Ancient Science of Life Vol. No 17(1), July 1997 pages 15 - 22

TREATMENT OF SICKLE CELL DISORDERS BY AYURVEDIC MEDICINE

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Received: 16January, 1997 **Accepted: 10 March, 1997**

ABSTRACT: *'Yogaraj and Laxadi guguly' are two Ayurvedic medicine has been tried clinically on 12 patients for the maintenance of haemoglobine level and prevention of repeated blood transfusion in sicklecell disorders, the duration of treatment was 3 month. Pathological investigations were conducted periodically during the administration of medicine. The patients were examined clinically every month to note the effect of reducing fever, weakness, enlargement of spleen and liver which are statistically significant. The Hb gm% was gradually increased in the treated patient which is also statistically significant, But not required since 1 yr. from the date of research. Thus the study proves that the administration of indigenous medicine with folic acid is beneficial in restoring the blood Hb gm% than that of only folic acid.*

INTRODUCTION

The human Red blood cells (RBC) are circular biconcave and the diameter of the center is less than periphery. In certain condition when circular RBCs under gone sickle form due to abnormal posting of certain amino acid in B chain of adult haemoglibin A1, the diseases known as sickle cell diseases or sickle cell disorders (SCD). Sickle cell disorders mainly included sickle cell anemia (SCA) sickle cell trait (SCT), sickle B thalassemia, and sickle C disease, sickle D disease and sickle E disease. Sickle cell anemia (12- 15%) sickle cell trait (80-85%) and sickle B thalassemia (2-3%) diseases are commonly seen in hilly areas of Orissa specially in the district of kalahandi (16%), Sambalpur (17%), Sundargarh (15%) and bolongir (15%) population.

The clinical features of sickle cell disorders have got maximum resemblance with Raktadusti (Jeerna Jwara, Hepatomegaly, Splenomegaly) rather than pandu Roga as described in compendiums of Ayurvedic system of medicine. Hence the diseases in combination may be mentioned as a syndrome for sickle cell disorders.

MATERIALS AND METHODS

The clinical study was done as per the following procedure given below:

(a) Selection of Patients

Twelve sickle cell disorder patients of different age groups ranging 3 to 18 years of both sex complain with mild fever, anemia (Haemoglobin 5 to 8 gm%) hepatomegaly, muscular pain in both extremities those who were advised for frequent blood transfusion and coverage of anti inflammatory drugs were selected for clinical study. All the patients were advised to attain 30 days interval regularly for 3 months. During the

follow up time all the investigations were also repeated.

(b) Selection of Drugs:

The drugs (Medicine) Yogaraj has classical references and used as hepato protecting action, blood purifier, decreasing in hepatosplenomegaly and chronic fever, which as a whole helps in pitta vicars. As the haem part of haemoglobin is intact so Lauha bhasma was not mixed with in order to avoid haem overload, Lakshyadi gugulu is used as best bone unioner which also to reduce pain (Vitiated vayu) inside bone marrow and helps in erythropoisis. As sickle cell disorders are due to vitiation of vayu & pitta. So these two drugs help to stable the above doshas.

Patient were treated with Lakshyadi gugulu after food with warm water and Yogaraj with honey. Punarnava (Barrhevia difusa) swarasa and sarapunkha (Theprosia purpuris) swarasa ½ tsf is with the dosage of 2 Gm. & 250 Mg twice daily respectively for 3 months. Patient below 10 years reveived half of the schedule drug dose with above anupans.

The preparation of medicines were as prescribed in vaisajyaratna in combination with indigenous medicines, folic acid (Folate) 5 gm once daily is supplemented through our the study period in order to help in erythropoisis.

(c) Parameter of Investigations:

Estimation of haemoglobin (sahils method) and ESR (Western green method), sickling test (24 hour method) and peripheral blood picture were the investigation procedure for diagnosis of sickle cell disorder patients, haemoglobin electrophoresis was not available near by so the confirm division of sickle cell disorders could not be done.

(d) Parameter of Assessment of Progress:

The symptoms (fever, weakness, abdominal discomfort and pain in extremities) observed during follow up period was separated by grading 0,1,2,3, on the basis of seventy and duration. The improvement was conferment from favourable shift grade of each sign and symptoms and haemoglobin gm% from 3-0.

The sign (hepato splenomegaly) and haemoglobing were measured in and gm% respectively in every follow up period.

(e) Parameter of Responses:

In view of percentage of relief it was declared in the language as follows:

(a) Response:

-No clinical features of hemolytic anemia
- Hemoglobin above 8gm%
-Sickling test positive

(b) Partial response:

-Mild to moderate features of hemolytic anemia
-Hemoglobin within 6-8gm%
-Sickling test positive

(c) No response:

- Feature of haemolytic anemia as seen before treatments or persisted
- Haemoglobin below 6gm%
- Sickling test positive

(f) Ayurvedic material and methods for study:

Ayurveda emphasizes on prajkriti (Vattik, Paittik, shlesmic, Dwandaja and tridoshas), dosha, dushya adhistan Desha and Kala as diagnosis procedures of different diseases. Patients were also analyzed according to the above ayurvedic concepts.

Table No 1.
Ingredients of YogaRaj

Name of the Drug No	Quantity
1. Haritaki	1Part
2. Bibhitaki	1Part
3. Trikatu	1Part each
4. Bidanga	! Part
5. Sidguta sgukajatu	5 Part
6. Swarnamakshika	5 Part
7. Rajatmakshika	5 Part
8. Mishri	8 Part
9. Madhu	Q.S.

