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A CLASSICAL VIEW OF HERBS ELUCIDATE ON APLASTIC ANAEMIA (PANDU VYADHI)

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ABSTRACT

All over the world 0.7 to 4.8 cases per million of the aplastic anaemia are seen with same risk in both male and female. There is no effective treatment for aplastic anaemia. In the modern science bone marrow transplant is the prime treatment to extend the life span of patient for few year. In aplastic anemia body fails to form the blood cells like red blood cell, white blood cell and platelet. In aplastic anemia various clinical conditions are seen like, if red blood cell fails to form then it leads to anemia, when body fails to form white blood cell then patient may have risk of infectious disease and due to platelets, bleeding disorder may persist.

According to Ayurveda the disease related to blood mostly included in Pandu Vyadhi. Clinically pallor, palpitation, fatigue, breathlessness, bleeding, risk of infection are commonly seen in Pandu Vyadhi. Aplastic anemia consider as a Nindita Vyadhi in Ayurveda. According to the Acharya sushruta, "***Dehasya rudhira mula***" which means blood is the root source of our body and which sustains the life. In aplastic anemia we must focused on the Raktadhatu Vardhaka Dravya (drugs which has potential to raise blood cells), Raktadhatu Shodhaka Dravya (drugs which has potential to purify blood) and Rakta Sangrahana Dravya (blood coagulants). Ayurveda not only cures disease but also rejuvenate the body functions. As we all know, in Ayurveda we also have immune modulator drugs, which are beneficial in aplastic anaemia. So we have the number of Ayurvedic drugs like

Jivaniya Gana dravya, Bruhaniya Dravya and Raktaprasadana Dravya, which are effective in breaking the Samprapti and extent the life span of aplastic anaemic patients.

Keywords: Aplastic anemia, Raktadhatudusthi, Raktavardhaka Dravya, Raktashodhan Dravya, Raktasangrahan Dravya, Jivaniya, Bruhaniya and Raktaprasadaka Dravya

INTRODUCTION

All over the world 0.7 to 4.8 cases per million of the aplastic anaemia are seen with same risk in both male and female. There is no effective treatment for aplastic anaemia. In the modern science bone marrow transplant is the prime treatment to extend the life span of patient for few year. In aplastic anaemia body fails to form the blood cells like red blood cell, white blood cell and platelet. In aplastic anaemia various clinical conditions are seen like, if a red blood cell fails to form then it leads to anaemia, when body fails to form white blood cell then patient may have risk of infectious disease and due to platelets, bleeding disorder may persist.

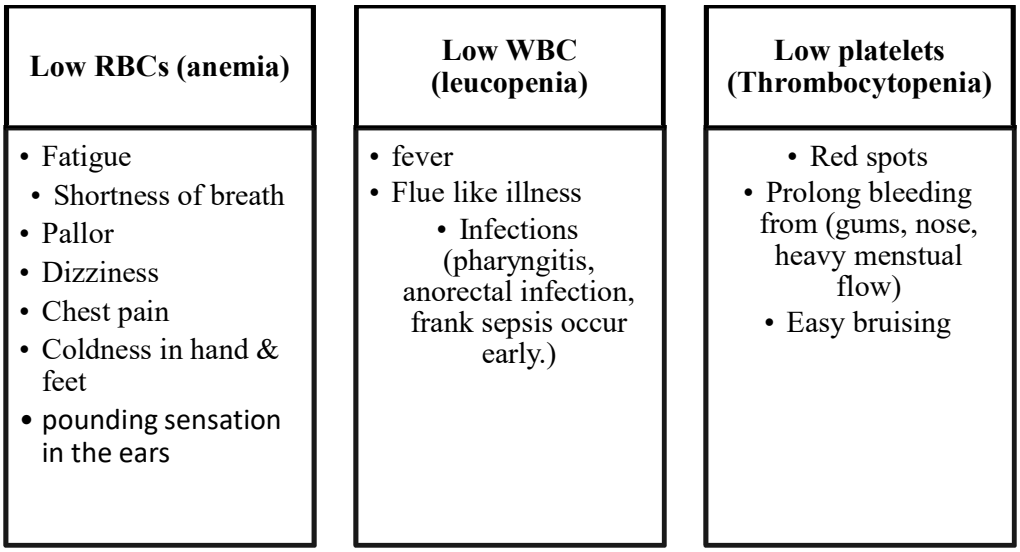
According to Ayurveda the disease related to blood mostly included in Panduvyadhi. Panduta, Raktalpata, Jwara, Shithilendriya, Daha, Shwas, Daurbalya, Brama, Aruchi these are the symptoms of Pandu vyadhi. [1]

