WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 13, Issue 1, 1131-1140. Case Study ISSN 2277–7105

AYURVEDIC MANAGEMENT OF PURE RED CELL APLASIA: A CASE STUDY

Dr. Jigna Yadav[1]*, Dr. Komal Sathavara[2], Dr. Anamika S. Soni[3]

[1,2]3rd Year PG Scholar of Kayachikitsa.

[3]Assistant Professor of Kayachikitsa.

Article Received on
10 November 2023,

Revised on 01 Dec. 2023,
Accepted on 22 Dec. 2023

DOI: 10.20959/wjpr20241-30693

***Corresponding Author**
Dr. Jigna Yadav
3rd Year PG Scholar of Kayachikitsa.

ABSTRACT

A case of Pure red cell aplasia was treated successfully with classical line of treatment of *Pandu chikitsa*. ln *Ayurveda* we can correlate it with *Pandu*. Treatment given includes *Deepana*, *Pachana*, *Anulomana*, *Strotoshodhana*, *Vaman*, *Virechan*, *Brihana*, *Matrabasti* with *Mahasneha*, etc targeting to the basic site of pathology. Classical description of *Pandu* incorporates various types of pathologies described in modern science like Megaloblastic anemia, Aplastic anemia, Sickle cell anemia, various leukemia and Bone marrow disorders. Red cell aplasia is also under the big umbrella of *Pandu roga*.

INTRODUCTION

Pure red cell aplasia is rare bone marrow failure with a normocytic anemia and reticulocytopenia with a normal count of white blood cells and platelets. Here we can correlate PRCA with *Kaphaj pandu*. *Kaphaj pandu* is a type of *Pandu* where *Lakshana* of *Kapha dosha* is predominant. *Pandu* is a *Pitta pradhana vyadhi*, in all types of *Pandu pitta dosha* is involved and it is the main contributing factor in *Samprapti* of *Pandu*, but according to symptoms of disease it is further divided into *Vataja*, *Pittaja*, *Kaphaj*, *Sannipataja* and *Mridbhakshanajanya pandu*.[1] In case of *Kaphaj pandu*, with *Pitta*, *Kapha dosha* also gets involved in producing this particular condition. Here along with ' *Pandubhava* ' the symptoms like *Tandra*, *Alasya*, *Gaurava*, *Praseka*, *Sweta varnata* of *Twak*, *Mukha* and *Mutra* are seen which indicates *Kaphajdusti*.

PRCA is a rare disorder. A nationwide epidemiologic study for acquired PRCA identified 1055 patients, an incidence rate of 1.06 patients per million per year. The median age was 73 years old with female predominance (1.5: 1), and 69% of the PRCA was idiopathic.

In this case, we have tried to assess the *Samprapti ghatak* (Pathological agent), related *Samprapti* (Pathophysiology) and break the cycle of pathogenesis of the disease, and it resulted to the root eradication of the disease.

Patient Information

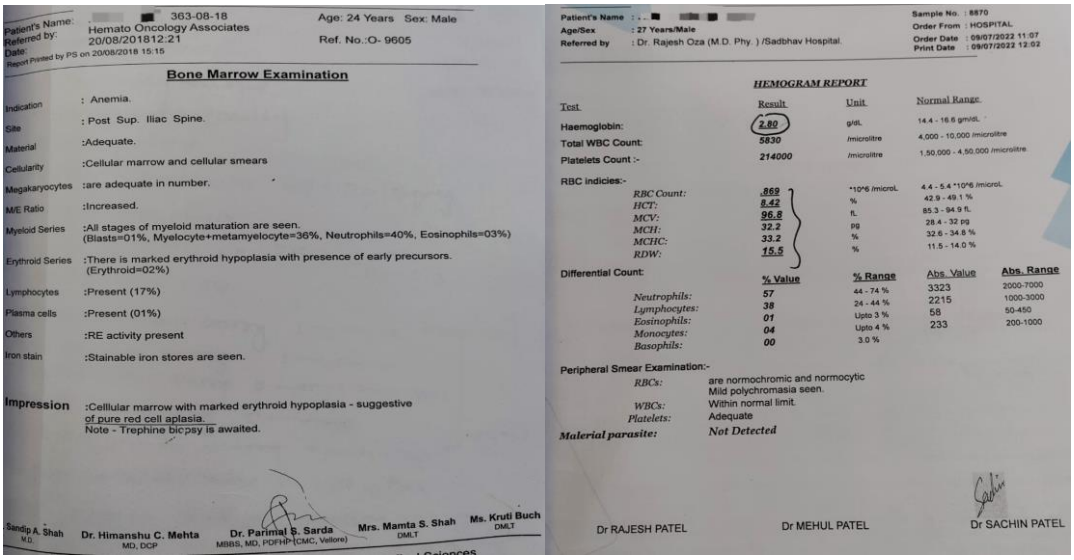
A 27year old male patient came to OPD no. -4 (P.G. Kayachikitsa department) at Govt. Akhandanand Ayurveda College and hospital, Ahmedabad with following complaints on 30th July 2022.

