

## Case Series

# Integrative management of hematological disorders: a case series on Healzen's PRO therapeutic protocol

Apurva Ahirrao<sup>1\*</sup>, Pandurang Kadam<sup>1</sup>, Ria Jain<sup>1</sup>,  
Dharmendra Kumar Dubey<sup>2</sup>, Kavita Menon<sup>3</sup>

<sup>1</sup>Healzen Research Private Limited, Pune, Maharashtra, India

<sup>2</sup>Department of Community medicine, Baba Kinaram autonomous State Medical College Chandauli, Uttar Pradesh, India

<sup>3</sup>Department of Nutrition, Symbiosis School of Culinary Arts and Nutritional Sciences, Pune, Maharashtra, India

**Received:** 07 October 2024

**Accepted:** 18 November 2024

### \*Correspondence:

Dr. Apurva Ahirrao,

E-mail: [apurva@healzengroup.com](mailto:apurva@healzengroup.com)

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

Hematological disorders present significant treatment challenges due to their complex etiology and need for personalized management. This case series evaluates the effectiveness of HealZen's PRO therapeutic protocol (PTP) in managing conditions like immune thrombocytopenic purpura (ITP) and severe anemia through an integrative approach. Five patients were treated at HealZen Clinic, including a pediatric case of acute ITP and four adult patients with severe anemia and related complications. Each patient received a tailored treatment regimen as part of the PTP, which integrated functional nutrition therapy (FNT), platelet therapy, targeted supplementation such as liquid chlorophyll, liquid spirulina, immunoglobulin, Kinotakara foot patch, *Carica papaya*, and propolis, and supportive therapies with conventional medical care. The case series demonstrated significant improvements across all patients. The pediatric patient with acute ITP experienced a substantial increase in platelet counts, reducing the need for invasive treatments and hospitalizations. In the adult cases, the PTP led to noteworthy enhancements in hemoglobin levels and a decrease in dependency on blood transfusions. Patients reported improvements in overall well-being, symptom management, and reduced frequency of complications. The integrative approach facilitated better patient adherence and satisfaction with the treatment process. HealZen's PTP appears to be a promising integrative approach for managing hematological disorders, showing beneficial outcomes in both pediatric and adult patients. The combination of conventional and alternative therapies not only improved clinical parameters but also enhanced quality of life. These findings suggest the potential for broader application and warrant further investigation through controlled trials to validate and optimize this holistic treatment strategy.

**Keywords:** HealZen's PTP, Hematological disorders, Personalized management, Functional nutritional therapy

## INTRODUCTION

Hematological disorders, such as anemia, neutropenia, and thrombocytopenia, significantly affect the blood's functionality and overall health. These benign hematological disorders pose a significant health challenge in India. Anemia, the most common of these disorders, is characterized by a deficiency of red blood cells or hemoglobin, leading to symptoms like fatigue, weakness, and shortness of breath. Causes of anemia range from

nutritional deficiencies, such as iron, vitamin B12, or folate, to chronic diseases and genetic conditions like sickle cell anemia.<sup>1</sup> Globally, the WHO estimates state 40% of children aged 6-59 months, 37% of pregnant women, and 30% of women aged 15-49 years are affected with anemia.<sup>2</sup> In India, prevalence rates differ across various demographics: 25.0% in men, 57.0% in women, 31.1% in adolescent boys, 59.1% in adolescent girls, 52.2% in pregnant women, and 67.1% in children aged 6-59 months.<sup>3</sup>

Neutropenia involves an abnormally low count of neutrophils, a type of white blood cell crucial for combating infections. This condition can result from bone marrow disorders, chemotherapy, or autoimmune diseases, leaving individuals more susceptible to infections.<sup>4</sup> Neutropenia is categorized based on the severity of neutrophil count reduction: mild neutropenia (neutrophil count greater than  $1 \times 10^9/L$ ), moderate neutropenia (neutrophil count between  $0.5 \times 10^9/L$  and  $1 \times 10^9/L$ ), and severe neutropenia (neutrophil count less than  $0.5 \times 10^9/L$ ).<sup>5</sup>