Table No 2.
Ingredients of Laxadi Gugulu

Name pf the drug No	Latin Name	Quantity
1. Lakshya	Rosa centifolia	1part
2. Asthisamhari	Cissus Quadrangularis	1part
3. Arjun	Terminalia arjuna	1part
4. Aswagandha	Withina somnifera	1part
5. Nagabala	Grewia hirsute	1part
6. Gugulu	Commiphora mukul	5part

Table No 3.
Signs and Symptoms

Clinical features	No of cases	Percentage
Symptoms:		
1. Abdominal discomfort	4	33%
2. Pain extremities	11	91%
3. Weakness	11	91%
4. Fever	11	91%
Sign:		
1. Splenomegaly	11	91%
2. Hepatomegaly	11	91%
3. Bony tenderness	5	42%
4. Yellowish eye	3	25%
5. Pallor	12	100%

Table No 4
Mean and SD value of symptoms in 12 Sickle cell disorder patients

Symptoms	Grade	BT	AT
Fever	0 1 2 3 Mean ± SD	0 2 9 1 1.08 ±0.5	0 1 1 10 Mean 0.25 ±SD 0.59
Weakness	0	0	0
Mean ± SD	1 2 3	8 3 1 1.58 ±0.48	2 6 4 0.83 ± 0.69
Pain in extremities			
Mean ± SD	0 1 2 3	2 3 6 1 1.58±0.71	1 1 2 8 0.58 ± 0.59
Abdominal Discomfort	0 1 2 3 Mean ± SD	0 2 2 8 0.41 ± 0.81	0 1 1 10 0.25 ± 0.59

Table No 5.
Mean and SD value of Liver and spleen in 12 patients

Case No	Liver BT gnem	Spleen At gnem	BT	AT
1.	6	4	5	2
2.	4.5	2	7.5	4
3.	5	2	7.5	5.5
4.	0	0	3	1
5.	0	0	2.5	2.5
6.	0.5	0	0.5	0
7.	3	2.5	9	6
8.	3	2	5	1
9.	3	2	3	2
10	5	0	0	0
11.	0	0	3	1
12.	6.5	2	6	3
Mean ± SD	2.6 ±2.36	1.37 ±1.28	4.3 ±2.53	2.3 ±1.93

Table No.6
The Heamoglobin value of 12 patients (Mean ± SD)

Case No	BT	AT
1.	6.6	6.8
2.	6.4	10.2
3.	5.4	5.9
4.	5.5	6.2
5.	6.4	8.0
6.	6.6	9.2
7.	7.2	9.0
8.	6.9	7.7
9.	7.5	9.0
10	7.2	8.5
11.	6.5	9.4
12.	8.0	10.5
Mean	6.6	8.36
± SD	±0.78	±1.46

BT = Before treatment
AT= After treatment

DISCUSSION

Recently, Blood transfusion is the ideal procedure to maintain haemoglobin gm% and to save life sickling patient but the administration of indigenous drugs help to avoid recurrent blood transfusion, minimizing the clinical findings and increase the haemoglobin gm% in blood picture, the present siuty infeerrent that the maximum patients were selcted within the atge of qo0 to 15 years the patients those who had received more than -5 times blood transfusion, their liver and spleen were enlearged more than 4 cm. But after receiving the trial medicines the enlargement of liver n spleen fo those patients were gradually reduced, most of the patient were the complaints o fever (91%), weakness (91%) and pain in extremities (19%) alongwith heaptosplenomegaly.

In continuation of indigenous medicine yogaRaj and Laxadi gugulu with folic acid for Ist 30 days, improvement was less obnserved and subsequentlyl improvement was recorde with reducing fever, weakness, enlargement of spleen and liver ewhich are staistically significant, the clinical improvement in reducing pain in extremities wer marked but statistically the effect of the medicine was not signigicant . a like, the haemoglobin gm% was gradually increased in the treated patient swhich is also statistically diginifcant. But the morphology and sickle cell phemomean in peripheral blood smera wer unchanged, further blood transfusion was not required since one year form the date of research. Thus the study proves that the administration of indigenous medicine with folic acid is bebefical in restoring the blood haemoglobin gm% than the at of only folic acid. Out of twelve, tow

patients were with the symptoms fo anorexia. Constitpatiion and jaundice, after 10 days of treatment the appetite of the patients was increased and bowel was cleared but jaundice was still persisted, being vigilantto the sickle cell condition and sincere to the treatment of jaundice the prescibede sose of indigenous medicine except thefolic acid was reduced to helf of full dose and prophylactic &^ curative hepatoprotective drug (Liv 52 2 tab TDS) was administered for a period of two weeks and janudic was gradually reduced. So on the basis of clinical and investiagioin findings, it si inferred tha the indigenous medicine yogaRaj and Laxadi Gugulu may be used as an adjuvant teerapy in combination with folic acid for the treatment of sickle sell disorder patients. However this is a preliminary study further detail stiy in required to establish the effectiveness of indigenous drugs.

ACKNOWLEDGEMENT

Greatful to Dr. Jogeshwar Nath reader & Head Department of shalya G.A.M Puri (Orissa) Dr. Pradeep panda lect. Govt Ayu college, Bolangir (Orissa), Dr, Shyam sunder sharma associate proff. And head, Dr, H.K Kushwa asstt. Proff. P.G. Deptt. Of shalya national institute of ayureved, Japur for their invaluable guidance during this study.

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