He took many allopathic medicine and blood transfusion approx. every 2 months in the last 3.5 years. Due to Blood transfusion, he got rid from his symptoms for short term of period only. He got tired of the blood transfusion procedure and came here for ayurvedic treatment.

Chief complaints

- *Daurbalyanubhuti* (Weakness) +++
- *Aayase swasakashtata* (Breathlessness)+++
- *Aruchi* (Anorexia)++
- *Udargauravata* (Abdominal heaviness) ++
- *Ubhayapada shoth* (Pedal edema) ++
- *Hridadrava* (Palpitation)+

Patient came with reports which is mentioned below. Bone marrow biopsy shows erythroid hypoplasia and suggestive pure red cell aplasia (20/08/2018). Hemoglobin level is 2.8 g/dl (09/07/2022).



Patient's Name: [redacted] 363-08-18 Age: 24 Years Sex: Male
Referred by: Hemato Oncology Associates
Date: 20/08/201812:21 Ref. No.:O- 9605
Report Printed by PS on 20/08/2018 15:15

Bone Marrow Examination

Indication	: Anemia.
Site	: Post Sup. Iliac Spine.
Material	:Adequate.
Cellularity	:Cellular marrow and cellular smears
Megakaryocytes	:are adequate in number.
M/E Ratio	:Increased.
Myeloid Series	:All stages of myeloid maturation are seen. (Blasts=01%, Myelocyte+metamyelocyte=36%, Neutrophils=40%, Eosinophils=03%)
Erythroid Series	:There is marked erythroid hypoplasia with presence of early precursors. (Erythroid=02%)
Lymphocytes	:Present (17%)
Plasma cells	:Present (01%)
Others	:RE activity present
Iron stain	:Stainable iron stores are seen.

Impression :Celllular marrow with marked erythroid hypoplasia - suggestive of pure red cell aplasia.
Note - Trephine biopsy is awaited.

Sandip A. Shah M.D. Dr. Himanshu C. Mehta MD, DCP Dr. Parimal S. Sarda MBBS, MD, PDFHP (CMC, Vellore) Mrs. Mamta S. Shah DMLT Ms. Kruti Buch DMLT

Patient's Name : [redacted]
Age/Sex : 27 Years/Male
Referred by : Dr. Rajesh Oza (M.D. Phy.) /Sadbhav Hospital.
Sample No. : 8870
Order From : HOSPITAL
Order Date : 09/07/2022 11:07
Print Date : 09/07/2022 12:02

HEMOGRAM REPORT

Test	Result	Unit	Normal Range
Haemoglobin:	2.80	g/dL	14.4 - 16.6 gm/dL
Total WBC Count:	5830	/microlitre	4,000 - 10,000 /microlitre
Platelets Count :-	214000	/microlitre	1,50,000 - 4,50,000 /microlitre
RBC indicies:-			
RBC Count:	.869	*10^6 /microL	4.4 - 5.4 *10^6 /microL
HCT:	8.42	%	42.9 - 49.1 %
MCV:	96.8	fL	85.3 - 94.9 fL
MCH:	32.2	pg	28.4 - 32 pg
MCHC:	33.2	%	32.6 - 34.8 %
RDW:	15.5	%	11.5 - 14.0 %

Differential Count:

	% Value	% Range	Abs. Value	Abs. Range
Neutrophils:	57	44 - 74 %	3323	2000-7000
Lymphocytes:	38	24 - 44 %	2215	1000-3000
Eosinophils:	01	Upto 3 %	58	50-450
Monocytes:	04	Upto 4 %	233	200-1000
Basophils:	00	3.0 %		

Peripheral Smear Examination:-
RBCs: are normochromic and normocytic Mild polychromasia seen.
WBCs: Within normal limit.
Platelets: Adequate
Malerial parasite: *Not Detected*

Dr RAJESH PATEL Dr MEHUL PATEL Dr SACHIN PATEL

Past History

Patient was diagnosed PRCA by bone marrow examination and treated with allopathic medicine and blood transfusion since3.5 years.

