INTERNATIONAL JOURNAL OF UNANI AND INTEGRATIVE MEDICINE

E-ISSN: 2616-4558
P-ISSN: 2616-454X
IJUIM 2020; 4(2): 15-19
Impact Factor (RJIF): 6.3
Peer Reviewed Journal
Received: 11-02-2020
Accepted: 13-03-2020

Shaikh Saleem Ahmed
Associate Professor,
Department Mahiyatul Amraz (Pathology), Hayat Unani Medical College, Lucknow, Uttar Pradesh, India

Khan Nazia Zubair
Assistant Professor,
Department Tashreehul Badan (Anatomy) Rehbar Unani Medical College, Punjab, India

Corresponding Author:
Shaikh Saleem Ahmed
Associate Professor,
Department Mahiyatul Amraz (Pathology), Hayat Unani Medical College, Lucknow, Uttar Pradesh, India

To evaluate the efficacy of *qurs kushta faulad* and *sharbat-e-anar shirin* in the management of iron deficiency anemia *(Soo-Ul-Qiniya)*

Shaikh Saleem Ahmed and Khan Nazia Zubair

Abstract
Background and objectives: It is a condition in which "a blood hemoglobin concentration lower than the defined normal level and, and is usually associated with decrease in circulating mass of red blood cells. This may result from decreased generation of red blood cells, or from their premature destruction, or from loss through chronic blood loss or hemorrhage. The commonest nutritional deficiency disorder present throughout the world is iron deficiency but its prevalence is higher in the developing countries. The objective of the study was to evaluate the efficacy of *Qurs Kushta Faulad* and *Sharbate-e-Anar shirin* in the management of Iron Deficiency Anemia (*Soo-ul-Qiniya).*
Methods: An open label randomized clinical study was conducted on patients (n=60) who attended the outdoor and indoor sections of Institute's hospital. The duration of study was 90days with follow up at monthly interval for clinical features and investigations.
Result: Both drugs have provided statically improvement in iron deficiency anemia with p value <0.001 that is highly significant.

Keywords: Iron deficiency anemia, hemoglobin, kushta faulad, soo-ul-qiniya

Introduction
A disease iron deficiency anemia was first recognized in medieval times as "*Chlorosis",* a termed derived from the Greek word meaning green, in 1554 AD by Johannes Lange who called it *"Disease Of Virgins",* and the disease became well known not only in medical circles but also in general population who called it the "G*reen sickness*" a condition often resulting from Iron deficiency [1].
The empirical use of iron in treatment of anemia dates from ancient times. It has been used by Egyptians, Greeks, Romans and Hindus in early times. But treatment with iron was remained controversial until the 1932 when role of iron was finally understood by convincing proof that inorganic iron was required for hemoglobin synthesis [2]. It is a condition in which "a blood hemoglobin concentration lower than the defined normal level and, and is usually associated with decrease in circulating mass of red blood cells. This may result from decreased generation of red blood cells, or from their premature destruction, or from loss through chronic blood loss or haemorrhage [3]. The World Health Organization (WHO) defines anemia as hemoglobin level <130g/L (13g/dL) in men and <120g/dL (12g/dL) in women [4]. The commonest nutritional deficiency disorder present throughout the world is iron deficiency but its prevalence is higher in the developing countries [5]. Around 30% of the total world population is anemic and half of these around 600 million people have iron deficiency [6]. Survey report from the NFHS (National Family Health Survey), in India, shows that during the period 1998-2016, over 50% of women aged 15-49 years had Iron Deficiency Anemia, also recent published study on the Burden of disease in India indicate that the burden of Iron deficiency anemia is 3.0 times higher than the average globally for other geographies at a similar level of development [7].
Iron is critical to formation of hemoglobin in red blood cells iron deficiency and its adverse health consequences result from inadequate iron intake, decreased absorption or transport, or chronic blood loss increased systemic demands for iron to meet the relatively high iron requirements of young children and reproductive aged women [8, 9].
In *Unani* literature this condition termed as *Soo-ul-Qiniya, Faqruddam ba sabab-e-Qillat-e-Faulad, Khoon ki Tabahi, Khoon ki Mohataji*, etc. by the various *Unani* physicians10.*Soo-Ul- Qiniya* is a combination of two words *"Soo"* and *"Qiniya"* which means alteration in the reservoir of blood, and *Qiniya* means *Poonji* (Treasure), also called *Raas-Ul-Maal*" and liver the reservoir of blood is termed as *Poonji"* [11, 12].

Also most of *Unani* physicians and scholars have described Soo-ul-Qiniya (Iron deficiency anemia) under different headings like *Ehtebaas-e- Tams*, *Zufr-e-Talqiya*, *Soo-e-Mijaz Barid* of liver and *Bawsir-e-Damvi* which are very similar to *Soo-ul-Qiniya* [13].