"देहस्य रुधिरं मूलं |" (su. Sutra - 14/44)

Which means blood is the root source of our body and which sustains the life. In Pandu vyadhi we must focused on the Raktadhatu as "तेषां क्षयवृद्धी शोणितनिमित्ते"|| (shu.Sutra 14/21) Raktadhatu vardhaka dravya (drugs which has potential to raise blood cells), Raktadhatu shodhaka dravya (drugs which has potential to purify blood) and Rakta sangrahana dravya (blood coagulants). Ayurveda not only cures disease but also rejuvenate the body functions. In Ayurveda we also have immune modulator drugs, which could be beneficial in aplastic anaemia. There are number of Ayurvedic drugs, which are effective in breaking the Samprapti and extent the life span of patients.

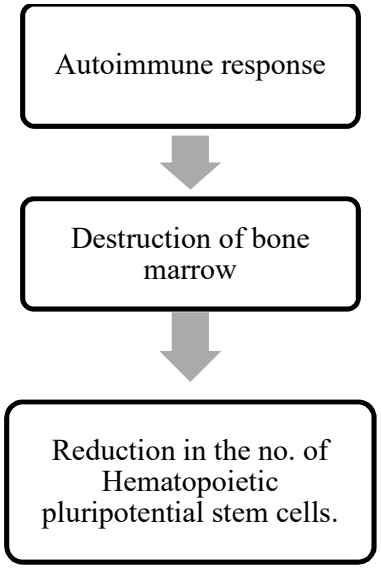
MATERIALS AND METHOD:

- **APLASTIC ANAEMIA-**
  Aplastic anemia is pancytopenia with hypocellularity (Aplasia) of Bone Marrow. [2] In which production of erythrocytes, WBCs and platelets has failed. It is sever and life threatening syndrome.
- **CAUSES-**
  - Radiation and chemotherapy treatments
  - Exposure to toxic chemicals
  - Use of certain drugs
  - Autoimmune disorders
  - A viral infection
  - Idiopathic.
- **SYMPTOMS:**



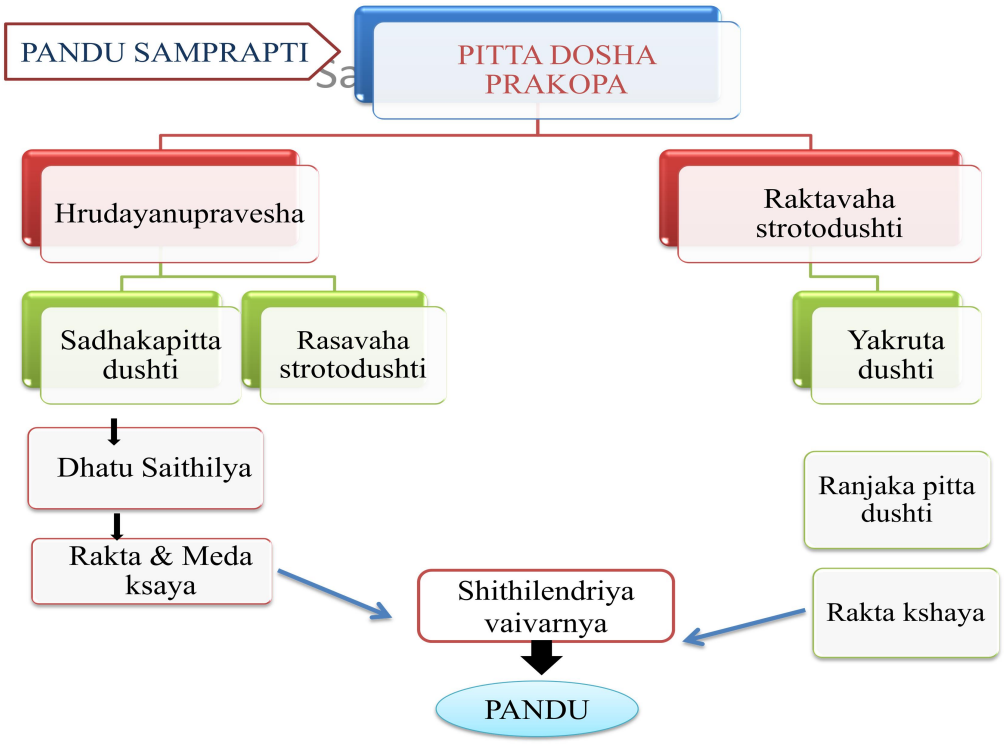
(Figure 1)

- **PATHOGENESIS-**



(Figure 2)

- **PANDU VYADHI SAMPRAPTI-** [3]



(Figure 3)

RAKTADHATUVARDHAKA DRAVYA-

The drugs which increase the Raktadhatu and amount of blood and which also increase cells, color and protein of Rakta is Raktadhatu Vardhaka Dravyas.