Thrombocytopenia, characterized by low platelet levels, is common in hospital settings and can vary widely in severity. It ranges from asymptomatic to life-threatening bleeding.<sup>6</sup> Estimates suggest it affects 10% to 38% of patients with solid tumors and 40% to 68% of those with hematologic malignancies.<sup>7</sup> While initial treatments like glucocorticoids or IVIG are effective for many with immune thrombocytopenia, sustaining long-term responses can be challenging. Medical therapies such as TPO-RA and rituximab, or surgical options like splenectomy, may be necessary for those requiring further intervention.<sup>8</sup>

In this case series, we detail our therapeutic success in treating hematological disorders patients through lifestyle modifications and personalized medication by following comprehensive HealZen's PRO therapeutic protocol (PTP) designed for hematological disorders. Healzen's pro therapeutic therapy, utilizing advanced phyto-kinetics principles, presents a promising approach.

### **Healzen's treatment approach used for hematological disorders**

PTP used for hematological disorder includes platelet therapy along with FNT to increase the super nutritional values and gynac support for menorrhagia. PTP also includes a medication regimen, this regimen included liq. chlorophyll, liq. spirulina, immunoglobulin cap, Kinotakara foot patch, tablet *Carica papaya*, and propolis drops.

Healzen's FNT for hematological disorders emphasizes a whole-foods diet rich in fruits, vegetables, whole grains, lean proteins, and healthy fats. Key nutrients include iron, vitamin B12, folate, vitamin K, and omega-3s, supporting immune and blood health. Patients should stay hydrated, avoid allergens, limit alcohol, refined sugars, and processed foods, and avoid medications like aspirin and NSAIDs unless prescribed. While FNT can't cure hematological disorders, it aids symptom management, boosts immune function, and enhances quality of life.

HealZen's platelet therapy leverages medically active phytoconstituents to restore platelets in hematological conditions without side effects. By enhancing immunity, balancing pH levels, and supporting gut bacteria, this therapy boosts protein uptake and immunoglobulins, targeting the metabolic processes that destroy platelets. T-

reg cells are signaled to achieve the desired metabolic response, leading to noticeable health improvements within hours.

Chlorophyll has shown potential benefits in managing hematological disorders, due to its structural similarity to hemoglobin, and aids in hemoglobin regeneration and blood formation, especially after hemorrhage.<sup>9,10</sup> It also supports detoxification and protects blood cells from oxidative stress, contributing to wound healing and managing chronic ulcers.<sup>11,12</sup>

Propolis, rich in antioxidants and anti-inflammatory compounds, protects blood cells from oxidative stress and supports blood vessel health, aiding in conditions like poor circulation and chronic ulcers.<sup>13,14</sup> Its immune-boosting and antimicrobial properties further protect against infections affecting blood health.<sup>15</sup>

Spirulina, a nutrient-dense microalgae, improves blood health through its antioxidant phycocyanin, which protects red blood cells from damage, and its high iron content, which supports hemoglobin production and anemia prevention.<sup>16</sup> It also helps detoxify heavy metals, reducing risks of hematological abnormalities.

Kinotakara foot patch utilizes a combination of ingredients that may improve blood circulation, support detoxification, protect blood cells from oxidative stress, and maintain healthy blood vessels, thereby contributing to overall hematological health.

*Carica papaya* supports hematological health by boosting platelet production, protecting blood cells from oxidative stress, and reducing inflammation. Its bioactive compounds, like flavonoids and papain, enhance platelet levels and safeguard blood cells, making it effective in conditions like thrombocytopenia and anemia.<sup>17</sup> By optimizing nutritional intake and leveraging phytoconstituents, PTP not only promotes faster recovery but also ensures long-term symptom management and improved quality of life for patients with hematological disorders.

