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A case report study on long term follow up treatment of T-AYU-HM Premium in Sickle cell anaemia Patient

Case Report

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Abstract

Sickle cell anaemia is a haemoglobin condition for which the Indian government has set up particular support provisions within the ministry of tribal affairs. Despite epidemiological and recent advances in the treatment of sickle cell anaemia over the past few years, it remains a global concern for everyone. To demonstrate the impact of T-AYU-HM Premium, the long-term treatment outcomes of a patient with sickle cell trait are detailed in this case study. A 35-year-old female patient with a family history of sickle cell anaemia was unable to finish her studies because she had blood transfusions every other month and experienced excruciating pain. Her reported painful crises, treatment compliance, the number of blood transfusions she received, and the number of hospitalizations she needed were all reviewed in this case study. Her past medication and medical history were assessed in 2008 following which the T-AYU-HM Premium treatment was started once she approached the clinic with these complaints. It was noted that the patient followed the prescribed line of treatment, had symptomatic relief from episodic pain, and was able to perform day-to-day tasks. It was noted that the patient only required one blood transfusion and one hospital stay throughout the course of the 15 years of follow-up. This case study would further the understanding and practical application of complementary medicine in the treatment of sickle cell anaemia. The potential for long-term treatment using alternative medical systems may well be established.

Key Words: Sickle cell anaemia, Haemoglobin disorder. T-AYU-HM Premium, Painful crisis.

Introduction

Sickle cell anaemia is a haemoglobin disorder for which the government of India has organized special provisions and support in ministry of tribal affairs(1). As we all know with improving technology and globalization the incidence of this haemoglobin disorder is also predicted to increase (2). Despite the fact about epidemiology and advances in treatment of sickle cell anaemia in past years it is still a global challenge for all(3). With advancement in technology and tourism and considering ease of migration of population across the countries might increases the possibility of haemoglobin disorder consider to be increases in future and presents a global challenge(4). Language barriers, access to information, and healthcare are major limiting factors in mapping the disease and providing healthcare facilities to the tribal people in India, which is mostly affected by sickle cell anaemia. Numerous initiatives have been taken to raise awareness about prenatal and premarital screening, and they will undoubtedly have an advantage. The improvement in perception and approach towards sickle cell in tribes will change for sure with a program as such(5,6).

It has been already mentioned in previous studies that almost all affected babies of sickle cell anaemia in medium- to well-resourced countries may now expect to live to adulthood but overall survival still lags behind(7). T-AYU-HM Premium is a herbomineral formulation manufactured by ATBU Harita Pharmaceuticals Pvt Ltd. The formulation demonstrated anti-oxidant and anti-sickling efficacy in in-vitro studies. The formulation has also undergone preclinical research such as acute oral, sub-chronic, and immunomodulatory activity investigations (8,9).

Case Detail

The study was reported at the Dhanvantari Clinic, an Ayurvedic healthcare centre in Vyara, Gujarat. For the past 24 years, this site has been managing sickle cell anaemia cases. A 20-year-old patient with sickle cell trait who complained of frequent blood transfusions, hospitalizations, and excruciating crises was first evaluated at the clinic in 2008. She was given alternative medication, including T-AYU-HM Premium. Based on her physical and psychological progress, she

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continued her treatment with T-AYU-HM Premium for 15 years. As a result, this article presents an intriguing case study of long-term treatment follow-up using T-AYU-HM Premium and other integrated herbal treatments for the management of sickle cell anaemia. The case study proceeded to gather more data for the improvement of the treatment options for sickle cell anaemia in the future after a thorough discussion and receiving prior consent for the use of data.

Case History

Ms. X is a 20-year-old female with a family history of sickle cell anaemia. She frequently experienced painful episodes and required blood transfusions every other month. Her mother also has the positive Sickle cell trait, suggesting autosomal recessive traits, and her father passed away when she was just 2 years old. Additionally, her maternal grandmother also had sickle cell anaemia. Prior to 2008, she was frequently admitted to hospitals for the treatment of her discomfort. She had received all of her vaccinations. Due to her need for blood transfusions every other month and the limitations on her quality of life caused by pain and a complication from her illness, Mrs. X was unable to complete her grad school. She was only receiving treatment through nutrition and folic acid.