- **Jeevaniyagana-** Jeevaka, Rhishbhak, Meda, Mahameda, Kakoli, Ksheerkakoli, Mudakparni, Mashparni, Jeevanti, Madhuka.[4]

(Table no. 1) [5]

Sr. no	*Dravya name*	Latin name	*Rasa*	*Guna*	*Virya*	*Vipaka*	*Doshaghnata (karma)*
1.	*Jivaka*	*Microstylis wallichii* Lind Family: Orchideaceae	*Madhura*	*Guru, Snigdha*	*Sheeta*	*Madhura*	*V-P* ↓
2.	*Rishabhaka*	*Microstylis muscifera* Ridley Family: Orchideaceae	*Madhura*	*Guru, Snigdha*	*Sheeta*	*Madhura*	*V-P* ↓
3.	*Meda*	*Polygonatum verticillatum* L Family: Aliaceae	*Madhura*	*Guru, Snigdha*	*Sheeta*	*Madhura*	*P-R-V* ↓
4.	*Maham+eda*	*Polygonatum cirrhifolium* (Wall) Rolye Family: Aliaceae	*Madhura*	*Guru, Snigdha*	*Sheeta*	*Madhura*	*P-R-V* ↓

5.	***Kakoli***	***Roscoea purpurea* Smith Family: Zingiberaceae**	***Madhura***	***Guru, Snigdha***	***Sheeta***	***Madhura***	***V-P* ↓**
6.	***Kshirakakoli***	***Lilium polyphyllum* D.Don. Family: Aliaceae**	***Madhura***	***Guru, Snigdha***	***Sheeta***	***Madhura***	***V-P* ↓**
7.	***Mudgaparni***	***Phaseolus trilobus* Ait Family: Fabaceae**	***Madhura***	***Guru, Snigdha***	***Sheeta***	***Madhura***	***Tridosha*↓**
8.	***Mashaparni***	***Teramnus labialis Spreng.* Family:Fabaceae**	***Madhura***	***Guru, Snigdha***	***Sheeta***	***Madhura***	***V-P* ↓**
9.	***Jivanti***	***Leptadenia reticulate* W& A Family: Asclepiadacea*e***	***Madhura***	***Laghu, Snigdha***	***Sheeta***	***Madhura***	***V-P* ↓**
10.	***Madhuka***	***Glycyrrhiza glabra* Linn. Family: Fabaceae**	***Madhura***	***Guru, Snigdha***	***Sheeta***	***Madhura***	***V-P* ↓**

(V=Vata, P=Pitta, K=Kapha, R=Rakta, ↓=Decrease)

- **Bruhaniyagana-** Kshirini, Rajaksavaka, Ashwagandha, Kakoli, Ksheerakakoli, Vatyayani, Bhadraudani, Bharadvaji, Payasya, Rushyagandha. **(6)**

(Table no. 2) (7)

Sr. No	***Dravya name***	**Latin name**	***Rasa***	***Guna***	***Virya***	***Vipaka***	***Doshaghnata (karma)***
1.	***Kshirini***	***Hemidismus indicus* R.Br Family – Asclepidaceae**	***Madhura***	***Guru,Snigdha***	***Shita***	***Madhura***	***T* ↓**
2.	***Rajaksavaka***	***Euphorbia microphylla*, Heyne Family - Euphorbiaceae**	***Madhura, lavana, katu,tikta***	***Guru, ruksa, tiksna***	***Ushna***	***Katu***	***K*↓ *V*↑**
3.	***Ashwagandha***	***Withania somnifera* Dunal. Family - Solanaceae,**	***Tikta, kashaya***	***Laghu***	***Shita***	***Madhura***	***V-K*↓**
4.	***Kakoli***	***Roscoea purpurea* F. Family- zingiberaceae**	***Madhura***	***Guru, Snigdha***	***Shita***	***Madhura***	***V-P*↓**
5.	***Ksheerakakoli***	***Lilium polyphyllum* Var. Family – Liliaceae**	***Madhura***	***Guru, snigdha***	***Shita***	***Madhura***	***V-P*↓**
6.	***Vatyayani***	***Sida cordifolia* Linn Family-Malvaceae**	***Madhura***	***Guru, snigdhapicchila***	***Shita***	***Madhura***	***T*↓**
7.	***Bhadraudani***	***Sida veronicaefolia* Linn Family- Malvaceae**	***Madhura***	***Guru, snigdha, picchila***	***Shita***	***Madhura***	**V↓**
8.	***Bharadwaji***	***Thespesia lampas* Family – Malvaceae**	***Madhura***	***Guru,snigdha***	***Shita***	***Madhura***	***K-P*↓**
9.	***Payasya***	***Pueraria tuberosa* DC. Family Fabaceae**	***Madhura***	***Guru, Snigdha***	***Shita***	***Madhura***	***V-P*↓**
10.	***Ryusyagandha***	***Argyreia speciosa* Roxb Family- Convolvulaceae**	***Katu, tikta, kashaya, madhura***	***Sara, Laghu, Snigdha***	***Ushna***	***Katu,***	***K-V*↓**