## **CASE SERIES**

### **Case 1**

The patient, a 33-year-old female housewife, is the mother of an 11-month-old child at the time of her initial presentation. Her medical history includes a diagnosis of idiopathic thrombocytopenic purpura (ITP), a condition characterized by an abnormally low platelet count. In 2019, the patient was admitted to the ICU for 12 days in a critical condition. She also exhibited symptoms of thrombocytopenia, petechial hemorrhage, vaginal bleeding, lower hemoglobin levels, and periods of unconsciousness. Upon ICU admission, the patient received intensive treatment that included intravenous immunoglobulin (IVIG), immunosuppressive drugs,

Danazol, and platelet transfusions. Two bags of platelets were administered to stabilize her condition. At the time of admission at Healzen, she was in the unconscious stage also with the following symptoms such as petechial, purpura, ecchymosis, menorrhagia, fatigue, and general weakness. This critical condition necessitated an ICU visit and intensive treatment. She was placed on a pro-therapeutic protocol and a concomitant medication regimen to balance blood pH, support healthy blood maintenance, supply essential nutrients to cells and tissues, boost energy levels, and enhance immune modulatory effects. The duration of the intervention was tailored based on the patient's condition and the severity of the disease.

*Prior diagnostic assessments*

Laboratory tests at the time of admission revealed a platelet count was critically low at 1,000/ $\mu$ l, with severely

reduced hemoglobin 5.0g/dl, WBC 3,040/ $\mu$ l, and RBC 1.64m/ $\mu$ l levels.

*Outcome and follow-up details*

After applying the pro-therapeutic protocol, the lab reports show a significant improvement in the patient's health. By June 2019, there was a notable improvement in the patient's condition. The platelet count increased to 13,000/ $\mu$ l, and the hemoglobin level rose to 11g/dl, indicating better oxygen-carrying capacity. However, the WBC count remained low at 1,080/ $\mu$ l, and the RBC count improved to 3.84m/ $\mu$ l.

By January 2020, the patient's platelet count had further increased to 154,000, with consistent normal values for hemoglobin 14.0 g/dl, WBC 7,400/ $\mu$ l, and RBC 4.57 million/ $\mu$ l. This progress continued into February 2020, with platelet count rising to 165,000/ $\mu$ l (Table 1).

**Table 1: Hematological parameters pre-treatment and post-treatment.**

Laboratory assessments date	Platelet count, (/ $\mu$ l)	Haemoglobin, (g/dl)	WBC, (/ $\mu$ l)	RBC, (m/ $\mu$ l)
20.05.2019	1000	5.0	3040	1.64
<b>ICU visit and application of PTP</b>				
01.06.2019	13000	11	1080	3.84
17.01.2020	154000	14.0	7400	4.57
15.02.2020	165000	13.2	6200	4.50
<b>She was on maintenance for 2 years with consumption of chlorophyll and immunoglobulins and platelet therapy</b>				
Relapse after one year				
21.09.2023	11000	13.5	5300	4.36
30.10.2023	170000	13.40	9200	4.48
10.04.2024	250000	12.00	4400	4.22

*Relapse and management in 2023*

Despite the initial success, the patient experienced a relapse in September 2023. Her platelet count dropped to 11000/ $\mu$ L, necessitating further intervention. Continued adherence to the therapeutic protocol, including adjustments based on lab reports, led to another period of improvement. By October 2023, her platelet count had risen to 170000/ $\mu$ l, and by 10 April 2024, it had stabilized at 250000/ $\mu$ l and allowing her to perform routine activities without fatigue or weakness. Throughout this period, her hemoglobin levels and other blood parameters also remained within normal ranges.

Intensive treatment and maintenance therapy successfully stabilized the patient's critical condition, leading to a steady platelet count and improved health. HealZen's hematological PTP in managing severe ITP, with platelet therapy, functional nutrition, and lifestyle changes contributing to significant recovery. Ongoing therapy and monitoring continue to support her stable condition, showcasing a positive outcome for this complex disorder.