Avicenna (Ibn-e-Sina 980-1037AD) explained in his famous book *Al-Qanoon Fit-Tib* (Cannon of Medicine), that "anemia occurs due to cold temperament of liver with clinical features of pallor, papilla edema, and edema in extremities, he also described dyspnoea, amenorrhea, weakness and fatigue as some important features of *Soo-Ul-Qiniya* which are very similar to iron deficiency anemia [14].

Abul Hasan Ali Bin Abbas Al Majoosi (930-994-AD) in his famous book *Kamil-u-Sana* mentioned that *Soo-Ul-Qiniya* is the result of defect in *Muallid-e-Khoon* (haemopoiesis) caused by hepatic coldness due to *sue Mijaz-e-Jigar* which down regulates the haemopoiesis, simultaneously *zof-e-kulliya* exist, altering filtration as result *Istisqaa* (edema) sets in [15].

The control of Iron deficiency anemia requires multiple strategies such as increasing the level of intake through diet, improving the bioavailability of the dietary iron, control of parasitic infestation or infection, and supplementation with medicinal iron16**.** A large number of patient especially females, attending the hospital are observed to be anemic.

Keeping all these factors in view the highly claimed drugs *Qurs Kushta-e-Faulad* as a good iron supplement and *Sharbat-e-Anar Shirin* which is not only a good liver tonic but also increases iron absorption in the body have been selected for the study. Although there are so many *Unani* drugs with iron as ingredient, yet only few has documented evidence of their efficacy.

Materials and Methods

Study Design

An open label randomized clinical study was conducted on patients who attended the outdoor and indoor sections of Moalijat at Z.V.M Unani medical college, Pune. During the period of extending from 2010-2013.The duration of study was 90days with follow up at monthly interval for clinical features and investigations. Ethical clearance was obtained from ethical committee with reference no. MMERC/EC/ZVM dated 02/04/2011.

Participants: The present study was conducted on 60 adult patients suffering from Iron deficiency anemia. The patients belonging to either sex were selected randomly for study.

Patients' Selection Criteria

Inclusion Criteria

Only those patients, who came with the complaints of fatigue, lassitude, palpitation, exertional dyspnea, faintness were taken into considerations and investigated to ascertain the diagnosis, with hemoglobin and Serum Iron below 10 gm%, 50µg/dl respectively. Only after the confirmation of diagnosis as Iron deficiency anemia, patients were selected for the study.

Exclusion Criteria

Patients suffering from active bleeding, chronic disease, any systemic disease (Diabetes Mellitus, Coronary Artery Diseases, Pulmonary Tuberculosis etc.) ; mentally impaired, and pregnant women were excluded from the study. The study was open and each patient acted as his/her own control. The patient selected for this study had either not taken any treatment at all or had let the treatment before a pretty long period and no concomitant treatment was allowed during the study for the same disease.

Laboratory Evaluation

Following investigations were carried out during the study, to ensure better diagnosis and assessment.

Routine Investigations

- Routine Haemogram

Routine haemogram was done for Hemoglobin concentration (Normal value: male 16±2 gm/dl, female 13±2 gm/dl).

- Examination of Stool: Stool examination for ova and cysts was done as a routine test and occult blood as special test.
- Examination of Urine: Routine and Microscopic urine examination for the presence of albumin, sugar, pus cells and crystals was done before the commencement and then during the course of the study.
- Special Investigations: following hematological and biochemical tests of all the cases were carried out at the commencement of the study and at regular intervals to confirm the diagnosis, to assess the improvement and to vigil any adverse/unwanted effects of the drug given.
  - Packed Cell Volume (PCV): Normal value:41-45%
  - RBC Count Normal value: 5.5 million/dl(Male), 4.8 million/dl (Female)
  - GBP (size, color and shape of RBCs): Normal; Normocytosis, Normochromic, Normal in shape.
  - Mean Corpuscular Volume (MCV)
  - MCV = [PCV X 10]/[RBC Count (million/dl)]: Normal value: 90±8fL
  - Mean Corpuscular Haemoglobin (MCH)
  - MCH= [Haemoglobin (gm/dl) X10]/[RBC Count (million/dl)]: Normal value 30±3 pg
  - Mean Corpuscular Haemoglobin Concentration (MCHC)
  - MCHC=[MCH X 100/PCV]: Normal value 33±2%
  - Serum Iron (Ferrozin method): Normal range 50-150 µ/dL
  - Total Iron Binding Capacity (TIBC) Normal range Ferrozin method) 300- 360µg/dL
  - LFT (Liver Function Test):
    - Serum Bilirubin (Modified method).
    - SGPT (Reitman and Frankel method).
    - SGPT (Reitman and Frankel method).
    - Serum Alkaline Phosphatase (Kind and Kings Method).
  - RFT (Renal Function Test):
    - Blood Urea estimation (DAM method).
    - Serum Creatinine estimation (Alkaline Picrate method).