(V=Vata, P=Pitta, K=Kapha, R=Rakta, ↓=Decrease, ↑= increase)

- **Kakolyadi gana:**
  Kākoli, Kshirakākoli, Jivaka, Rishabhaka, Mudgapari, Māshaparni, Medā, Mahāmedā, Jivanti and Madhuka all these drugs are already mentioned in the above **Table 2**.
  Chhinnaruhā, KarkataShringi, Tugākshiri, Padmaka, Prapaundarika, Riddhi, Vriddhi, Mridvik [8]

(Table no. 3) [9]

Sr.no	*Dravya name*	Latin name	*Rasa*	*Guna*	*Virya*	*Vipaka*	*Doshaghnata (karma)*
1.	*Chhinnaruha (Guduchi)*	*Tinospora cordifolia* Willd. Family- Menispermaceae	*Katu, Tikta, Kashaya*	*Laghu*	*Ushna*	*madhura*	*T*↓
2	*Karkatshringi*	*Pistacia integerrima* Stew. Family- Anacardiaceae	*Kashaya, Tikta*	*Laghu*	*Ushna*	*Katu*	*K-V*↓
3	*Tugkshiri*	*Bambusa arundinacea* willd family- Gramineae	*Katu, Kashaya*	*Ruksha, Guru, Saraka*	*Ushna*	*Katu*	*K*↓ *,V-P*↑
4	*Padmaka*	*Prunus puddum* Roxb. Family- Rosaceae	*Kashaya, Tikta*	*Laghu*	*Shita*	*Katu*	*K-P-R, V*↑
5	*Prapaundarika*	*Nelumbo nucifera* Willd, family- nymphyaceae	*Madhura*	*Guru, shital*	*Shita*	*Madhura*	*K-P*↓
6	*Riddhi*	*Habenaria intermedia* D. Don family-Orchidaceae	*Madhura*	*Guru, snigdha*	*Shita*	*Madhura*	*K-V*↓
7	*Vriddhi*	*Habenaria edgeworthii* Hook. Family-Orchidaceae	*Tikta*	*Laghu*	*Shita*	*Katu*	*K-P*↓
8	*Mridvika*	*Vitis vinifera* Linn. Family- Vitaceae	*Madhura, kashaya*	*Guru, Snigdha, Saraka*	*Shita*	*Madhura*	*V-P*↓

(V=Vata, P=Pitta, K=Kapha, R=Rakta, ↓=Decrease, ↑= increase)

RAKTASHODHAKA DRAVYAS-

Dravyas which eliminates Dushti of Rakta. Dushti may be due to Rakta ghataka, jeevanu and visha. [10]

- ***Sarivadigana-*** *Sariva, Madhuka, Kuchandana, Padmaka, Kashmariphala, Madhukapuspa, Ushira*. [11]

(Table no. 4)

Sr. no	*Dravya name*	Latin name	*Rasa*	*Guna*	*Virya*	*Vipaka*	*Doshaghnata (karma)*
1	*Sariva*	*Hemidesmus indicus* R.Br. family- asclepidaceae	*Madhura, Tikta*	*Guru, Snigdha*	*Shita*	*Madhura*	*T*↓
2	*Madhuka*	*Glycyrrhiza glabra* Linn. Family- Fabaceae	*Madhura*	*Guru, Snigdha*	*Shita*	*Mahura*	*V-P-R*↓
3	*Kuchandana*	*Pterocarpus santalinus* Linn. Family- leguminosae	*Madhura, Tikta*	*Guru*	*Shita*	*Katu*	*K-P-R*↓
4	*Padmaka*	*Prunus puddum* Roxb. Family-Rosaceae	*Kashaya, Tikta*	*Laghu*	*Shita*	*Katu*	*K-P-R*↓ *, V*↑
5	*Kashmariphala*	*Gmelina arborea* Linn family.-*verbenaceaecv*	*Madhura,Kashaya,Tikta*	*Guru*	*Ushna*	*Madhura*	*V*↓

