

Ayurvedic Management of Aplastic Anemia (*Tridoshaj Pandu*)

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Abstract

Aplastic anaemia (AA) was first described by Ehrlich in 1888. It is characterized by peripheral blood pancytopenia. In the management of severe aplastic anaemia, general measures and supportive care as well as therapy with corticosteroids, anabolic steroids, immune suppressive and lithium have so far failed to prolong the survival in severe aplastic anaemia. A 22-year-old female patient came to government ayurved hospital for further treatment of hyperplastic marrow. She was given first classical Virechana after that Shamana treatment done with Dadimadhya Ghrita, Balchaturbhadra Churna, Trikatu Churna, Samsamani vati, Bhumi Amalki Swarasa, Punarnava Mandura, Vasa Ghanavati and Majja Ghrita. After Panchkarma and Shamana treatment a significant improvement in all symptoms had felt by the lady. Though the hematological parameters were not improved but this case study have enlightened the fact that with ayurvedic principles, aplastic anemia can be managed.

Keywords: Aplastic Anaemia, Pandu, Dadimadhya Ghrita, Bhumi Amalki Swarasa, Punarnava Mandura, Majja Ghrita, Samsamani Vati.

INTRODUCTION

The Incidence of aplastic anaemia (AA) is on the rise in India. Aplastic anaemia may be congenital or acquired. It is severe, life-threatening syndrome. In this condition body stops producing enough new blood cells. It develops as a result of bone marrow damage [1, 2]. That's why the disease also known with bone marrow aplasia. It is characterized by peripheral blood pancytopenia. Pancytopenia is the combination of anemia, leukopenia and thrombocytopenia. Failure of the bone marrow precursors to produce mature cells characterized by hypocellular marrow and pancytopenia. It is clear from various studies that anabolic steroid do not benefit in severe aplastic anaemia.

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Substantial reduction in the number of haemopoietic pluripotential stem cells and a fault in the remaining stem cells or an immune reaction against them, which makes them unable to divide and differentiate sufficiently to populate the bone marrow. It is believed that genetic factors play a role. There is a higher incidence with HLA (11) histocompatibility antigen Immune mechanism is involved [3]. Auto reactive T cells attempt to destroy the abnormal cells (self-cure) and the clinical course and complications depend on the balance. If the immune mechanism is strong, there will be severe pancytopenia. If not, there will be myelodysplasia (a syndrome of group of cancers in which immature blood cells in the bone marrow do not mature and therefore do not become healthy blood cells).

In the management of severe aplastic anaemia, general measures and supportive care as well as therapy with corticosteroids, anabolic steroids, immuno suppressive and lithium have so far failed to prolong the survival in severe aplastic anaemia. Its treatment may include medicines to suppress immune system like cyclosporine, blood transfusions or a blood and bone marrow transplant.

In *Ayurveda*, Aplastic anaemia can be correlated with *Tridoshaj Pandu*. For the management of Aplastic anaemia with Ayurvedic treatment will be beneficial to overcome the limitations and adverse effect of modern treatment. Hence, correlations of disease and management of disease with Ayurvedic principle has been decided.

CASE PRESENTATION

A 22-year-old female, diagnosed case of Aplastic anaemia, Came to Govt. Akhandanand Ayurved College, Panchakarma opd (8.5.2019) at Ahmedabad with the complaints weakness, fever, loss of appetite, hair falling, giddiness, dyspnea.

The patient was managed conservatively with tablet cyclosporine and blood transfusion. Her blood investigation report dated (24.3.2019) showed pancytopenia with Hb 6.8 g/dl, total leukocyte counts 4900/cmm, platelet 31,000/cmm. The bone marrow aspiration was suggestive of hypoplastic marrow (severe Aplastic Anemia). The parameters of liver function test and renal function test were within a normal limit. No organomegaly detected on examination. On admission blood investigation report dated (10.5.2019) showed Hb 6.5 g/dl, total leukocyte counts 4500/cmm and platelet count $0.09 \times 10^{19}/L$.

BP-100/70 mm of Hg, wt.46 kg.

