERIALS AND METHODS

### Collection of raw drugs:

**Place of collection:** Acharyas have explained the place of drug collection as the Agneya guna bhuista bhumi example the vindya parvatha for the agneya guna yuktha dravya and sowmya guna yuktha bhumi example the himalaya for the seetha virya dravya<sup>1</sup>. Also in sushrutha samhitha it has been described in a similar manner and specifically for dravya to be used for virechana has to be collected from the place which is agni and jala mahabhoota predominant<sup>2</sup>.

According to the research carried out in

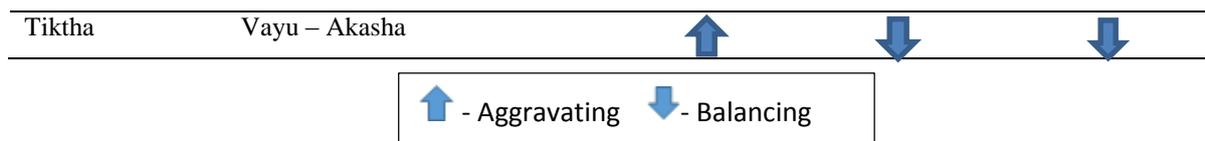
**Table 1** Formation of Rasa from Mahabhoota

Name of Rasa	Mahabhoota Predominant	Effect on vata	Effect on pitta	Effect of kapha
Madhura	Pruthvi – Jala	↓	↓	↑
Amla	Pruthvi – Agni	↓	↑	↑
Lavana	Agni – Jala	↓	↑	↑
Katu	Agni – Vayu	↑	↑	↓
Kashaya	Vayu – Pruthvi	↑	↓	↓

china by Wei Liu on “Influence of environmental factors on the active substance production and antioxidant activity in *Potentilla fruticose* and its quality assessment” investigated the influence of environmental factors on active substance & contents of potentilla fruticose plant from different regions of china. Altitude and temperature played a very significant role and results showed that the plant grown in the region of Kandin province had the best properties<sup>3</sup>, which falls in the Himalayan belt of china.

**Time of collection:** Acharyas have explained that the dravyas for all medicinal preparation has to be collected in the sharad rutu and specifically if being used for virechana or vamana then it has to be collected in the end of vasantha rutu<sup>4</sup>. According to Acharya Sushrutha, when the dravyas are required with the gunas like madhura, singdha, sheetha, i.e the sowmya guna yuktha ayushada, then it should be collected in sowmya ruthu from a sowmya guna bhuista bhumi<sup>2</sup>.

### Rasa of dravya for Pittaja vikara



As per Table - 1, The rasas which are contraindicated for pittaja vyadi i.e. amla, katu, lavana are having agni mahabhoota in them which plays a role in the aggravating pitta<sup>5</sup>. Acharya Sushruta explains the properties of rasa as in Table 2

**Table 2** Properties of Rasa

Rasa	Guna
Madhura	Snigdha, Seeta, Guru
Amla	Snigdha, Ushna, Laghu
Lavana	Snigdha, Ushna, Guru
Katu	Ruksha, Ushna, Laghu
Tiktha	Ruksha, seeta, Laghu
Kasaya	Ruksha, Seeta, Guru

Properties of amla, lavana, katu, are said to be usha which is aggravating factor for pitta<sup>5</sup>. Hence when formulating formulation for pittaja vikara Madhura rasa formulation like – Shatavari guda, Kushmanda rasayana, thiktha rasa formulation like panchathiktha grutha, vasavaleha, kashaya rasa formulation like Dhankaya hima, laksha rasa can be prescribed.

When we see the chemical composition of the rasa we find that the madhura rasa are mainly composed of carbohydrates, tiktha rasa the minerals and vitamins and the kashaya rasa are made up of the proteins. A balanced diet is advised in a Pittala person. On the other hand, the amla and lavana rasa are mainly having the composition of vitamin C and electrolytes and when there

is a pittaja vyadhi for example atisara, person will be in need of the electrolytes.

### **Guna of Dravya in pittaja vikara;**

Qualities of pitta as described in Astangahrudaya Sutrastana are sasneha (slightly unctuous), thekshna (sharp), ushna (hot), laghu (light), visra(foetid), sara (flowing) and drava(liquid)<sup>6</sup>. When there is vrudhi or kshya of any one or more of these gunas then the formulation having the opposite guna has to be prescribed to the patient. Example in the disease pandu, there will be sneha quality of pitta in kshya state, then the grutha yoga like Kalyanaka, mahathikthaka, panchagavya grutha are indicated in the patient<sup>7</sup>.