Diabetes mellitus – since 4 years

Hypothyroidism – since 4 years

Jaundice - in 2018 and 2020

Family history - no any specific

Addiction

Alcohol - 4 years

Cigarette smoking - 4 years

Tobbaco - 8 years

Personal History

- Diet - Mixed, Fast food
- Sleep - Disturbed
- Appetite - Poor
- Bowel movement - Constipated 1 time / day
- Micturition - 3-4 time/day, 1 time/night
- Pulse - 78/min
- Blood pressure - 128/80 km hg
- Temperature - 98 F
- Respiration rate - 24/min

Investigation

Patient came with Bunch of hemogram reports which was taken during allopathic treatment and Blood transfusion every 2 month since 3.5year. Hemoglobin and RBC count reports given below.

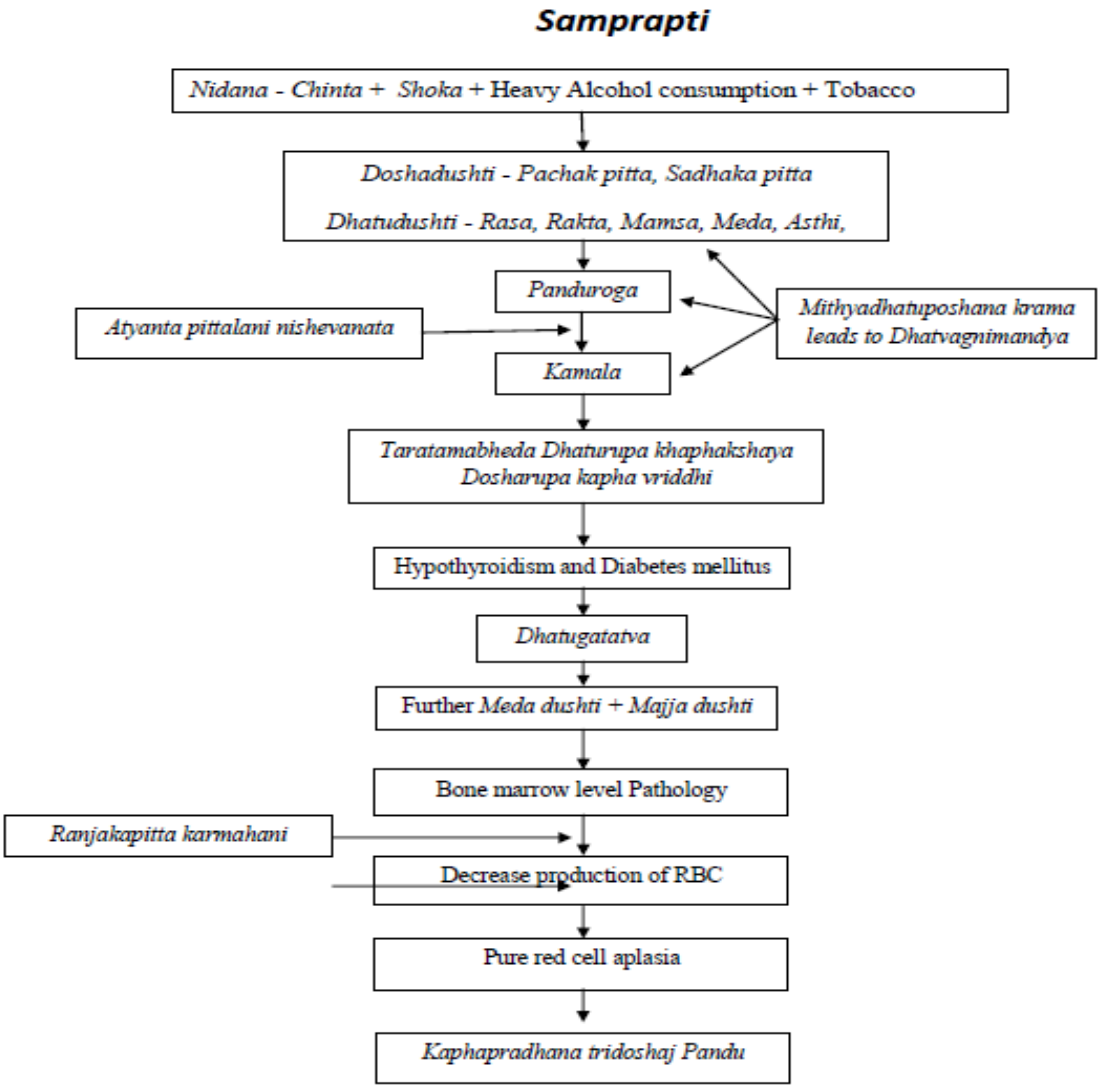
Sr no.	Date	Hb% (g/dl)	RBC count (mill/cmm)
1.	20/08/18	7.6	2.58
2.	30/08/18	7.3	2.55
3.	04/09/18	9.1	3.15
4.	21/09/18	12.9	4.58
5.	25/02/19	5.5	1.97
6.	05/03/19	7.3	2.59
7.	15/03/19	10.3	3.49
8.	29/03/19	12.6	4.35
9.	07/06/19	13.6	4.95
10.	14/09/20	9.9	3.15
11.	19/09/20	12.4	4.11
12.	28/01/22	5.8	1.93
13.	10/02/22	4.2	1.37
14.	22/02/22	7.1	2.39
15.	28/02/22	6.4	2.27
16.	12/03/22	4.1	1.52
17.	23/03/22	4.4	1.15
18.	05/04/22	5.1	1.17
19.	27/04/22	2.9	0.52
20.	17/05/22	7.1	1.75
21.	09/07/22	2.8	0.86