Case Presentation

Ms. X complained of a terrible crisis when she visited the Dhanvantari Clinic on February 21st, 2008. After reviewing her symptoms of right shoulder pain and performing a laboratory test, it was recommended that she start taking T-AYU-HM Premium 300 mg twice day for 15 days. Her concerns and condition were taken into account, but integrated treatment was not recommended. The patient and her family were asked for their approval before the treatment could begin. She weighed 40 kilograms. The present day laboratory mentioned in table-1 and clinical evaluation and prescribed treatment of T-AYU-HM Premium twice a day of 300mg tablet orally. The formulation manufacturing and storage detail is already shared above in introduction. She faithfully followed the prescribed course of therapy; therefore detailed clinical and laboratory data help in justifying the outcomes. She did not pursue polypharmacy throughout this time period, and other than for emergencies, she did not visit any other clinics or hospitals.

Discussion

Discussion on Treatment follow up and clinical conditions

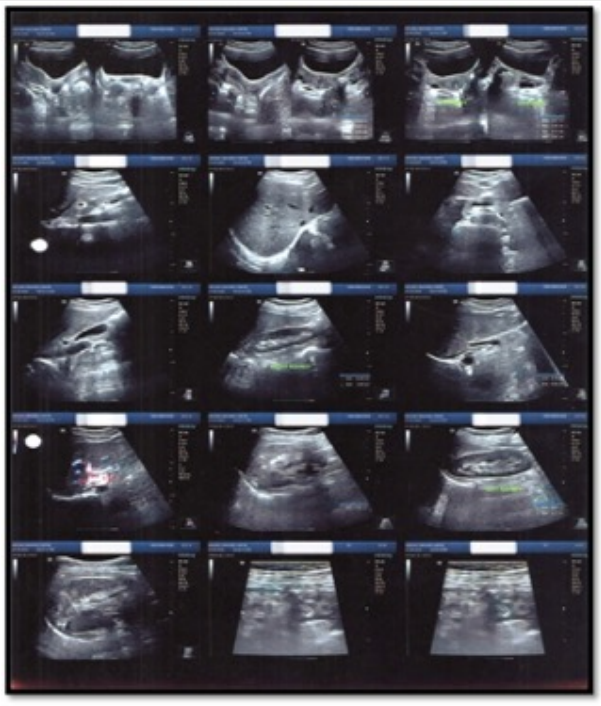
Patient complaints for every other day painful crises were improved after the 15 years of treatment follow-up mentioned in figure 1, which also resulted in a decrease in the need for allopathic medications. The patient was able to return to college level studies/ graduation and complete it without any problems because the patient's overall quality of life with regard to painful crises had improved. On February 8, 2015, while following her prescribed course of therapy, she was admitted to the hospital with a tentative diagnosis

Table 1 Clinical profile of patient on date of admission

Parameters	Haematological data
Hb (gm/dl)	8.5
RBC (m/cmm)	3.7
WBC(m/cmm)	5900
Platelet(m/cmm)	179000
MCHC (g/dl)	34
MCH (pg)	22.9
MCV (fl)	67.8
PCV (%)	25
Neutrophils (%)	68
Eosinophils (%)	0
Basophils (%)	0
Lymphocytes (%)	32
Monocytes (%)	0
ESR (mm/Hr)	0
Reticulocytes (%)	-
S.B.Total (mg/dl)	2.58
S,B,Direct (mg/dl)	1.24
S,B,Indirect (mg/dl)	1.34

of hepatitis and necessitated one unit of blood transfusion. During the hospitalization the haematological parameters indicated burden on liver through serum bilirubin. Her treatment was changed to include allopathic drugs including antibiotics and painkillers. During the hospitalization period also the T-AYU-HM Premium was continued along with integrated treatment. Despite hospitalization, post recovery the patient didn't develop complications like autosplenectomy or hepatic injuries. Patient spleen and liver appeared completely normal even on a recent last visit as well as in performing USG evaluation in figure 1. Ms. X required only one blood transfusion during the course of her 15-year treatment regimen. According to earlier investigations, blood transfusions are only necessary in cases of abrupt splenic sequestering crisis, sickling-induced lysis, and to avoid future problems.

