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Understanding the role of *Sushrutokta Salsaradi gana* in *Panduroga*

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Abstract

Ayurveda is the oldest system of health care dealing with both preventive and curative aspect of life in a most comprehensive way and presents a close similarity WHO's concept of health pronounced in the modern era. *Pandu* is *Varnopalkshitha Vyadhi* and mentioned in both *Santarpanothha* and *Apatarpanothha vikaras*, whereas *Panduta* is *Pratyatma Lakshana* and so *Alparakto Alpa Medosko* is also said for *Pandu*. This description avails the correlation of anaemia with *Pandu*. Iron deficiency is a disease that has similar paleness, constitutional symptoms, aetiology and pathology. *Pandu* and iron deficiency anaemia have been studied in parallel to facilities the better understanding of the disease. This disease was chosen for the study due to extremely high incidence. Iron deficiency is the commonest nutritional deficiency worldwide and its prevalence is highest in India. So, we are proposing the *Salsaradi gana* as the best choice in *Santarpanothha Pandu Vyadhi*. *Acharya Sushruta* has explain that the drugs involved in *Salsaradi Gana* are useful in different conditions like *Prameha*, *kapha* and *meda vishoshaka*, and in *Panduroga*. But in this article we have try to discuss about the pharmacological action of *Salsaradi Gana* in *Pandu Vyadhi*. These drugs possess predominance of *Kashaya rasa*, *Katu Vipaka*, *Sheeta veerya* and *Ruksha-Laghu guna*. Thus, help to reduce the *lakshanas* of *panduroga*.

Keywords –
Salsaradi gana, *panduroga*, pharmacological action.

Introduction-

The practice of Ayurveda as a medicine is believed to date back to over 5,000 years, during the Vedic period of Ancient India. The name "Ayurveda" derived from two words in Sanskrit as "*Ayush*" means "life" or "longevity" and "*Veda*" means science or scared knowledge. Roughly the definition of Ayurveda is "the science of longevity". As its root, Ayurveda has holistic

tradition and way of living that can help each of us to claim and celebrate our capacity for wellness. The Sanskrit word for health is '*Swastha'*, is a state in which the *Mana* (mind), *Aatma* (soul) and *Indriya* (senses) *Samyoga* (interact) harmoniously to experience a feeling of self, wellbeing and even bliss. Ayurveda recognises five elements called as *Panchamahabhuta* as the fundamental building blocks of nature. These are *Akasha, Vayu, Teja, Jala* and *Prithvi*. [1]

Pamchabhautika siddhanta is the main part of *chikitsa* in Ayurveda because all dravyas are *Pamchabhautika* in nature.[2] It also identifies twenty qualities (*Guna*) that can be used to describe certain substance or drug viz., *Guru, laghu, Manda, Tikshna, Hima, Ushna, Snigdha, Khara, Shlakshna, Ruksha, Sandra, Kathina, Mrudu, Sthira, Sara, Sukshma, Sthoola, Vishada, Picchila* and *Drava*. [3] Without these *gunas dravyas* cannot be used in *chikitsa*. Any *dravya* can be used as medicine if they possess specific quality or *Guna* and used in proper *matra*. Then, there are three *doshas* as *Vata, Pitta* and *Kapha*, useful in the assessment of treatment in *vyadhi*. [4]

The reason behind the all diseases is one and only one i.e. *Agnimandya*. As Acharya Vagbhata said that "*Rogah sarvepi mandagnau*". [5] It is the disease itself and symptoms in all the diseases. Ayurvedic medicine has potential to cure and maximize the *Agni* and maintain in good state.

Pandu is one of the disease in which *Agnimandya* is the major cause in most of the cases. According to Ayurveda, the *panduroga* is not restricted upto *Apatarpanottha vyadhi* but it also included in *santarpanottha vikara*. [6] *Adhyashana, Ajeernashana, Vishamashana* and excessive *Madhura rasa sevana* are the cause of *Agnimandya* in *Santarpanottha Panduroga.* In modern it can be co-related with the disease Anaemia specially iron deficiency anaemia.