Table 3 Shows few examples of formulation as per gunas of Pitta.

**Table 3** Few examples of formulations are per the gunas of pitta.

Qualities of Pitta	Formulations	
	Kshaya	Vrudhi
Sasneha	Kalyanaka, Sahathiktaka,	
Theekshna	Sitopaladi choorna	Sarivadi hima
Ushna		Dhanyaka hima
Laghu		Shathavari guda
Visra	Chandana lepa	
Sara	Kumariyasava	Laksharasa
Drava	Ushirasava	Vasavaleha Triphala grutha



### **Veerya and vipaka of dravya in pittaja vikara:**

Pitta is by nature ushna hence seetha virya drugs are highly preferred for the treatment of pittaja vikara. Madura vipaka with snigdha, guru guna has the property to reduce pitta. The other two among the trivida vipaka that is amla and katu vipaka aggravates the pitta. But when selecting the drugs one should also keep in mind the vichitra prathyarabdha dravyas. i.e the dravyas which do not go by the general rule. Example the shunti which is having katu rasa but seetha virya.

### **Importance of grutha in pittaja vikara:**

Grutha is the best samana ayushadi in pittaja dosha aggravation<sup>8</sup>. When we compare the gunas of grutha and pitta they are exactly the opposite and helps in the samana of the pitta dosa and also acts as rasayana and prevents the diseases due to pitta dosa

### **Different processing techniques – Samskara relavent in pittaja vikara:**

Samskara is the process adopted for increasing the natural properties, to add some new properties, to replace a property and sometimes to delete an undesired property<sup>9</sup>. Toya sannikarsha – This samskara renders mrudu, masrana property to dravya that is Katina and khara in nature. Example when we prepare hima kalpana. Shatadhawtha grutha is one more important

preparation which when rubbed and washed with the water hundred times increases the jaja mahabhoota component and thus will get the daha samana and vrana ropana activity in the burn wounds.

Agni Smaskara - This samskara is mainly used for the extraction of the active principles from the dravya. For example, in preparation of chandanadi kashaya. Yastimadhu kashaya.

Shoucha samskara - Shodhana of the dravya like the lashuna in takra helps to reduce its theekshanatha .

Manthana samskara – This is used to render the dravyas with the property of Sadhya bhalakara, pipasa hara and shramahara action. Takra is one such preparation where dadhi undergoes the manthana and takra is indicated for pittaja vikara. A Study by Dr Vathsalya on the topic “A comparative Pharmacutico analytical and clinical study of the pinda thaila and kajitha pinda thaila on symptoms of daha and shoola in vata raktha w.s.r. Diabetic neuropathy showed that the kajitha pinda thaila in comparison to pinda thaila helped in reducing the symptom of daha in the patients.<sup>10</sup>

Desha – the dravyas collected from the Himalaya region has more seetha guna and can help more in pittaja vikara.

Kala – the dravya when soaked overnight like in the hima preparation, when given bhavana under moon light like in pravala



pisti chandra puti, when collected in the sowmya ruthu can have more pitta samana property.

**Bhavana** – Bhavana is where the dravyas are triturated with specific dravyas mainly to enhance their properties. When we compare the pravala bhasma and pravala pisti, pravala pisti is having more of pitta shamana property. Same holds good in muktha pista and many other formulations.

**Kala prakarsha** – When dravyas are subjected to time factor, Example the purana grutha, the properties of the grutha gets enriched and more of pitta shamana properties are imbibed into it

**Bhajana** – The vessel in which the formulation is stored also plays a significant role in the treatment. In astanga hrudaya when explaining different anjana, the anjana which are indicated in pittaja akshi vikara like the madhura anjana, sheetha anjana are said to be stored in swarna pathra and vaidurya pathra respectively enhances the property of the formulation.

### Time of Drug Administration

**Table 4** Few commonly practiced Kalpanas in Pittaja vikaras

Name	Pradana dravya	Indication
Vasaputapaka swarasa <sup>13</sup>	Vasa + madhu	Raktha pitta
Dhanyaka Hima <sup>13</sup>	Dhanyaka, thoya smaskara	Anthardaha, trushna
Sarivadi Hima <sup>14</sup>	Sariva, thoya smaskara	Raktha vikara, kandu, pandu, pama, hastapada daha, amlapitta
Kashaya yoga <sup>15</sup>	Musta, nimbha, patola, chandana, neelakamala, sariva, kasha, Kirathathiktadi kwata	Visarpa

Acharyas have explained different aushadi sevana kala among them when we review the Pragbhaktha and Madhya Bhaktha are specially and directly indicated in the pittaja vikara.