Treatment Protocol

- The treatment was planned with the following medicines (Table 1) for approx. 5 months.
- At first classical *Virechana Karma* had been done.
- *Deepana* and *Pachana* with *Trikatu Churna*: 3 gm 3 times with *Ushnodaka* for 3 days.
- *Virechana Aushadha* And *Matra*: *Trifala Ghrita*–350 ml + *Danti Churna*–10 gm.
- After *Sansarjana Krama Shamana Sneha* started with *Dadimadhya Ghrita*–20 ml before meal for 24 days.
- After that *Matra Basti* was given by *Laghupanchamulsidhdha Majja Ghrita*–20 ml after meal for 17 days.
- *Bhumi Amalaki Swarasa*–20 ml. once a day empty stomach in morning for 3 months was given parallelly with above treatment.
- *Punarnava Mandura* (500 mg): 2 bd after meal with water.
- *Vasa Ghanvati* (150 mg): 4 bd after meal with water.
- *Trikatu Churna* + *Bal Chaturbhadra*: 3 gm bd before meal with *Ushnodaka*.
- 3 of above medicine was given parallelly for 4 months.

OBSERVATION AND RESULTS

Table 1 Criteria for assessment: We followed the guidelines of clinical research methodology in Ayurveda (by M.S. Baghel sir) [4].

Table 1. Guidelines of clinical research methodology in Ayurveda.

<i>Bhrama</i> : dizziness, giddiness		
1.	Absent	0
2.	Occasional giddiness	1
3.	Frequently attacks of giddiness	2
4.	Regular attacks of giddiness	3

Kesha Patana(Hair fall)		
1	No hair fall	0
2	Hairs fall once in the morning while washing/combing.	1
3	Hairs fall on every time of combing.	2
4	Hair fall even without combing and raised hairline in frontal region (mild baldness).	3
5	Visible or significant baldness in frontal or vertex region.	4
Fever		
1	No fever	0
2	Occasional fever subsides by itself	1
3	Occasional fever subsides by drug	2
4	Remittent fever	3
5	Continuous fever	4
Weakness		
1	No <i>daurbalya</i>	0
2	Not able to perform strenuous activity.	1
3	Not able to perform moderate activity.	2
4	Cannot perform moderate activity but can perform mild activity without any difficulty.	3
5	Even mild activities cannot be performed	4
Agnimandhya (diminution of the Agni)		
1.	Feels good hunger and proper digestion regularly	0
2.	Feels good hunger but irregular digestion	1
3.	Feels less hunger and irregular digestion	2
4.	Feels very less hunger and the very less digestion	3
Swasa kashata (Dyspnoea)		
1.	Dyspnoea after heavy work but relieved soon and up to tolerance	0
2.	Dyspnoea after moderate work but relieved later and up to tolerance	1
3.	Dyspnoea after little work but relieved later and up to tolerance	2
4.	Dyspnoea after little work but relieved later and beyond tolerance	3
5.	Even in resting condition.	4
Panduta: colour of body parts.		
1.	Red	0
2.	Pink	1
3.	Whitish/pale	2
4.	Yellowish	3

As shown in the Table 2, after treatment patient had relief in *Bhrama*, *Kesha patana*, fever, weakness, *Agnimandhya* and *Swasa Kashtata*.

Table 2. On the basis of above assessment score patient's severity has been graded.

No	Signs and symptoms	Pre therapy	Post therapy
1	<i>Bhrama</i>	2	0
2	<i>Kesh patina</i>	3	1
3	Fever	2	0
4	Weakness	2	0
5	<i>Agnimadhya</i>	2	0
6	<i>Swasa kashtata</i>	1	0
7	<i>Panduta</i>	2	2

As shown in the Table 3, after treatment the investigation of haemogram profile had not shown any major difference in Hb, WBC and Platelet count.

Table 3. Observation of the haemogram report at the interval of approximately 1 months.

Date	HB	WBC	Platelet
10.5.2019	6.5	4500	48000
4.6.2019	6.5	4000	37000
10.7.2019	5.8	4050	28000
2.8.2019	5.1	2950	31000
20.9.2019	6.3	3850	33000
23.10.2019	6.1	4600	20000

DISCUSSION

Aplastic anaemia can be correlated with *Tridoshaj Pandu*. *Pandu* is a multifactorial disease involving multiple facets, different *Srotasa*, *Dhatu* and *Oja*, hence require a multi-dimensional treatment modality in the form of *Shodhana* and *Shamana*.