6	*Madhukapushpa*	*Madhuka indica* **J.F.Gmel family- sapotaceae**	*Madhura*	*Guru*	*Shita*	*Madhura*	*V-P↓*
7	*Ushira*	*Vetivera zizanioides* **Linn. Family-gramineae**	*Tikta, madhura*	*Laghu, Ruksha*	*Shita*	*katu*	*V-P↓*

(V=Vata, P=Pitta, K=Kapha, R=Rakta, ↓=Decrease, ↑= increase)

- **Aragwadhadigana**- Aragwadha, madana, Kantaki, Kutaja, Patha, Patala, Murva, Indrayava, Saptaparna, Nimba, Guduchi, Chitraka, Karanja, Patola, Kiratatikta. [12]

(Table no.-5)

Sr. No	*Dravya name*	Latin name	*Rasa*	*Guna*	*Virya*	*Vipaka*	*Doshaghnata (karma)*
1	*Aragwadha*	*Cassia fistula* **Linn. Family- Caesalpiniaceae**	*Madhura*	*Guru, Snigdha*	*shita*	*Madhura*	*K-P↓*
2	*madana*	*Randia spinosa* **Poir. Family- Rubiaceae**	*Madhura,Tikta*	*Madhura ,Ruksha*	*Ushna*	*Katu*	*K-V↓*
3	*Kantaki*	*Acacia catechu* **Willd. Family- leguminosae**	*Tikta, Kashaya*	*Laghu, Ruksha*	*Shita*	*Katu*	*K-P↓*
4	*Kutaja*	*Holarrhena antidysenterica* **Wall family- Apocynaceae**	*Tikta, Kashaya*	*Laghu, Ruksha*	*Shita*	*Katu*	*K-P↓*
5	*Patha*	*Cissampelos pareira* **L. Family- menispermaceae**	*Katu*	*Laghu*	*Ushna*	*Katu*	*K-V↓*
6	*Patala*	*Stereospermum suaveolens* **DC family- bignonaceae**	*Tikta, Kashaya*	*Laghu, Ruksha*	*Anushna*	*Katu*	*T↓*
7	*Murva*	*Marsedenia tenacissima* **W & A Family- Asclepiadaceae**	*Tikta, Kashaya*	*Guru, Ruksha*	*Ushna*	*Katu*	*T↓*
8	*Indrayava*	*Holarrhena antidysenterica* **Wall. family- Apocynaceae**	*Tikta, Kashaya*	*Laghu, Ruksha*	*Shita*	*Katu*	*K-P↓*
9	*Saptaparna*	*Alstonia scholaris* **R.Br Family- Apocynaceae**	*Tikta, Kashaya*	*Laghu, Snigdha*	*Ushna*	*Katu*	*T↓*
10	*Nimba*	*Azadirachta* **indica A. Juss family- Meliaceae**	*Tikta, Kashaya*	*Laghu, Ruksha*	*Shita*	*Katu*	*T↓*
11	*Guduchi*	*Tinospora cordifolia* **Wall Family- Menispermaceae**	*Tikta, Kashaya*	*Laghu, Snigdha*	*Ushna*	*Madhura*	*T↓*
12	*Chitraka*	*Plumbago zeylanica* **Linn. Family- Plumbaginaceae**	*Katu*	*Laghu, Ruksha*	*Ushna*	*Katu*	*V-K↓*
13	*Karanja*	*Pongamia pinnata* **Linn. Family- papilionaceae**	*Tikta, Katu, Kashaya*	*Laghu, Tikshna*	*Ushna*	*Katu*	*K-V↓*
14	*Patola*	*Tricosanthes dioica* **Linn. Family-Cucurbitaceae**	*Tikta, Katu*	*Laghu, Ruksha*	*Ushna*	*Katu*	*K-P↓*
15	*Kiratatikta*	*Swertia chirata* **Ham. Family- Gentianaceae**	*Tikta,*	*Laghu, Ruksha*	*Shita*	*Katu*	*K-P↓*

(V=Vata, P=Pitta, K=Kapha, R=Rakta, ↓=Decrease, ↑= increase)

- **Trpvadi gana: Trapu (Tin)**

Sisa (Lead), Tamra (Copper), Rajata (Siver), Suvarna (Gold), Krsnaloha (Iron), Lohamala (Ferric oxide). [13]

(Table no.6)