Acharya Sushruta has given the combination of drugs which treat the *Panduroga* is *Salsaradi gana*. The drugs involved in the *Salsaradi gana* are *Salsara, Ajakarna, Khadira, Kadara, Kalskandha, Kramuka, Bhurja, Meshashringa, Tinisha, Chandana, Kuchandana, Shimshapa, Shirisha, Asana, Dhava, Arjuna, Tala, Shaka, Naktamal, Putika, Ashwakarna, Aguru and Kaliyaka.* [7] This drugs are useful in many diseases like *Prameha*, etc. but there is no clinical trial on pharmacological action of these drugs in *Panduroga*.

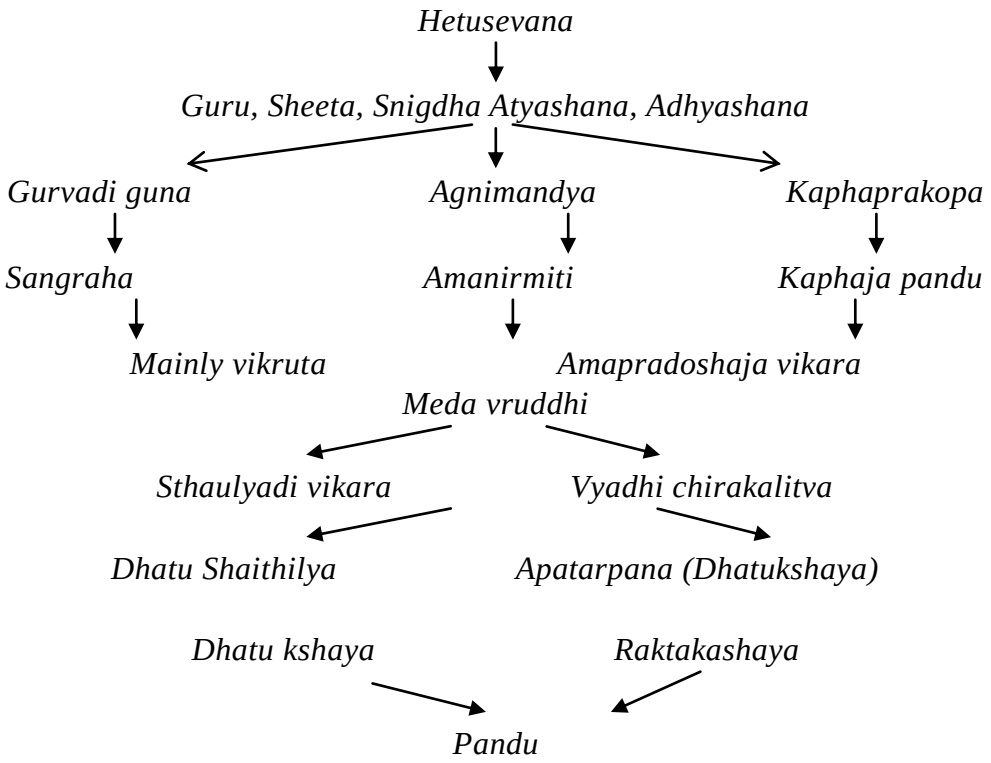
Review on drugs involved in *Salsaradi gana*-[8]