Figure 1: Latest sonography report of patient X



Sickle cell disease individuals exhibit a variety of clinical signs; some people need intensive treatment, while others only need periodic visits. Severe crises, gallstones, osteonecrosis of the hip and shoulder joints, leg ulcers, renal illnesses, priapism, and retinal problems are among the complications that adult sicklers frequently experience. Blood transfusions are extensively used in the treatment of sickle cell disease patients. Many of the severe consequences of sickle cell disease can be effectively treated with it (10). In this case, the patient didn't require blood transfusion except once to suggest there was no progression or development of complications in the patient. Patient walking and posture also remains completely normal indicate no avascular necrosis or joint specific complications developed. Normally blood transfusion is not considered for mild or uncomplicated conditions. The main aim for transfusion is to deliver oxygen appropriately. The improved hematogram especially haemoglobin, red blood corpuscles and reticulocytes counts suggest possible improvement in oxygen requirement. Therefore restricting repetitive blood transfusion requirement in sickle cell anaemia can prevent alloimmunization or iron overload mediated complications (11). The haematological evaluation at regular intervals mentioned in figure 2 suggested gradual and sustained improvement. The haemoglobin remains within anticipated sickle patient range. There is remarkable improvement not just in clinical aspects but also observed through haematological data too. Patients' mean corpuscular volume level also indicates iron restoration and oxygen sustaining abilities are improved gradually over a period of time. Requirement of over the counter painkillers mentioned in figure 3 can easily explain the improvement in painful crises. Pain is a major obstacle in sickle cell patient's quality of life; it challenges the psychological and behavioural health of those with sickle cell anaemia patients (12).