*Case 2*

A 60-year-old female, previously residing in the US and wife of a renowned pathologist, relocated to Pune, India two years prior to presentation. She had a history of aplastic anemia diagnosed in 2014. She had previously undergone prolonged treatment in the US, which included horse ATG, cyclosporine, and corticosteroids, as well as extensive blood transfusions, red cells, and platelet concentrates (RDPs). After relocating to India, the patient received four cycles of chemotherapy (500 mg), along with Inj. ATGAM (250 mg administered across 9 vials), cap. neoral (200 mg), and tab. revolade (100 mg). Concurrent antiviral therapy with tab. acivir (800 mg three times daily) was also administered.

To manage severe aplastic anemia and its complications, the patient received regular transfusion support with 5.5 units of single donor platelets (SDP) and 1 unit of packed red blood cells (PCV) every month. Upon initial consultation at Healzen on 30 September 2023, the patient exhibited pallor, petechiae, tachycardia, and profound fatigue. She also suffered from recurrent infections and a non-healing anal fissure.

*Prior diagnostic assessment*

The patient's hematological and biochemical parameters before treatment initiated at Healzen are summarized in Table 2, On 30 September 2023, the platelet count was 58,000, hemoglobin 5.10 g/dl, WBC 2,800/ $\mu$ l.

*Outcome and follow-up details*

The data presents a comprehensive timeline of hematological and renal parameters following the

**Table 2: Hematological parameters pre and post-treatment.**

Laboratory assessments dates	Platelet count, ( $\mu$ l)	Haemoglobin (g/dl)	WBC, ( $\mu$ l)
30.09.2023	58,000	5.10	2800
<b>01.10.2024 of application of PTP</b>			
12.02.2024	199,000	9.80	4,200
08.04.2024	160,000	8.90	3,000
01.05.2024	111,000	7.80	2,300
15.05.2024	143,000	8.10	2,600

Since January 2024, the patient's hemoglobin, platelet count, and white blood cell levels have stabilized and within safe ranges. She is currently on a maintenance dose of her medication regimen. The dose of inj. ATGM 250 has been reduced to once a month, and the dose of cyclosporine has also been tapered down by her hematologist after reviewing her complete blood count (CBC) status.

In April 2024, she underwent fistula surgery, during which all her CBC parameters remained within normal ranges. The patient has been following up monthly since November 2023, with lab investigations guiding the ongoing treatment plan.

This case report highlights the successful management of severe aplastic anemia with PNH clone positivity through a multidisciplinary therapeutic approach. Tailored treatment led to significant clinical improvement and better quality of life in this challenging case. Ongoing personalized care remains key to optimizing outcomes for complex hematological disorders.

**Case 3**

A 61-year-old male from Pune, India, presented with a history of autoimmune cytopenia and recurrent viral infections. The patient presented with pancytopenia during pre-operative investigations, exacerbated by a viral infection that led to sustained lower levels of platelets and hemoglobin. In his family history, his mother had a prolonged history of anemia.

Before initiating treatment at Healzen, the patient underwent prior interventions to manage his condition. This included two instances of blood transfusions and one

initiation of treatment at HealZen on 1 October 2023. Throughout the treatment, there was a marked improvement in these parameters as shown in Table 3.

For instance, the platelet count, which was 58,000  $\mu$ l on 30 September 2023, showed a significant increase, reaching 199,000/ $\mu$ l by 12 February 2024. Hemoglobin levels also improved from 5.10 g/dl to 9.80 g/dl during the same period. The WBC count increased from the 1,900/ $\mu$ l to the 4,500/ $\mu$ l, reflecting an enhanced immune response.

round of RDP (red blood cell distribution). His medication regimen comprised tab. danazol 200 mg, tab. folvit 5 mg once daily, tab. romiset 250 mg, tab. udiliv 150 mg twice weekly, and inj. romiset 250 mcg is administered bi-monthly.

The patient exhibited physical examination findings indicative of pallor (paleness), tachycardia, recurrent infections, fever, breathlessness, fatigue, and weakness. These factors underscored the complex medical background influencing his condition and treatment approach. Healzen clinic's PTP for autoimmune cytopenia (AC) integrates platelet therapy, immunological support for viral infections, and FNT to enhance overall health.