Availability of Drugs

Drugs *Qurs Kushta Faulad* and *Sharbat-e-Anar Shirin* was purchased from medical store manufactured by, Hamdard (GMP certified), Delhi. All patients were received *Qurs* 1 tablet twice daily and *Sharbat* 25ml BD and advised to take regular drug in proper dosage and bring the remaining drugs in each follow up.

Statistical Evaluation

The data were collected as per case record form and transformed into an excel sheet, appropriate diagrammatic presentation of data in the form of bar diagram pie diagram and linear graphs were done to make data concise attractive and easy to interpret

Following formulas were used in the calculations:

- Calculation of the Mean:
  - Mean=∑ x/n
  - Where x is the variable
  - n is the number of cases
- Calculation of the Standard Deviation
  - S = √1/n-1∑ (x-x)2
- Calculation of the 't' Value
  - t = d √N/S
  - Where d= Mean of difference before and after treatment
  - S= Standard Deviation of the difference
  - N= Number of cases
- Determination of 'P' value

The P value was determined from the statistical table and interpreted as following:

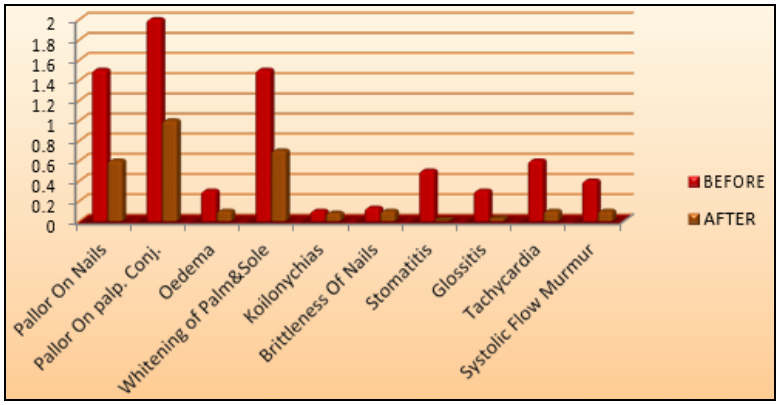
- P<0.050= Significant
- P<0.001=Highly Significant
- P>0.050=Insignificant

Results

Table 1: Showing effect of drugs on SIGNS

Symptoms	Before (n=60)		After (n=60)			P-value
	No. Of Patients	Mean Severity Score	No. Of Patients	Mean Severity Score	Improved Percentage	
Pallor on nails	60	1.5 + 0.54	38	0.6 + 0.50	36.60%	0.001
Pallor on palp. conjunctiva	60	2 + 0.62	49	1 + 0.52	18.30%	0.001
Oedema	21	0.3 + 0.48	6	0.1 + 0.30	71.40%	0.001
Whitening of palm & sole	60	1.5 + 0.49	44	0.7 + 0.44	26.60%	0.001
Koilonychias	6	0.1 + 0.37	4	0.08 + 0.30	33.30%	0.161
Brittleness of nails	6	0.13 + 0.43	5	0.1 + 0.35	16.60%	0.13
Stomatitis	25	0.5 + 0.72	1	0.01 + 0.12	96%	0.001
Glossitis	19	0.3 + 0.54	2	0.03 + 0.1	89.40%	0.001
Tachycardia	38	0.6 + 0.51	6	0.1 + 0.30	84.20%	0.001
Systolic flow murmur	26	0.4 + 0.49	7	0.1 + 0.32	65.50%	0.001

(The values are mean ± SD, P-values are obtained by paired "t" test, P-value less than 0.005 is considered to statistically significant.)