Figure 2: Effect of treatment on haematological parameters in patient

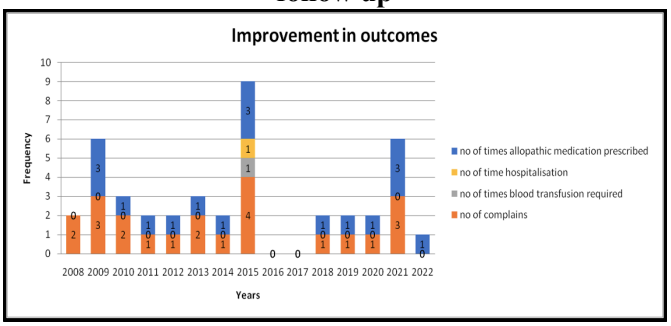
	27/2/08	1/11/08	19/1/09	5/5/09	31/10/09	20/11/10	25/5/11	10/4/13	29/5/14	14/10/15	2/11/15	21/11/15	11/4/16	4/9/17	19/6/18	29/04/21	29/12/21
Hb (gm/dl)	8.5	7.1	8.6	8.1	8.5	8.7	8.1	8.3	8.5	8	7.6	8.2	6.7	9.8	9.4	9	9.4
RBC(/cmm)	3.7	2.74	3.77	3.99	3.62	3.60	3.37	3.31	3.39	3.33	3.54	3.7	3.75	3.93	3.82	3.42	3.78
WBC(/cmm)	5900	5700	9400	11600	12400	10,900	8800	8100	9700	6500	11500	9900	8000	7800	9800	8200	11100
Platelet(/cmm)	179000	121000	244000	124000	222000	218000	223000	398000	240000	288000	291000	474000	288000	367000	380000	291000	400000
MCHC(g/dl)	34	33.9	33.9	29.5	33.9	-	32.93	32.68	-	31.3	29.4	30	27.5	34.6	32.8	-	31.8
MCH(pg)	22.9	22.4	22.8	20.3	23.5	-	24.04	25.08	-	24	21.4	22.1	17.7	24.9	24.6	-	24.9
MCV(fl)	67.8	66.2	67.2	68.8	69.3	-	73	76.74	-	76.6	73.1	74	64.4	72	75.1	-	78.3
PCV (%)	25	20.9	25.3	27.4	25.1	-	24.6	25.4	-	25.5	25.8	27.3	24.3	28.3	28.7	-	29.6
Neutrophils (%)	68	62	60	56	82	-	68	67	-	36	43	59	56	56	53	-	65
Eosinophils(%)	0	6	3	2	3	-	6	4	-	3	3	1	3	1	5	-	6
Basophils(%)	0	0	0	0	0	-	0	0	-	0	0	0	0	0	0	-	0
Lymphocytes(%)	32	32	37	42	15	-	24	25	-	61	54	40	41	43	42	-	29
Monocytes (%)	0	0	0	0	0	-	2	4	-	0	0	0	0	0	0	-	0
ESR (mm/hr)	0	0	0	0	0	-	0	0	-	8	0	0	16	0	-	16	8
Reticulocytes (%)	-	5.01	2.56	4.56	-	4.5	4.5	4.1	-	4	0	5	4.7	4.5	-	2.8	-
S Bilirubin Total (mg/dl)	2.58	2.89	4.74	5.11	3.9	-	2.2	1.8	-	1.31	5.67	9.45	-	-	-	-	-
S Bilirubin Direct (mg/dl)	1.24	0.71	1.62	1.62	1.3	-	0.6	0.4	-	1.01	3.95	6.65	-	-	-	-	-
S Bilirubin Indirect (mg/dl)	1.34	2.18	3.12	3.49	2.6		1.6	1.4	-	0.3	1.72	2.8	2	-	-	-	-

Previous studies have reported that anxiety, depression, coping, neurological issues, and QOL were the most frequently examined characteristics in adults' sickle cell patients. No doubt the multi-organ issues linked to sickle cell disease are not often caused by sickle cell trait, which is not regarded as a disease. Sickle cell trait sufferers, however, have a higher risk of developing pulmonary embolism, rhabdomyolysis, and chronic renal failure, which can all be serious health issues. Studies have also reported that it's possible for sickle cell trait patients to experience complications unrelated to the procedure even in low-stress circumstances. Previous research studies revealed that those with the trait had a 25% higher chance of developing preeclampsia than a control group of people who were sickle-negative (13, 14).

During the entire observation period there were no reported untoward effects in case report form. The clinical and laboratory evaluation along with medication adherence suggested there were no untoward effects of treatment.

Mrs. X, who is 35 years old, works as a sickle cell warrior to educate tribal members about sickle cell anaemia, the value of prenatal and premarital screening, and government assistance programmes for those with the condition who are in need. This case study is being provided to emphasize evidence-based care strategies, particularly those that improve quality of life, increase lifespan by preventing chronic organ damage, and decrease acute and chronic issues in both adults and children.

Figure 3: Improvement of patient during 15 years follow up



Conclusion

A handful of cases have been recorded for sickle cell characteristics, long-term monitoring, and the significance of treatment compliance, especially for alternative systems of medicine. A patient who adhered to the treatment saw symptomatic improvement from episodic aches and was able to carry out daily tasks. Only one blood transfusion and one hospitalization throughout a 15-year follow-up period for the patient indicate a notable improvement in their quality of life. A patient who received the right care and managed to graduate without any painful sequel may be a new sign of hope for all sickle cell patients. The highlight approach of T-AYU-HM premium with proper care is supported by evidence, especially those that enhance quality of life, lengthen life by preventing chronic organ damage, and reduce acute and long-term complications in patients.

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