Dashavidha pariksha

1. *Prakriti: Kapha- pitta*
2. *Vikriti: Lakshana nimitta*
3. *Sara: Mamsa sara*
4. *Samhanana: Uttam*
5. *Pramana: Madhyama*
6. *Satmya: Madhyama*
7. *Satva: Madhyama*
8. *Aharashakti: Hina*
9. *Vyayamshakti: Hina*
10. *Vaya: Bala*

Samprapti ghatak

- *Dosha: Kapha Pradhan tridosha*
- *Dushya: Rasa, Rakta, Mamsa, Meda, Ashthi, Majja*
- *Strotas: Anna, Rasa, Rakta, Mamsa, Meda, Ashthi, Majja, Purishvaha*
- *Stroto dusti: Sanga*
- *Rogamarga: Madhyama/ Shakha*
- *Agni: Manda*
- *Samata: Sama*
- *Adhisthana: Sharir & manasa*
- *Udbhavasthana: Amashaya samuttha*
- *Vyaktisthana: Tvacha*
- *Swabhava: Chirakari*
- *Sadhyaasadhyata: Kriccha sadhya*



Therapeutic intervention

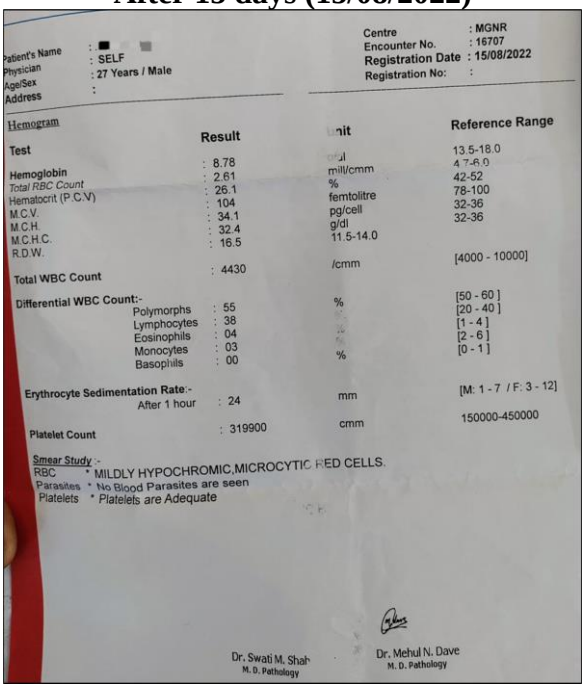
1st IPD VISIT

Initially, *Shamana* medicine was started for 5 days which is described in below table. After 5 days *Matrabasti* was started with *Mahasneha*.