Sr. No.	*Dravya*	*Rasa*	*Vipaka*	*Veerya*	*Guna*	*Doshghanata*
1	*Salsara*	*Kashaya*	*Katu*	*Sheeta*	*Ruksha*	*Kapha,Pitta*
2	*Sarja*	*Kashaya*	*Katu*	*Sheeta*	*Laghu, Ruksha*	*Kapha,Pitta*
3	*Khadir*	*Tikta, Kashaya*	*Katu*	*Sheeta*	*Laghu, Ruksha*	*Kapha,Pitta*
4	*Tindukbhed*	*Kashaya*	*Katu*	*Sheeta*	*Ruksha, Laghu*	*Kapha,Pitta*
5	*Kramuka*	*Kashaya, Madhura*	*Katu*	*Sheeta*	*Guru,Ruksha*	*Kapha,Pitta*
6	*Bhurja*	*Kashaya*	*Katu*	*Ushna*	*Laghu, Ruksha*	*Tridosha*

7	*Meshshrungi*	*Kashaya*	*Katu*	*Ushna*	*Laghu, Ruksha*	*Kapha,Vata*
8	*Tinisha*	*Kashaya*	*Katu*	*Sheeta*	*Laghu, Ruksha*	*Kapha,Pitta*
9	*Chandana*	*Kashaya*	*Katu*	*Sheeta*	*Laghu, Ruksha*	*Kapha,Pitta*
10	*Raktachandana*	*Kashaya*	*Katu*	*Sheeta*	*Guru, Ruksha*	*Kapha,Pitta*
11	*Shinshapa*	*Kashaya*	*Katu*	*Ushna*	*Laghu,Ruksha*	*Tridosha*
12	*Shirisha*	*Kashaya, Tikta, Madhura*	*Katu*	*Ushna*	*Laghu, Ruksha, Tikshna*	*Tridosha*
13	*Asana*	*Kashaya, Tikta*	*Katu*	*Sheeta*	*Laghu, Ruksha*	*Kapha,Pitta*
14	*Dhava*	*Kashaya*	*Katu*	*Sheeta*	*Laghu, Ruksha*	*Kapha,Pitta*
15	*Arjuna*	*Kashaya*	*Katu*	*Sheeta*	*Laghu, Ruksha*	*Kapha,Pitta*
16	*Taala*	*Kashaya*	*Katu*	*Sheeta*	*Laghu, Ruksha*	*Kapha,Pitta*
16	*Shaka*	*Kashaya*	*Katu*	*Sheeta*	*Laghu, Ruksha*	*Kapha,Pitta*
18	*Naktamala*	*Tikta, Katu, Kashaya*	*Katu*	*Ushna*	*Laghu,Tikshna*	*Kapha,Vata*
19	*Putikaranja*	*Tikta, Katu, Kashaya*	*Katu*	*Ushna*	*Laghu, Ruksha*	*Kapha,Vata*
20	*Ashwarna*	*Katu, Tikta*	*Katu*	*Ushna*	*Laghu,Ruksha*	*Kapha,Vata*
21	*Aguru*	*Katu, Tikta*	*Katu*	*Ushna*	*Laghu, Ruksha, Tikshna*	*Kapha,Vata*
22	*Pitchandana*	*Tikta, Madhura*	*Katu*	*Sheet*	*Laghu, Ruksha*	*Kapha,Pitta*

***Samprapti* of *Pandu*-**

Acharya Charaka in 17th *adhyaya* of *sootrasthana* has described the *samprapti* of *panduroga* which is more described towards the *santarpanottha panduroga* [9] as follows-



- *Dosha* - *Tridosha* with dominance of *Pitta*
- *Dushya* - All *Dhatu* including *Oja*
- *Srotas* - *Rasavaha, Raktavaha, Medovaha*
- *Strotodusti* - *Sanga*
- *Udbhavasthana* - *Hridaya*
- *Sanchara* - Whole body
- *Vyakti Sthana* - *Twak*
- *Roga Marga* - *Madhyama Roga Marga*

Pathophysiology of iron deficiency anaemia [10]

3-4 gram of iron is present inside the adult. Out of these, 60-70% of iron is present inside the Hb of the RBCs. After 120 days when the RBCs will die, releases Hb which breakdown into Haeme and Globin. This Haeme again converted into iron and binds with transferrin which transports the molecules present inside the blood. This iron goes into bone marrow through blood to make Hb again or that can be stored in the form of ferrous ion.