Probable mode of action of *Virechana Karma* by *Trifala Ghrita* and *Danti*

As per *Chikitsa Sutra* of *Pandu Roga* we gave *Virechana* for detoxification. *Virechana* purifies the whole body specially *Pitta Dosha* [5]. As per *Samprapti* of *Pandu Roga* elevated *Pitta Dosha* goes to the heart and then spread in all over body by vitiated *Vata* [6]. During *Virechana Karma* administrated drug goes to heart with its *Ushna*, *Tikshna*, *Sukshma*, *Vyavayi* and *Vikasi Guna* and reach every *Sthula* and *Sukhsma Srotasa* [7] so the drug eliminates every *Dosha* by purgation. Thus, *Virechana Karma* can break the *Samprapti* of this disease.

Acharya Sushruta has mentioned that *Virechana Dravya Sidhdha Ghrita* or *Virechana Yoga* with *Ghrita* should be given in *Panduroga Chikitsa* [8]. So, *Trifala Ghrita*-350 ml + *Danti Churna*-10 gm given to the patient as a *Virechana Aushadha*.

Probable mode of action of *Dadimadhya Ghrita*

Dadimadhya Ghrita indicated in *Pandu*, *Pleeha*, *Arsha*, *Hridhya*, *Vatkaphaja Vyadhi* etc [9]. It was selected for *Abhayantara Snehpana* prior to *Virechana Karma* for 5 days and further also used for *Agni Deepana*, increase the metabolism and reduce the formation of *Aam*. It also acts as *Raktvardhaka*, *Balavardhaka*, *Hridhya*.

Probable mode of action of *Laghu Panchamulsidhdha Majja ghrita*

In aplastic anaemia bone marrow cannot produced the sufficient quantity of RBC, WBC and platelets. So, if we can stimulate the bone marrow to produce the cells then we can also manage the aplastic anaemia and treat patients as well. As per *Samanya* principle to stimulate the bone marrow *Majja Dravya* is beneficial [10]. *Laghu Panchamula* is having *Vataghna*, *Pittashamana*, *Brihana*, *Balvardhana* properties. So, *Laghu Panchamulsidhdha Majja Ghrita* was selected.

Probable mode of action of *Trikatu* [11] and *Bal Chaturbhadra Churna* [12]

According to *Acharya Bhavmishra*, *Trikatu* has *Katu Rasa*, *Ushna Virya*, *Deepana*, *Swasahara* properties. It as a *Pachaka* and *Sroto Shodhaka* also.

Balchaturbhadra Churna is also act as a *Deepana* and *Pachana*.

Probable mode of action of *Punarnava Mandura* [13]

Acharya Charaka has mentioned *Punarnava Mandura* in *Pandu*, *Pleeha*, *Vishamajwara* etc. It is a poly herbo mineral formulation which may work as a *Panduhara* and *Rasayana* in the patients of aplastic anaemia. It improves haemoglobin level and also stimulate the formation of the blood. It has haematogenic, haematinic, antioxidant, carminative properties.

Probable mode of action of *Vasa Ghanavati*

Vasa is *Hridhya* and having *Tikta Rasa*, *Sheeta Virya*, *Pittarakta* and *Swasahara* properties [14]. So, *Vasa Ghanavati* was selected.

Probable mode of action of *Bhumi Amalaki Swarasa*

Bhumi Amalaki is a plant having *Sheeta Virya*, *Pitta-Kaphahar* properties [15]. It helps in managing liver disorder and reverses any damage caused to the liver. It indicated in *Pandu*, *Pittasra*, *Aruchi*. That's why it was selected.

CONCLUSION

Before medicine was started patient had vertigo, dyspnea, poor appetite, hair fall with Hb-6.5 gm%, WBC-4500/cmm, Platelet-20000/mcL. Symptoms were improved gradually after treatment. After 5 months of treatment though the haematological parameters were not improved but significant improvements in all the symptoms had been felt by the patient.

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