Sr. No	*Dravya name*	Latin name	*Rasa*	*Guna*	*Virya*	*Vipaka*	*Doshaghnata (karma)*
1	*Trapu*	Stannum (tin)	*Tikta,*	*Laghu, Ushna*	*Ushna*	*Katu*	*K↓*
2	*Sisa*	Plumbum (Lead)	*Madhura, Tikta*	*Laghu, Saraka*	*Ushna*	*Madhura*	*K-V↓*
3	*Tamra*	Cuprum (Copper)	*Kashaya, Madhura, Tikta, Amla*	*Laghu,*	*Shita*	*Katu*	*V-P↓*
4	*Rajata*	Argentium (Silver)	*Kashaya, Amla, Madhura*	*Snigdha*	*Shita*	*Madhura*	*V-P↓*
5	*Suvarna*	Aurum (Gold)	*Madhura, Tikta, Kashaya*	*Guru, Picchila,*	*Shita*	*Madhura*	*T↓*
6	*Krsnaloha*	Ferrum (Iron)	*Tikta, Madhura, Kashaya*	*Guru, Ruksha*	*Shita*	*Madhura*	*K-P↓*
7	*Lohamala*	Ferrum (Iron)	*Tikta, Madhura, Kashaya*	*Guru, Ruksha*	*Shita*	*Madhura*	*K-P↓*

(V=Vata, P=Pitta, K=Kapha, R=Rakta, ↓=Decrease, ↑= increase)

RAKTASANGRAHI DRAVYAS:

- **Salasaradi gana-** Salasara, Ajakarna, Khadira, Kramuka, Mesasringa, Tinisha, Chandana, Kuchandana, Simsapa, Asana, Dhava, Arjuna, Tala, Naktamala, Putika, Aswakarna, Agaru. [14]

(Table no. 7)

Sr. No	*Dravya name*	*Latin name*	*Rasa*	*Guna*	*Virya*	*Vipaka*	*Doshaghnata (karma)*
1	*Salasara*	*Shorea robusta* Gaertn.f. Family- Dipterocarpaceae	*Kashaya, Madhura*	*Ruksha, Ushna*	*Shita*	*Shita*	*P-K↓*
3	*Khadira*	*Acacia catechu* Willd. Family- leguminosae	*Tikta, Kashaya*	*Laghu, Ruksha*	*Shita*	*Katu*	*K-P↓*
4	*Kramuka*	*Areca catechu* Linn. Family- Palmae	*Kashaya*	*Guru, Ruksha*	*Shita*	*Katu*	*K-P↓*
5	*Mesasringa*	*Gymnema sylvestre* R. Br Family- Asclepiadaceae	*Tikta, Kashaya*	*Laghu, Ruksha*	*Ushna*	*Katu*	*K-V↓*
6	*Tinisha*	*Ogeinia dalbergioides* Benth. Family- leguminoceae	*Kashaya,*	*Laghu, Ruksha*	*Shita*	*Katu*	*K-P↓*
7	*Chandana*	*Santalum album* Linn. Family- Santalaceae	*Tikta, Madhura*	*Laghu, Ruksha*	*Shita*	*Katu*	*K-P↓*
8	*Kuchandana*	*Adenanthera pavonina* Linn. Family- mimosaceae	*Kashaya, Tikta*	*Laghu*	*Shita*	*Katu*	*V-P↓*
9	*Simsapa*	*Dalbergia sissoo* Roxb. Family-Leguminosae	*Kashaya, Katu, Tikta*	*Laghu, Ruksha*	*Ushna*	*Katu*	*K-V↓*
10	*Asana*	*Pterocarpus marsupium* Roxb. Family- Leguminosae	*Kashaya, Tikta*	*Laghu, Ruksha*	*Shita*	*Katu*	*K-P↓*
11	*Dhava*	*Anogeissus latifolia*	*Kashaya,*	*Laghu,*	*Shita*	*Katu*	*K-P↓*

		Wall. Family-Combretaceae		***Ruksha***			
12	***Arjuna***	***Terminalia arjuna* Roxb.Family-Combrataceae**	***Kashaya***	***Laghu, Ruksha***	***Shita***	***Katu***	***K-P↓***
13	***Naktamala***	***Pongamia pinnata* Family- fabaceae**	***Tikta, Katu, Kashaya***	***Laghu, Tikshna***	***Ushna***	***Katu***	***K-V↓***
14	***Putika***	***Holoptelea integrifolia* Planch. Family-Ulmaceae**	***Tikta, Kashaya***	***Laghu, Ruksha***	***Ushna***	***Katu***	***K-P↓***
15	***Aswakarna***	***Dipterocarpus turbinatus* Gaertn. Family-Dipterocarpaceae**	***Katu, Tikta***	***Laghu, Snigdha***	***Ushna***	***Katu***	***K-V↓***
16	***Agaru***	***Aquilaria agallocha* Roxb. Family-Thymelaeaceae**	***Katu, Tikta***	***Guna, Laghu***	***Ushna***	***Katu***	***K-V↓***