*Prior diagnosis assessment*

The diagnostic evaluation included comprehensive tests to confirm the hematological disorder. Initial assessments involved CBC and blood smear analysis, providing essential insights into the patient's blood cell counts and morphology.

As per Table 3, On 28 January 2024, the patient's diagnostic profile revealed a platelet count of 22,000/ $\mu$ L, Hemoglobin level of 7.8 g/dl, and WBC count of 3,200/ $\mu$ L. These findings underscored the presence of significant hematological abnormalities requiring prompt intervention and tailored treatment strategies.

*Outcome and follow-up details*

Table 3 shows significant improvements in the patient's hematological parameters after applying PTPs. After starting treatment on 19 February 2024, gradual improvements were seen, with platelet count rising to 45,000/ $\mu$ l by 14 March 2024, hemoglobin reaching 10.2

g/dl, and WBC count improving to 3,800/ $\mu$ l. By 16 May 2024, the platelet count had increased to 68,000/ $\mu$ l, hemoglobin to 11.1 g/dl, and WBC count to 4,200/ $\mu$ l,

showing significant recovery and normalization of blood parameters, indicating the effectiveness of the therapeutic intervention.

**Table 3: Hematological parameters pre-treatment and post-treatment.**

Laboratory assessments dates	Platelet count, ( $\mu$ l)	Haemoglobin, (g/dl)	WBC count ( $\mu$ l)
<b>28.01.2024</b>	22000	7.8	3200
<b>19.02.2024 first consultation and PTPs application</b>			
14.03.2024	45000	10.2	3800
11.04.2024	47000	10.1	3400
16.05.2024	68000	11.1	4200

In response to these positive trends, the hematologist has successfully tapered down the dosage of inj. Romiset 250 mcg from twice monthly to once monthly. Notably, the patient has remained free from viral infections for the past three months, reporting good energy levels and overall well-being. Tailoring treatment protocols based on comprehensive diagnostic assessments and regular follow-up evaluations contributed to favorable clinical outcomes and improved quality of life for the patient.

**Case 4**

A 5-year-old male child, born of non-consanguineous parents, was referred to Healzen by a renowned haematologist for pro-therapeutic support due to his diagnosis of acute ITP. Prior treatment had been prescribed to inj. rituximab 100 mg, tab. dapsons, tab. Wysolone, and tab. Folvit as part of his medical management. These medications were administered to address the autoimmune nature of ITP and manage its associated symptoms.

Upon physical examination during the first consultation at Healzen clinic, these symptoms were evident, reflecting the severity of his condition. The patient initially presented with ecchymosis patches scattered across his body

persisting for one and a half months, accompanied by significant bruising, fatigue, and noticeable weight loss. Healzen’s pro-therapeutic protocols were used for acute ITP. FNT, and lifestyle modifications to support immune health and manage symptoms.

*Prior diagnostic assessment*

Before initiating treatment at Healzen clinic, the diagnostic assessment conducted to confirm the patient’s hematological disorder included a CBC and prothrombin time (PT). The lab report dated 15 June 2023, indicated that the patient’s platelet count had been persistently low, 14,000/ $\mu$ L for over six months.

*Outcome and follow-up details*

Following 1<sup>st</sup> consultation and application of pro-therapeutic protocols on 7 March 2024, there steady increase in platelet count, Hb stability, and notable rise in WBC count, indicating improved immune function.

By 9 April 2024, the platelet count had increased to 18,000/ $\mu$ l. The most recent follow-up on 07 June 2024, showed the platelet count at 75,000/ $\mu$ l, hemoglobin at 11.2 g/dl, and WBC at 13,800/ $\mu$ l.

**Table 4: Hematological parameters pre-treatment and post-treatment.**

Laboratory assessments dates	Platelet count ( $\mu$ l)	Hemoglobin (g/dl)	WBC ( $\mu$ l)
<b>15.06.2023</b>	14,000	11.20	8,300
<b>07.03.2024 first consultation and PTPs application</b>			
09.04.2024	18,000	10.8	12,000
10.05.2024	30,000	10.4	30,000
07.06.2024	75,000	11.2	13,800

A detailed follow-up of the patient’s progress is summarized in Table 4. The patient has demonstrated significant improvement following treatment at Healzen. Notable enhancements include an improvement in the CBC panel, a reduced tendency to catch viral infections, a weight gain of 1.5 kg, and an overall boost in energy levels. These positive outcomes highlight the efficacy of Healzen’s integrated treatment approach.