Pragbhaktha is when the medicine is taken before the intake of the food, i.e in empty stomach. This helps in the pachaka pitta to get into balance, the other abnormal pitta in the amashaya to get into normalcy.

Madhya bhaktha is when the medicine is consumed in between the food. This helps the medicine to stay in the amashaya for longer time, Amashaya which is the sthana for pachaka pitta can be corrected by following this aushadha sevana kala<sup>11</sup>.

### Anupana for Pittaja Vikara

Acharya has explained the anupana with madhura sheetha guna in the dose of 2 pala as the apt anupana for the treatment of pittaja vikara<sup>12</sup>.

Table 4 shows few of the commonly practiced Bhaishajya kalpana formulations used in clinical practice for common ailments of pitta dosha.



Sithopaladi choorna <sup>16</sup>	Sitopala, vamshalochana, pippali, ela, twak	Hastapadanga daha, mandagni, urdvaga rakthapitta,
Avipattikara choorna <sup>17</sup>	Trivruth, sarkara , Lavanga, trikatu, triphala, musta, vidanga, ela, tejapatra	Agnimandya, amlapitta, vibandha, arsha
Shadanga paniya <sup>18</sup>	Ushira, parpata, udhichya, musta, nagara, chandana	Pippasa , jwara
Yastimadu kashaya <sup>19</sup>	Yasti, lodra, padmaka, chandana	Pittaja kusta
Kshirapaka prayoga <sup>19</sup>	lagupanchamoola, draksha, neelothpala, vatavaroaha, etc	Rakthapitta, Gudamargi raktha pitta
Laksharasa <sup>20</sup>	Laksha	Asrakdhara, pradara, rakthapitta, raktharsa
Karjuradi mantha <sup>21</sup>	Karjura, dhadima, draksha, tinthidika, amlika, amalaki, parushaka,	Madyavikara, pipasa, shrama,
Udaka kalpana <sup>21</sup>	Thandula, toya samskara	Pittashamaka, moothradaha, alpamuthratha, rajovikara
Panaka kalpana <sup>22</sup>	Chinchapanaka, Candhana panaka	Agnimandya, Hatapada dhaha Trishna, muthradaha,
Phanitha <sup>23</sup>	Ikshu rasa	Guru, madhura, abishyandi, brahmaka, shramahara
Vasavaleha <sup>24</sup>	Vasa, sita, sarpi, madhu, pippali	Rakthapitta
Kushmandavaleha <sup>25</sup>	Kushmanda, grutha, sita, Prakshepaka	Raktha pitta, trushna, brama, shosha,
Haridra kanda <sup>24</sup>	Haridra , gogrutha, gogrutha, sarkara, trikatu, trijata, triphala, lohabhasma	Sitha pitta
Narikela kanda <sup>24</sup>	Narikela, gogrutha, kandasarkara, dhanyaka, chathurjatha	Amlapitta, aruchi, raktha pitta, shoola
Shathavari guda <sup>26</sup>	Shatavari, ikshurasa, grutha, maduka, ushira, candana	Kusta, rakthapitta, halimaka
Kaishora guggulu <sup>27</sup>	Triphala, guduchi, guggulu, trivruth, danthi, trikatu	Triphala, guduchi, guggulu, trivruth, danthi, trikatu
Dhatryavaleha <sup>28</sup>	Yastimadu, vamshalochana, sunti, pippali, draksha, dhatriphala rasa	Kamala , pitta vikara, pandu, halimaka
Sathavari grutha <sup>29</sup>	Shathavari, go grutha	Raktha pitta, trushna, moorcha
Mahathikthaka grutha <sup>30</sup>	Sapthaparna, ativisha, sampaka, thiktharohini, pata, musta, ushira, triphala, patola, padmaka, shatavari, sariva, vasa, murva, kiratathiktha , amalakiphalarasa	Pittaja kusta , kusta with raktha involvement, rakta arsha, visarpa, amlapitta, vataraktha, pandu, kamala, rakthapradara
Panchagavya grutha <sup>30</sup>	Gomaya, godadhi, go kshrira, gomuthra, gogrutha	Pandu, apasmara, kamala,
Kalyanaka grutha <sup>30</sup>	Triphala, vishala, devadharu, sariva, haridra, priyangu, neelakamala, etc	Pandu, vataraktha, unmada, visarpa,
Panchathiktha grutha <sup>31</sup>	Vasamoola, nimbha twak, guduchi, kantakari, patola patra,	Vishama jwara, pandu, kusta, visarpa, krimi
Triphaladi grutha <sup>32</sup>	Triphala, sathavari, guduchi, ajaksheera etc	Akshi roga , pitta prakopa netra srava
Bruhatdhatri grutha <sup>32</sup>	Amalaki, vidari kanda, kshira, shathavari, panchatrana, etc	Trushna, daha, pittavriddi janya vikaras.
Chandanasava <sup>32</sup>	Chandana, gambhari, kamala, priyangu, lodra, pata, draksha etc	Sheetha virya, balya, moothrala, dahashamaka, pitta samaka
Lodrasava <sup>32</sup>	Lodra, kachura, pushkara moola, ela, vidanga, etc	Pittaja prameha, pandu, arsha, kusta, yakruth balyakara, raktha pradara, raktha pitta , masurika, romanthika
Ushirasava <sup>33</sup>	Ushira, kamala, priyangu, lodra, manjista, etc	Raktha pitta, pandu, raktha vikara, dahashamaka, pitta shamaka, muthrala, prasadaka