(V=Vata, P=Pitta, K=Kapha, R=Rakta, ↓=Decrease, ↑= increase)

- **Lodhradi gana**- Lodhra, Palasha, Katphala, Elavaluka, Sallaki, Kutannata, Ashoka, Phanji, Jingini, Kadamba, Sala, Kadali. **(15)**

(Table no. 8)

Sr. No	***Dravya name***	***Latin name***	***Rasa***	***Guna***	***Virya***	***Vipaka***	***Doshaghnata (karma)***
1.	***Lodhra***	***Symplocos racemosa* Roxb. Family-Symplocaceae**	***Kashaya, Tikta***	***Laghu, Ruksha***	***Shita***	***Katu***	***K-P↓***
2.	***Palasha***	***Butea frondosa Koen. Family- Fabaceae***	***Madhura,Tikta, Kashaya***	***Laghu, Ruksha***	***Ushna***	***Katu***	***K-P↓***
3.	***Kutannata***	***Oroxylum indicum Vent. Family- Bignoniaceae***	***Madhura, Tikta, Kashaya***	***Laghu, Ruksha***	***Ushna***	***Katu***	***K-V↓***
4.	***Ashoka***	***Saraca indica* Linn. Family-Caesalpiniaceae**	***Kashaya, Tikta***	***Laghu, Ruksha***	***Shita***	***Katu***	***K-P↓***
5.	***Phanji***	***Clerodendrum serratum* Spreng. Family-Verbenaceae**	***Tikta, Katu, Kashaya***	***Laghu, Ruksha***	***Ushna***	***Katu***	***K-V↓***
6.	***Katphala***	***Myrica esculenta* Buch. Family- Myricaceae**	***Kashaya, katu, Tikta***	***Laghu, Tikshna***	***Ushna***	***Katu***	***K-V↓***
7.	***Elavaluka***	***Prunus cerasus* Linn. Family- Rosaceae**	***Kashaya***	***Laghu***	***Shita***	***Katu***	***K-V↓***
8.	***Sallaki***	***Boswellia serrata* Roxb. Family- Burseraceae**	***kashaya***	***Laghu, Ruksha***	***Shita***	***Katu***	***K-P↓***
9.	***Jingini***	***Odina woodier* Roxb. Family- Anacardiaceae**	***Madhura, Katu, Kashaya,***	***Guru***	***Ushna***	***Katu***	***V↓***
10.	***Kadamba***	***Nelumbium speciosum* Willd. Family-Nymphaeceae**	***Tikta, Kashaya***	***Ruksha***	***Shita***	***Katu***	***T↓***
11.	***Sala***	***Shorea robusta* Gaertn. Family-Dipterocarpaceae**	***Kashaya, Madhura***	***Ruksha, Ushna***	***Shita***	***Katu***	***K-V↓***
12.	***Kadali***	***Musa sapientum* Linn. Family-Musaceae**	***Madhura,Kashaya***	***Guru, Snigdha***	***Shita***	***Madhura***	***V-P↓***

(V=Vata, P=Pitta, K=Kapha, R=Rakta, ↓=Decrease, ↑= increase)

- **Priyangvadi gana**- Priyangu, Samanga, Dhataki, Punnaga, Nagpuspa, Chandan, Kuchandana, Mocharasa, Rasanjana, Strotonjana, Padmakesara, Yojanavalli, Dirghamula. [16]

(Table no. 9)

Sr. No	*Dravya name*	*Latin name*	*Rasa*	*Guna*	*Virya*	*Vipaka*	*Doshaghnata (karma)*
1	*Priyangu*	*Callicarpa Macrophylla* Vahl Family- Verbenaceae	*Tikta, Kashaya, Madhura*	*Lughu, Ruksha*	*Shita*	*Katu*	*V-P↓*
2	*Samanga*	*Rubia cordifolia* Linn. Family- Rubiaceae	*Tikta, Kashaya, Madhura*	*Guru, Ruksha*	*Ushna*	*Katu*	*K-P↓*
3	*Dhataki*	*Woodfordia fruticosa* Kurz. Family- Lytheraceae	*Kashaya*	*Laghu, Ruksha*	*Shita*	*Katu*	*K-P↓*
4	*Punnaga*	*Calophyllum inophyllum* Linn. Family- Guttiferae	*Madhura, Kashaya*	*Laghu, Ruksha*	*Shita*	*Madhura*	*K-P↓*
5	*Nagpuspa*	*Mesua ferrea* Linn. Family- Guttiferae.	*Kashaya, Tikta*	*Ruksha, Tikshna*	*Ushna*	*Katu*	*K-P↓*
6	*Mocharasa*	*Bombax malabaricum DC. Family- Bombacaceae*	*Kashaya*	*Laghu, Snigdha*	*Shita*	*Madhura*	*K-P↓*
7	*Rasanjana*	*Berberis aristata* DC. Family- Berberidaceae	*Katu,Tikta*	*Laghu,*	*Ushna*	*Katu*	*K-P↓*