Total 25 *Matrabasti* was given with dose of 25 ml.

Sr no.	Medicine	Dosage
1.	*Shivakshar pachak churna* – 5gm + *Navyas lauha* – 250 mg + *Muktasukti* – 500mg	2 BD With *Ghrita*
2.	*Haritaki churna* – 6gm + *Guda* – 6gm	1 BD
3.	*Dashmool kwath* – 10ml + *Pathyadi kwath* – 10ml	2 BD
4.	*Punarnava mandoor*	2 BD
5.	*Chandraprabha vati*	4 TDS

After 15 days (15/08/2022)



Patient's Name : [redacted]
Physician : SELF
Age/Sex : 27 Years / Male
Address :

Centre : MGNR
Encounter No. : 16707
Registration Date : 15/08/2022
Registration No: :

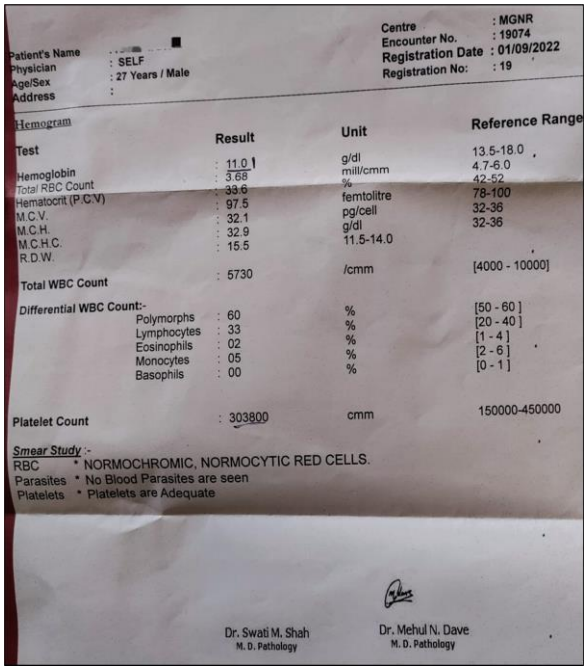
Hemogram

Test	Result	Unit	Reference Range
Hemoglobin	: 8.78	g/dl	13.5-18.0
Total RBC Count	: 2.61	mill/cmm	4.7-6.0
Hematocrit (P.C.V)	: 26.1	%	42-52
M.C.V.	: 104	femtolitre	78-100
M.C.H.	: 34.1	pg/cell	32-36
M.C.H.C.	: 32.4	g/dl	32-36
R.D.W.	: 16.5	11.5-14.0	
Total WBC Count	: 4430	/cmm	[4000 - 10000]
Differential WBC Count:-			
Polymorphs	: 55	%	[50 - 60]
Lymphocytes	: 38		[20 - 40]
Eosinophils	: 04		[1 - 4]
Monocytes	: 03		[2 - 6]
Basophils	: 00	%	[0 - 1]
Erythrocyte Sedimentation Rate:- After 1 hour	: 24	mm	[M: 1 - 7 / F: 3 - 12]
Platelet Count	: 319900	cmm	150000-450000

Smear Study :-
RBC * MILDLY HYPOCHROMIC,MICROCYTIC RED CELLS.
Parasites * No Blood Parasites are seen
Platelets * Platelets are Adequate

Dr. Swati M. Shah M. D. Pathology
Dr. Mehul N. Dave M. D. Pathology

After 30 days (01/09/2022)



Patient's Name : [redacted]
Physician : SELF
Age/Sex : 27 Years / Male
Address :

Centre : MGNR
Encounter No. : 19074
Registration Date : 01/09/2022
Registration No: : 19