**Case 5**

The patient, a 61-year-old female resident of Pune, was referred by a hematologist for platelet therapy due to her non-response to ATG treatment. The patient’s prior medications included antacids, anti-allergics, antiemetics, sedatives, antivirals, painkillers, cyclosporine, corticosteroids, dynazole, antibiotics, and antivirals. She

also underwent blood transfusions and received ATG therapy.

She had a medical history of aplastic anemia and presented with pre-existing conditions including thrombocytopenia and anemia. Upon physical examination at Healzen, the patient presented with generalized weakness, fever, and dyspnea on exertion. These symptoms are indicative of her underlying condition of aplastic anemia and reflect the severity of her hematological disorder. The presence of generalized weakness suggests significant fatigue and diminished physical capacity, likely due to low hemoglobin levels and inadequate oxygen transport. The fever may indicate an ongoing or recurrent infection, which is common in patients with compromised immune systems.

*Prior diagnostic assessments*

Diagnostic assessments included a CBC and serum creatinine levels. Key biomarkers assessed were platelet count, hemoglobin levels, WBC count, and serum creatinine. As per Table 5, Her initial lab report, dated 14

September 2023, revealed that her platelet count was critically low at 18,000/ $\mu$ l, hemoglobin levels were at 6.2 g/dl, and WBC count was at 2,190/ $\mu$ l, with serum creatinine elevated at 1.82 mg/dl.

*Outcome and follow-up details*

Following the first consultation and the application of pro-therapeutic protocols on 14 September 2023, the patient showed steady improvement. Her platelet count began to rise steadily, reaching 29,000/ $\mu$ l by 27 September 2023. By 29 October 2023, the platelet count had significantly improved to 90,000/ $\mu$ l, further increasing to 94,000/ $\mu$ l by 7 November 2023. The patient's hemoglobin levels also showed a marked increase, rising from 6.2 g/dl to 10.0 g/dl by 8 October 2023, with some fluctuations thereafter, but ultimately stabilizing at 10.0 g/dl. The WBC count improved from 2,190/ $\mu$ l to 4,660/ $\mu$ l by 8 October 2023, reflecting a strengthened immune response, and continued to rise to 5,730/ $\mu$ l by 7 November 2023. Additionally, serum creatinine levels, initially elevated at 1.82 mg/dl, gradually decreased, reaching 1.30 mg/dl by 29 October 2023, the details are given in Table 6 below.

**Table 5: Hematological parameters post-treatment.**

Laboratory assessments dates	Platelet count, (/ $\mu$ l)	Hemoglobin, (g/dl)	WBC, (/ $\mu$ l)	Serum creatinine, (mg/dl)
14.09.2023	18000	6.2	2190	1.82
<b>14.09.2023 first consultation and PTPs application</b>				
27.09.2023	29000	7.6	2390	1.59
08.10.2023	37000	10.0	4660	1.63
14.10.2023	47000	8.2	3060	1.70
29.10.2023	90000	8.7	4190	1.30
07.11.2023	94000	10.0	5730	1.40

Her CBC levels were out of the critical risk zone, with a notable increase in platelet count, and stabilized hemoglobin levels, which successfully enhanced the patient's blood and kidney health, leading to a stable and improved clinical condition. No RDPs or blood transfusions have been necessary for the past two months. The patient also experienced reduced viral infections and improved overall health, with significant weight gain and enhanced energy levels. This case highlights the potential benefits of a holistic treatment plan for patients unresponsive to conventional therapies.