The remaining 30% of the iron which is not used to make Hb is known as tissue iron. It is of two type's i.e. available storage of iron and non-available iron. The available storage of iron is reutilised to make Hb again and the non-available form cannot used to make Hb, but it is used to make myoglobin and enzymes like catalyse.

Physiology of iron metabolism [10]-

When the food enters in the stomach, acids and some other substances break the food stuff and iron is released. This iron is initially in Fe+3 form i.e. ferric form. With the help of vitamin C, these ferric iron are converted into ferrous iron i.e. Fe+2 ion and is absorbed by lining of epithelium of GIT lumen. Here it is stored in Fe+2 form. At this stage HFE protein has key role in absorption of ferrous iron inside lining of epithelium of GIT. Some part of these ferrous iron goes inside the blood and bind with transferrin and again convert into ferric iron form. Most of the ferrous iron will be stored in the lining epithelium itself by binding with protein called apoferretin and the substance called as Ferritin which is stored inside lining epithelium itself. The ferric iron inside the blood called as transferred iron, goes to different places like bone marrow where all blood cells are made and the RBCs required Hb inside them.

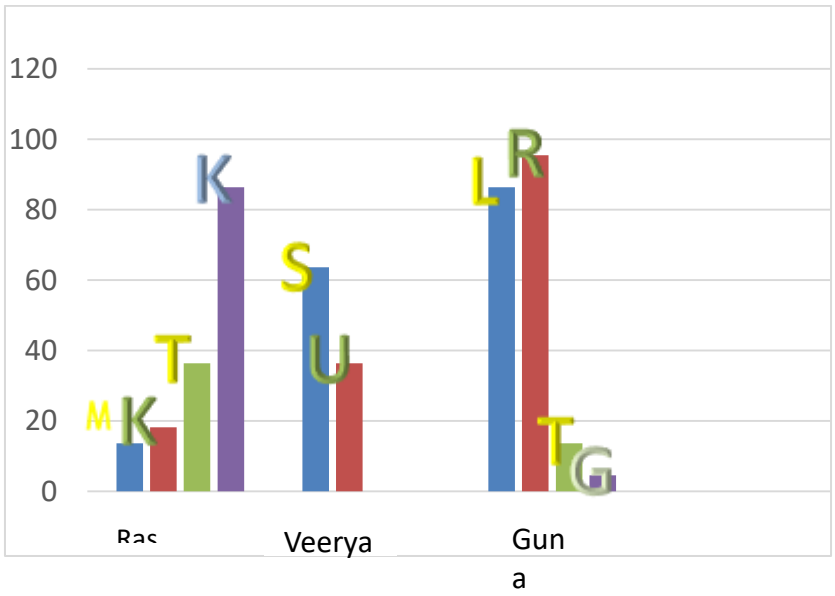
Causes of iron deficiency anaemia-

There are number of causes for iron deficiency anaemia. Out of which,

inadequate intake of iron is one of the causes. It is due to two reason viz., impaired absorption of iron and nutritional deficiency. The absorption of iron is impaired due to gastrointestinal diseases, surgical history of GIT i.e. partial gastrectomy. So due to this, there is reduced in the capability of HCL and the HCL is important for the breakdown of food particles and release of iron. [11]