Hemogram

Test	Result	Unit	Reference Range
Hemoglobin	: 11.0	g/dl	13.5-18.0
Total RBC Count	: 3.68	mill/cmm	4.7-6.0
Hematocrit (P.C.V)	: 33.6	%	42-52
M.C.V.	: 97.5	femtolitre	78-100
M.C.H.	: 32.1	pg/cell	32-36
M.C.H.C.	: 32.9	g/dl	32-36
R.D.W.	: 15.5	11.5-14.0	
Total WBC Count	: 5730	/cmm	[4000 - 10000]
Differential WBC Count:-			
Polymorphs	: 60	%	[50 - 60]
Lymphocytes	: 33	%	[20 - 40]
Eosinophils	: 02	%	[1 - 4]
Monocytes	: 05	%	[2 - 6]
Basophils	: 00	%	[0 - 1]
Platelet Count	: 303800	cmm	150000-450000

Smear Study :-
RBC * NORMOCHROMIC, NORMOCYTIC RED CELLS.
Parasites * No Blood Parasites are seen
Platelets * Platelets are Adequate

Dr. Swati M. Shah M. D. Pathology
Dr. Mehul N. Dave M. D. Pathology

2nd IPD VISIT

After *Basti chikitsa* patient got relief in all signs and symptoms and got discharged at **06/09/2022**. Then again, he started consumption of alcohol and tobacco and all symptoms get evoked. When all symptoms occurred, he again came to OPD no – 4 at Govt. Akhandanand Ayurveda college and hospital on **25/02/2023** and got admitted in IPD.

Sr no.	Medicine name	Dosage
1.	*Chandraprabhavati*	4 BD (after meal)
2.	*Punarnava mandoor*	2 BD (after meal)
3.	*Arogyavardhini vati*	2 BD (after meal)
4.	*Kshirpaka – Ashwagandha churna* - 5 gm *Shatavari churna* - 5 gm *Gokshura churna* - 5 gm *Guduchi churna* - 5 gm *Trikatu churna* - 5 gm	2 BD (after meal)
5.	*Shivakshar pachan churna* – 6 gm	2 BD (before meal)

Sr no.	***Karma***	Duration
1.	*Kala basti* – • *Niruha basti* – *Makshika* – 10 gm *Lavana* – 10 gm *Tila taila* – 20 ml *Shatpushpa Kalka* – 10 gm *Kwatha - Manjisthadi Kwatha* – 50ml *Punarnavadi Kwatha* – 50 ml • *Anuvasana basti* – *Dhanvantara taila* – 40 ml (till 07/03/2023) after that with *Mahasneha* – 40 ml	26/02/2023 to 22/03/2023
2.	*Vamana karma* – • *Snehapana* with *Mahakalyanaka Ghrita*	6 days (24/03/2023 to 29/03/2023)
	Sarvanga abhyanga and *swedana*	2 days (30/03/2023 and 31/03/2023)
	Vamana dravya *Madanaphala* – 6 gm *Saindhava* – 2 gm *Vacha churna* – 4 gm *Madhu* – 5 gm	01/04/2023 *Vega* - 12 *Upvega* – 8

AFTER TREATMENT

Sr. no.	Symptoms & Reports	Before Treatment	During Treatment (after 15 days) 15/08/2022	After Treatment (after 30 days) 01/09/2022	25/02/2023	03/04/2023	Latest 26/08/2023
1.	*Daurbalyanubhuti*	+++	++	+	+++	+	+
2.	*Aayase swasakashtata*	+++	++	+	++	+	-
3.	*Aruchi*	++	+	-	+	-	-
4.	*Udara gauravata*	++	+	-	++	-	-
5.	*Ubhayapada shoth*	++	++	-	+	+	-
6.	*Hridadrava*	+	-	-	+	+	-

7.	Hb%	2.8 gm/dl	8.78 gm/dl	11 gm/dl	3.6 gm/dl	9.8 gm/dl	11.5 gm/dl
8.	RBC count	0.86mill/cmm	2.61 mill/cmm	3.68 mill/cmm	1.11 mill/cmm	3.19 gm/dl	-

RESULT

Reports	**28/02/2023**	**20/03/2023**	**03/04/2023**
Haemoglobin	3.6 gm/dl	7.8 gm/dl	9.8 gm/dl
RBC count	1.15 mill/cmm	2.46 mill/cmm	3.19 mill/cmm
ESR	14 mm	10 mm	-
CRP	22.06 mg/L	3.9 mg/L	-
SGPT	175 U/L	-	113 U/L
SGOT	96 IU/L	-	62 IU/L
S. Bilirubin (Direct)	1.8 mg/dl	-	0.5 mg/dl
S. Bilirubin (Indirect)	1.0 mg/dl	-	0.4 mg/dl