**DISCUSSION**

The management of hematological disorders often requires a multifaceted approach due to the complexity and variability of these conditions. Traditional treatments, including medications and transfusions, may not always yield sustainable results or may be associated with significant side effects. This case series integrated treatment approach employed by Healzen's PTP combines conventional therapies with functional nutrition and lifestyle modifications in supporting hematopoietic

function and immune response in adults with hematologic diseases. It recommends a nutrient-rich diet along with lifestyle practices like regular exercise, stress management, and good sleep hygiene. Integrating these nutritional strategies with conventional treatments can optimize patient outcomes.<sup>8</sup> FNT within this framework plays a critical role in enhancing nutritional status and immune function, particularly through micronutrient supplementation like iron, B12, and folate, which aid in red blood cell production and mitigate deficiencies associated with anemia.<sup>18</sup>

This case series highlights the effectiveness of integrating platelet therapy with functional nutritional therapy in managing complex hematological disorders. In case report 1, the patient with ITP demonstrated marked improvements in platelet counts and overall health, showcasing the benefits of combining advanced phytoconstituents, such as liquid chlorophyll and propolis, with dietary strategies to enhance blood health and immunity.<sup>10,13</sup> In many countries, herbal medicine is commonly used as a primary or complementary treatment for bleeding disorders and immunopathological

conditions. Numerous herbal agents have demonstrated therapeutic benefits in managing bleeding symptoms, low platelet counts, abnormal platelet function, and autoimmune imbalances, offering a natural alternative or adjunct to conventional therapies.<sup>19</sup>

Case report 2 illustrates the challenges of treating severe aplastic anemia, particularly in patients unresponsive to standard therapies. Remarkable improvements in hematological parameters were observed after introducing HealZen's PTP, including *Carica Papaya* and nano curcumin, emphasizing the potential of functional nutritional therapy and phytotherapy in stabilizing the patient's condition.

Similarly, case report 3 demonstrated the positive impact of incorporating functional nutrition in managing autoimmune cytopenia, with significant increases in platelet counts and hemoglobin levels, coupled with a reduction in infections. These outcomes underscore the importance of targeted immunological support and a holistic treatment approach.

In pediatric care, case report 4 showcased the successful application of HealZen's PTP in a 5-year-old patient, leading to a significant rise in platelet counts and overall health improvements. This case reinforces the value of integrating functional nutrition and phytotherapy as a less invasive alternative in pediatric hematology.

Case report 5 involved a patient with a history of non-response to ATG therapy. The noticeable improvement in symptoms and stabilization of hematological parameters following the comprehensive therapeutic protocol emphasizes the potential of personalized, holistic approaches in refractory cases.

Central to these successes is the application of patient-centered care, where individualized treatment plans tailored to each patient's condition and response ensure optimal therapeutic outcomes. Regular monitoring and adjustment of therapeutic strategies are pivotal in maintaining treatment efficacy while minimizing adverse effects.<sup>20</sup>

## CONCLUSION

Collectively, these cases underscore the importance of patient-centered care and individualized treatment plans. The combination of conventional treatments with functional nutrition and phytotherapy offers a promising, holistic approach that may improve long-term outcomes and quality of life for patients with complex hematological disorders. Further research is necessary to expand the understanding and application of these integrative therapies.

## ACKNOWLEDGEMENTS

The authors would like to acknowledge Mr. Swapnil Motekar, Medical Writing Associate, and Ms. Nikita Shelage, Senior Medical Writing Associate at Jehangir Clinical Development Centre Pvt. Ltd., Pune, for their valuable contributions in editorial support, technical assistance, and reviewing significantly enhanced the quality and clarity of manuscript.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