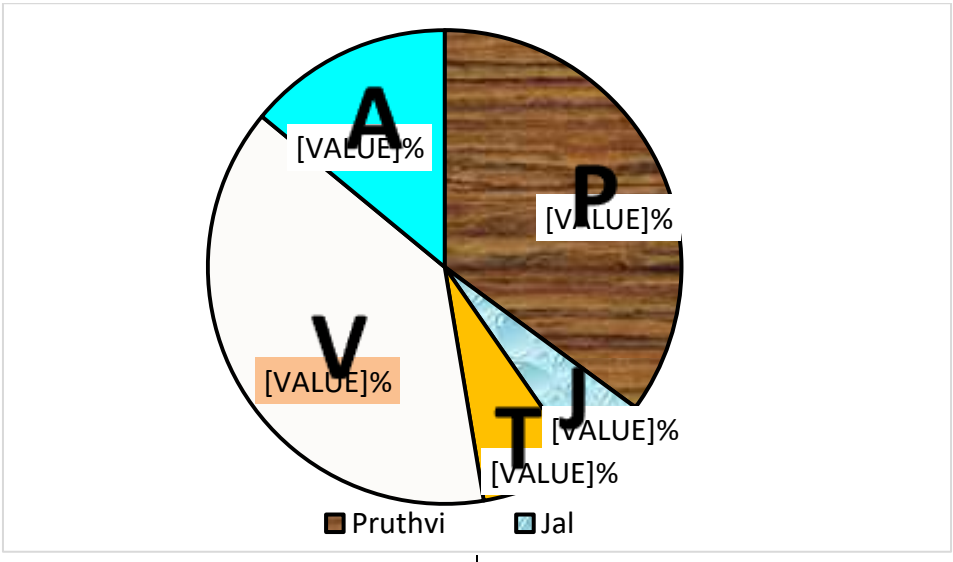
Discussion-

***Rasapanchaka* of *Salsaradi gana*-**



From the above bar diagram, it is clear that these *dravyas* have predominance of *Kashaya* and *Tikta rasa*, *Sheeta veerya* and *Ruksha* and *Laghu guna*.

***Panchabhautika* constitution of *Salsaradi gana*-**



The above pie diagram indicate that these group of *Salsaradi gana* has predominance of *Prithvi* and *Vayu Mahabhuta*.

Pandu is the disease in which there is vitiation of *pitta* and *Rakta dosha*, predominance of *Kashaya* and *Tikta rasa* decrease these *doshas*. [12] Also *Kashaya rasa* has *Astrashodhana, kleda-meda-vishodhana* property, due to which *Rakta shodhana* takes place and the *kleda-meda-shoshana* property helps in decreasing the formation of *Krimi* in the GIT. [13] Ultimately shows anti-helminthic activity. In *Pandu*, due to stressful condition there are formation of free radicals or ROS. *Kashaya rasa* (Astringent) is a good source of anti-oxidant. *Sheeta veerya* is *pittashamaka* and has the main *karma* '*Jeevana'* which is also of *Rakta dhatu*. [14] It helps in *Rakta prasadana*.

Prithvi mahabhuta has *Sthairya*, *Bala*, *Upachayakara* properties. Hence it decreases *Shaithilya* and other *lakshanas* in *Pandu*. *Vayu mahabhuta* has predominance *Laghu* and *Ruksha guna*, so it helps in decreasing the *strotorodha* caused by *Sheeta*, *Guru*, *Atisnigdha* and *Picchila gunapradhanata*. [15]

All these *dravyas* possess *Katu veerya* which has the property '*Agnideepana'* and '*Amapachana'*. [16] These two *karmas* are very essential to cure *Agni*; the main cause of any disease.

Conclusion-

Pandu is *Pitta pradhana tridoshaja* vyadhi which vitiates *Rasadi dhatu*. *Kashaya rasa* reduces *pitta* and *pittashamaka* property helps in controlling the enzymatic activity in the gut; thus improving the iron absorption. The *kashaya rasa* also keeps the *pitta dosha* in balance state. *Sheeta veerya* has *pralhadana, prasadana, sthirikarana* properties. *Katu vipaka* has *Deepana, paachana, ruchya, shodhana* properties. All the drugs in salsaradi gana have anti-oxidant, hepatoprotective, anti-ulcer, anti-helminthic activities. Therefore, it can be stated that *Salsaradi gana* is useful in the treatment of *Pandu* (Iron deficiency anaemia).

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