(V=Vata, P=Pitta, K=Kapha, R=Rakta, ↓=Decrease, ↑= increase)

- **Panchakshiri vruksha**- Vata, Udumbara, Ashwatha, Parisha, Plaksha. [17]

(Table no. 10)

Sr. No	*Dravya name*	*Latin name*	*Rasa*	*Guna*	*Virya*	*Vipaka*	*Doshaghnata (karma)*
1	*Vata*	*Ficus benghalensis* Linn. Family- Moraceae	*Kashaya*	*Guru, Ruksha*	*Shita*	*Katu*	*K-P↓*
2	*Udumbara*	*Ficus racemosa* Linn. Family- moraceae	*Kashaya*	*Guru, Ruksha*	*Shita*	*Katu*	*K-P↓*
3	*Ashwatha*	*Ficus religiosa* Linn. Family- Moraceae	*kashaya*	*Guru, ruksha*	*Shita*	*Katu*	*K-P↓*
4	*Parisha*	*Thespesia populnea* Soland. Family- Malvaceae	*Kashaya*	*Laghu, Snigdha*	*Shita*	*Katu*	*K-P↓*
5	*Plaksha*	*Ficus lacor* Buch. Family- Moraceae	*kashaya*	*Guru, Ruksha*	*Shita*	*Katu*	*K-P↓*

(V=Vata, P=Pitta, K=Kapha, R=Rakta, ↓=Decrease, ↑= increase)

DISCUSSION:

- Dravyas with Agneya guna acts as Rakta vardhaka.

In above mentioned drugs Kakolyadi gana increases Rakta rashi and remaining drugs are Raktakana vardhaka or ranjaka tatva vardhaka.

- Jeevaniya and Brumhaniya gana dravyas generally has Madhura rasa, madhura vipaka and sheeta

virya due to this its acts as a Rasayana karma, Rejuvenating the body cells and improves the Uttarottara Dhatu.

Hence, in the aplastic anemia these drugs can be helpful to regenerate the blood cells as its acts on all Dhatu like Rasa, Rakta and Asthi.

- Raktashodhak are also acts as Raktavardhaka by pacifying dushita dosha and stabilizing normal state of Rakta.
- The Dravyas which removes the disorder of blood and makes it pure is called Raktaprasadana or blood purification like Sarivadigana and Manjishthadi gana.

These drugs are mostly Tikta rasa, due to which its removes the Vidah of Pitta and also pacifies the Vidah of Raktadhatu.

- The drugs in Trapvadi gana are madhurarasa/ Tikta-katu-madhura rasa, Ushna virya. That's why it acts as Shodhan.

Removal of Avarodha of Raktavahastrotas by Lohabhasma resulted in improvement of RBC's by facilitation of proper nourishment to Raktadhatu.

It's very effective in revising in anemia.

- Rakta sangrahaka are dravyas that offer gadhatwa to Rakta or dravyas that increase the components needed to thicken Rakta.

Qualities of Rakta sangrahaka dravyas:

Kashaya rasapradhana

Gunas - snigdhata, pichilata, sthiratagunas of kapha.

In normal conditions, Snigdhata, pichilata, sthirata gunas are imbibed into Rakta by Kapha dosha which are needed for thickening of Rakta.

Pakti, Raga, Ushma of Rakta are due to Agneya guna of Pitta which corrects the Svarupa of Rakta and helps it to maintain Svabhavika Sthithi.

CONCLUSION:

The elements of Rakta or blood as per Ayurveda

"रक्तं वर्णप्रसादं मांसपुष्टिं जीवयति च|"

as it is one of the seven dhatu (tissue), its prime capacity is to sustenance the body.

The drugs having Madhura-Tikta Rasa pradhan, Madhura Vipaka and Sheeta Virya, acts on vitiated Pitta dosha as Pitta and Rakta has Ashrayaashrayi Sambandha. The drugs mentioned in Charaka and Shushruta Samhita which acts on Raktadhatu by improving the amount of blood purifies the blood and acts by its haemostatic properties. So the *Raktadhatu*

vardhaka dravya, Raktadhatu shodhaka dravya and *Rakta sangrahana dravya* are mentioned here.

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