DISCUSSION

As the young age patient who had failure in love affairs and as recurrent engagement breakup let him towards alcoholism, Gutkha chewing, Smoking, etc. abuses with irregular lifestyle and food habits combinedly these factors affected the *Dhatuposhanakrama* severely as the patient is young and with very good built and inherent *Kaphaja prakriti* with good *Vyadhikshamatva* thus the alcoholism, etc initially relieved the grief and stress leading to the weight gain[2] that ultimately converted in to Hypothyroidism then followed by Diabetes mellitus. Later on, in the presence of diabetes mellitus and continue heavy alcohol intake led to affection/impairment in liver function in along with Anti-diabetic drug intake and this is the progress of the disease as per the *Dhatugatatva* pattern. After continuously alcohol consumption, junk food and mental stress leads to *Pitta prakopa* and as per the *Dhatugatatva* principle up to the level of *Majja dhatu* caused bone marrow hypoplasia disturb in the normal function of bone marrow and also caused Jaundice. Simultaneously, the *Dhatvagnimandya* is the most important and foremost cause in this case and second is alcoholism.

The management given to the patient as per the stated above pathology *Shivakshar pachana churna*, etc combination was given for *Deepana*, *Pachana* and *Vatanulomana*.

Guda Haritaki was given to pacify/expel *Pitta dosha* and to increase the *Dhatvagni* and pacify the fluid retention/*Shotha*.

Dashmool kwath, *Pathyadi Kwath*, *Punarnava mandoor* is also given as per pathology stated above.

Matrabasti with *Mahasneha* was selected for *Snehana* because it contains *Ghrita*, *Taila*, *Vasa* and *Majja*, it acted as per '*Sarvada sarva bhavanam samanyama vriddhikaranam*'[3] enriching the *Majja dhatu* specifically. It also pacifies the root cause of the disease/ *Ruksha pitta*.[4]

The above treatment worked very well gradually patient got relief in all sign and symptoms. Haemoglobin level raised/increased up to 11 gm/dl in 1 month treatment protocol and also got rid of Blood transfusion procedures and got discharged.

Later on, patient didn't follow our instructions and restarted the sad abuses. *Mithyadhatuposhana krama* leads to same condition again. He was brought in our OPD on 25/02/2023 and got admitted again his treatment was started with *Chandraprabhavati*, *Punarnava mandoor*, *Arogyavardhini vati*, *Kshirpaka* of *Ashwagandha*, *Shatavari*, etc. Additionally, he was given *Basti* (*Malashodhana* purpose, *Panduroga sidhant* and *Ritu anusar*).

Later on, *Vamana karma* was done in which *Snehapana* was done with *Mahakalyanaka ghrita* for 6 days and there was a *Pravar Shuddhi* during *Karma* and *Samsarjana* advised accordingly.

With this management, there was markedly improvement in all sign and symptoms and in reports.

In his last follow up om 26/08/2023, only *Shamana* medicine was given as *Punarnava mandoor* and *Laghu vasant malti rasa* and *Kshirpaka* of *Ashwagandha*, *Shatavari*, *Kalamegha*, *Guduchi*, *Punarnava*.

REFERENCES

1. Lakshmidhar Dwivedi, B.K. Dwivedi, Charaka Samhita (Ayurvedadipika, Tattvapraksini Teeka), Chaukhambha Krishnadas Academy, Varanasi, Edition 2019, Chikitsasthana 16/3, 563.
2. Lakshmidhar Dwivedi, B.K. Dwivedi, Charaka Samhita (Ayurvedadipika, Tattvapraksini Teeka), Chaukhambha Krishnadas Academy, Varanasi, Edition 2019, 27/194, 547.
3. Lakshmidhar Dwivedi, B.K. Dwivedi, Charaka Samhita (Ayurvedadipika, Tattvapraksini Teeka), Chaukhambha Krishnadas Academy, Varanasi, Edition 2019, Sutrasthana 1/44, 24.

4. Lakshmidhar Dwivedi, B.K. Dwivedi, Charaka Samhita (Ayurvedadipika, Tattvapraksini Teeka), Chaukhambha Krishnadas Academy, Varanasi, Edition 2019, Chikitsasthana 3/194,195, 161.