## REFERENCES

1. Chaparro CM, Suchdev PS. Anemia epidemiology, pathophysiology, and etiology in low-and middle-income countries. *Ann N York Academy Sci.* 2019;1450(1):15-31.
2. Anaemia World Health Organization, 2023. Available at: <https://www.who.int/news-room/fact-sheets/detail/anaemia>. Accessed on 3 October 2024.
3. Ministry of Health and Family Welfare, ANAEMIA MUKT BHARAT, 2022. Available at: [https://pib.gov.in/PressReleasePage.aspx?PRID=1795421#:~:text=The%20prevalence%20of%20anaemia%20among,\(15%2D49%20years](https://pib.gov.in/PressReleasePage.aspx?PRID=1795421#:~:text=The%20prevalence%20of%20anaemia%20among,(15%2D49%20years). Accessed on 3 October 2024.
4. Chaudhari PM, Mukkamalla SK. Autoimmune and chronic neutropenia. *StatPearls Publishing.* 2023.
5. Thinggaard AB, Liposits G, Frstrup N. Dealing with pre-existing chronic neutropenia in cancer patients-considerations and consequences in the clinical praxis. *E-Cancermedical Sci.* 2020;14.
6. Verma D, Yadav R, Rampuri V, Choudhary R, Awasthi A. Etiological Profiles of Patients with Thrombocytopenia in Central India: A Tertiary Centre Study. *Cureus.* 2022;14(12):1.
7. Kim DS. Recent advances in treatments of adult immune thrombocytopenia. *Blood Res.* 2022;57(S1):112-9.
8. Da Silva Goncalves dos Santos J, De Farias Meirelles B, De Souza da Costa Brum I, Zanchetta M, Xerem B, Braga L, et al. First clinical nutrition outpatient consultation: a review of basic principles in nutritional care of adults with hematologic disease. *Scientific World J.* 2023;2023(1):9303798.
9. Saunders CW. The nutritional value of chlorophyll as related to hemoglobin formation. *Proceedings Society Exp Biol Med.* 1926;23(8):788-9.
10. Hughes JH, Latner AL. Chlorophyll and haemoglobin regeneration after haemorrhage. *J Physiol.* 1936;86(4):388.
11. Caldwell J, editor. *Biological basis of detoxication.* Elsevier. 2012.
12. Carpenter EB. Clinical experiences with chlorophyll preparations: with particular reference to chronic osteomyelitis and chronic ulcers. *Am J Surg.* 1949;77(2):167-71.

13. Pasupuleti VR, Sammugam L, Ramesh N, Gan SH. Honey, propolis, and royal jelly: a comprehensive review of their biological actions and health benefits. *Oxidative Med Cellular Longevity.* 2017;2017(1):1259510.
14. Nakajima Y, Tsuruma K, Shimazawa M, Mishima S, Hara H. Comparison of bee products based on assays of antioxidant capacities. *BMC Complementary Alternative Med.* 2009;9:1-9.
15. Simone-Finstrom M, Borba RS, Wilson M, Spivak M. Propolis counteracts some threats to honey bee health. *Insects.* 2017;8(2):46.
16. Habib MA, Parvin M, Huntington TC, Hasan MR. A review on culture, production and use of Spirulina as food for humans and feeds for domestic animals. *FAO Fisheries and Aquaculture Circular.* No. 1034. Rome. 2008;33.
17. Babalola BA, Akinwande AI, Otunba AA, Adebami GE, Babalola O, Nwifo C. Therapeutic benefits of *Carica papaya*: A review on its pharmacological activities and characterization of papain. *Arabian J Chem.* 2024;17(1):105369.
18. Micronutrients World health Organization, 2024. Available at: [https://www.who.int/health-topics/micronutrients#tab=tab\\_1](https://www.who.int/health-topics/micronutrients#tab=tab_1). Accessed on 30 October 2024.
19. Tran HD, Pham TN, Hoang HQ, Pham TD, Pham QT, Bui DT, Bui NT, Hoang C, Han B, Hoang BX. Efficacy of phytotherapy as nutritional supplements in patients with refractory immune thrombocytopenia. *Phytomedicine Plus.* 2023;3(1):100404.
20. Epstein RM, Street RL. The values and value of patient-centered care. *Ann Family Med.* 2011;9(2):100-3.

**Cite this article as:** Ahirrao A, Kadam P, Jain R, Dubey DK, Menon K. Integrative management of hematological disorders: a case series on Healzen's PRO therapeutic protocol. *Int J Res Med Sci* 2024;12:4683-90.