## Maharasa Dravyas in pittaja vikaras

When we see the qualities of the maharasa dravya, Abraka with snigdha, parama shishira guna and swadu vipaka has direct indication in pittaja vikaras. Makshika is having Madhura – thiktha vipaka is indicated in pittaja pandu and kusta.

Sasyaka having Madura kasaya rasa, lagu guna is also having kapha pittahara property and indicated in the diseases like kusta, switra, amlapitta.

Table – 5 shows the general attributes of the maharasa varga dravyas<sup>34</sup> which are indicated for pittaja vikaras.

**Table -5 General attributes of the maharasa varga dravyas,**

Dravya nama	Guna – karma
Abraka	Snigdha, parama shishira, swadhu
Vaikranta	Tridosahara, pandu
Makshika	Madhura, thiktha, pandu, kusta
Vimala	Vata- pittahara, vrushya, rasayana
Shilajatu	Thiktha rasa, katu vipaka
Sasyaka	Kashaya, Madura , lagu,kaphapitta hara, kusta ,swithra, amlapitta
Chapala	Tiktha, ushna, tridosahara
Rasaka	Sheeta, kapha- pitta hara, raktha pitta, kuta , vicharchika

Some of the common formulations with maharasa used specifically in pittaja vikara in clinical practice, is explained in Table - 6

**Table 6** Few common formulations with Maharasa used in pittaja vikara

Name	Important ingredients	Indications
Arogyavardhini vatika <sup>34</sup>	Kajjali, abra-ka –tamra- basma, shudda shilajathu	Kusta, pittaja jwara, agni mandya
Panchamrutha parpati <sup>35</sup>	Parada, gandaka, abra-ka bhasma , loha bhasma, tamra bhasma	Raktha yuktha pravahika, athisara, pandu, amlapitta,
Vasantha kusumakara rasa <sup>36</sup>	Pravala pisti, rasasindoora, muktha pisti, abra-ka bhasma	Jeerana raktha pitta, hrudroga, yakruth vikruthijanya vikara

Among the uparasa varga dravyas Gairika and anjana are specifically indicated in pittaja vikara, Gairika with snigdha, Madura, shishira guna is indicated in raktha pitta. Anjana with sisira, lekana, snigdha, swadu guna is said to be Kapha pitta

nashana indicated in raktha vikara. Table 7 is a compilation of common formulations with uparasa varga dravya used in pittaja vikara in clinical practice.

**Table 7** Few common formulations with uparasa varga dravya used in pittaja vikara in clinical practice

Name	Important ingredients	Indications
Pushyanuga choorna <sup>37</sup>	Gairika, pata, jambhu, daruharidraka mala, lodra, candana yesthi madu	Athisara, arsha, rakthaja yoni dosa
Lagushootasekara rasa <sup>36</sup>	Gairika , shunti choorna bavana in nagavalli swarasa	Pittaja shirashoola, ardavabedaka, unmada, daha , visratha in sweda, raktha pitta



Shootashekara rasa <sup>36</sup>	Parada, gandaka, suddha vatsanabha, swarna bhasma, tamra bhasma, shanka bhasma etc	Amlapitta, daha, pittaprapakopa in amapakwashaya, pittaja vayadis
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When we look into the dhathu varga dravyas, Swarna, rajatha, tamra, loha all are indicated in pittaja vikara, Ghrusta swarna is a better option than the swarna bhasma as it is comparatively more madhura, seethala, and hence pittamaya nashana. Rajatha is also having property of sushishira. Its vipaka is madhura. It is daha hara, smruthi kanthi kara, trushna, brahma hara. It can do

pittamala vishudhi. Tamra is pitta saraka and inticated in diseases like amlapitta, pandu, udara etc pittaja vikara. Loha too is indicated in all types of pittaja roga in shaka and kostashritha.

Table – 8 shows the important dhathuvarga dravyas and their properties as per the classics<sup>38</sup>.

**Table 8** Dhathuvarga dravya in pittaja vikara

Dhathu	Guna – karma
Swarna	Ghrusta swarna is madhura, sheetala, pittamaya prashamana
Rajata	Sushishiram, Madhura vipaka , Dahahara, Smruthi-kanthi kara, trushna, brama hara, madathyaya hara , pittamala vishudyathi
Tamra	Thiktha- Kashaya rasa, madhura vipaka, pitta saraka, kusta, amla pitta, pandu, udara
Loha	Thiktha kasaya rasa, Madhra vipaka, sheeta virya, all types of pittaja roga in shaka and kostasritha

Table -9 Shows list of few formulations having the main ingredient as the dhathu varga dravya, and their use in pittaja vikara in clinical practice. Among the rathna varga

and uparathna varga dravyas too almost all are having the properties to curb the pittaja vikaras.

**Table 9** Few formulations having the main ingredient as the dhathu varga dravya used in pittaja vikara in clinical practice

Name	Important ingredients	Indications
Loha parpati <sup>39</sup>	Shuddaparad, shuddha gandaka, loha bhasma	Pandu, pittaja prameha, kamala, athisara, pleeha vrudhi, etc
Chandra kala rasa <sup>40</sup>	Parada, gandaka, abhraka bhasma, tamra bhasma, shunti, dhadima, shathavari, kumara etc + sheetha virya choornas mix	Raktha pitta, raktha pradara, amlapitta, daha, brahma, moorcha
Lakshmivilasa rasa <sup>40</sup>	Swarna, rajatha, thamra, loha, mandoora, abraka, naga, muktha in bhasma form	Pandu, kamala, mandagni, yakruth uttejaka

Among the rathna varga and uparathna varga dravyas too almost all are having the properties to curb the pittaja vikaras.

Table- 10 has the list of rathna, uparathna and other varga dravyas which are useful in the treatment of pittaja vikara.



**Table 10** Important Rathna - uparathna etc varga Dravyas in pittaja vikara<sup>41</sup>

Dravya	Guna – karma
Manikyā	Medhya, madhura, rasayana, pitta – vata hara
Muktha	Madhura, shishira param, daha samana
Pravala	Madhura, laghu, sheetalam, raktha pitta, athisweda hara,
Vajra	Sadrasa, yogavahi, tridosa hara, rasayana
Gomeda	Twak dosa samana, madhura, pitta kapha hara, pandu, medhya

Vaidurya	Madhura, shishira, medhya, rakthapitta, pittamaya prashamana
Godanthi	Sheeta, pittaja jwara,
Shanka	Sheetala, amlapitta, pittaja shola, varnya

Few popular formulations with rathna uparathna along with their references and specific indication as per the given in Table

– 11

**Table 11** Few common formulations with rathna and uparathna etc dravyas used in pittaja vikara

Name	Important ingredients	Indications
Navarathna raja mruganka rasa <sup>42</sup>	All rathnas, parada, gandaka, swarna, rajatha, thamra, abrakha bhasma	In pandu, vataraktha, halimaka, prameha, jwara,
Pravalapanchamrutha rasa <sup>42</sup>	Pravala, muktha, shanka, shukthi, varatika bhasma	Agnimandya, ajeerna, pleeha roga, hudroga, athisara
Kamadhuga rasa <sup>43</sup>	Muktha and pravala pisti, suktha-varatika-shankabhasma, guduchi satwa	Sheetha virya, pitta vikaras, amla pitta, daha, moorcha, brahma, shira shola, mukapaka, raktharsha

## DISCUSSION

Acharyas have explained many formulations for the treatment of single disease. This is because the doshic imbalance in each person can be due to different reasons, showing different signs and symptoms. Once we identify it as pittaja disease it is also important to identify which guna or karma of pitta is compromised. Then the treatment can be planned as per the different options given in treatises.

Also an intelligent vaidya can prepare formulation by removing dravya or adding a dravya needed for specific conditions. Thus the vaidya can choose, prepare and prescribe the medicines by thoroughly understanding the examples given in our Shastra.

## CONCLUSION

Our acharyas have given us the freedom to choose from the innumerable dravyas and prepare different types of formulations.<sup>44</sup>



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