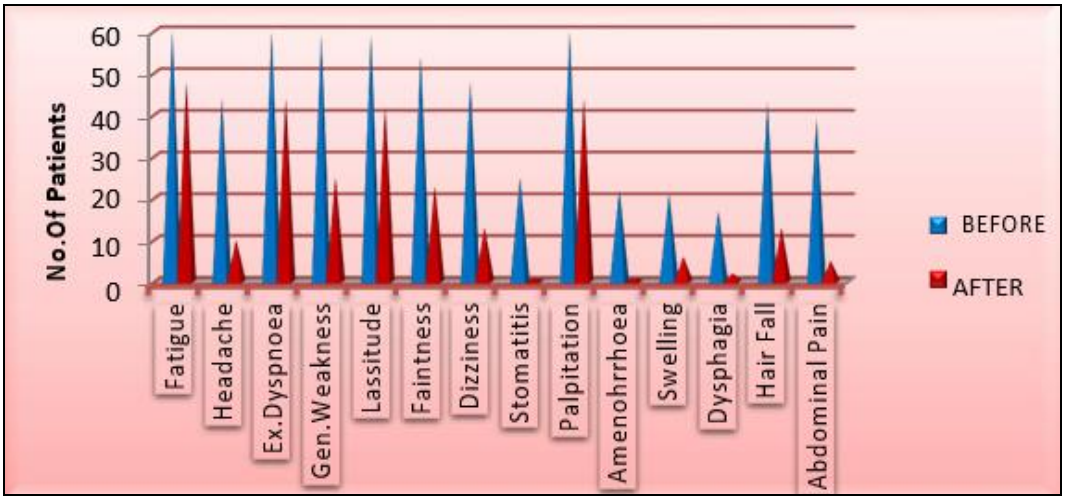


Graph 1: Showing effect of drugs on Signs

Table 2: Showing effect of drug on symptoms

Symptoms	Before *(n=60)*		After *(n=60)*			P-value
	No. of Patients	Mean Severity Score	No. of Patients	Mean Severity Score	Improved Percentage	
Fatigue	60	2.2 ± 0.64	48	1 ±0.63	20%	0.001
Headache	44	0.9 ± 0.68	10	0.1 ±0.37	77%	0.001
Ex. Dyspnoea	60	1.9 ± 0.64	44	0.8 ±0.55	26%	0.001
Gen.weakness	59	2.1 ± 0.63	25	0.4 ±0.59	57.60%	0.001
Lassitude	59	1.6 ± 0.69	42	0.7 ±0.56	28.80%	0.001
Faintness	54	1.1 ± 0.58	23	0.3 ±0.49	57.40%	0.001
Dizziness	48	0.9 + 0.57	13	0.2 +0.41	73%	0.001
Stomatitis	25	0.5 + 0.72	1	0.01 +0.12	96%	0.001
Palpitation	60	1.6 +0.70	44	0.8 +0.58	26.60%	0.001
Amenorrhoea	22	0.3 + 0.48	1	0.01 +0.12	95.40%	0.001
Swelling	21	0.3 + 0.48	6	0.1 +0.30	71.40%	0.001
Dysphagia	17	0.2 + 0.45	2	0.05 +0.21	88.20%	0.001
Hair fall	43	0.9 + 0.70	13	0.2 +0.46	69.70%	0.001
Abdo. Pain	39	0.6 + 0.50	5	0.8 +0.27	87%	0.001

(The values are mean ± SD, P-values are obtained by paired "t" test, P-value less than 0.005 is considered to statistically significant.)



Graph 2: Showing effect of drugs on Symptoms.

Table 3: Showing effect of drug on Investigations.

	Before	After			
Laboratory Evaluation	**(n=60) (0th DAY)**	**(n=60) (90th DAY)**	**SE**	**t-VALUE**	**P-VALUE**
	Mean + SD	**Mean + SD**			
Haemoglobin Concentration	7.08 ± 1.01 (Gm %)	8.73 ± 0.99 (Gm %)	0.05	27.94	<0.001
Red blood cells	3.17 ± 0.28 (106/cumm)	3.64 ± 0.33 (106/cumm)	0.02	19.74	<0.001
Packed cell Volume	26.2 ± 3.62 (%)	30.75 ± 3.59 (%)	0.21	20.83	<0.001
Mean Corpuscular Volume	69.58 ± 5.17 (femtoliter)	74.18 ± 4.79 (femtoliter)	0.34	13.48	<0.001
Mean Corpuscular Haemoglobin	20.48 ± 2.06 (picogram)	23.26 ± 1.83 (picogram)	0.16	16.77	<0.001
Mean Corpuscular Haemoglobin cn.	24.93 ± 1.97 (%)	28.12 ± 1.69 (%)	0.16	19.65	<0.001
Serum iron	65.48 ± 4.17 (µ/dl)	70.78 ± 3.83 (µ/dl)	0.32	16.56	<0.001
Total iron Binding capicity	485.5 ± 9.92 (µg/dl)	475.4 ± 8.35 (µg/dl)	0.02	0.67	<0.001
Serum Creatinine Level	0.89 ± 0.18 (mg/dl)	0.87 ± 0.14 (mg/dl)	0.55	18.32	>0.05

Discussion

From the above tabulated observation of effect of drug on symptoms. It is evident that these drugs have 96% effect on stomatitis, 95.40% effect on amenorrhea, 88.20% effect on dysphagia, followed by 87% effect on abdominal pain, 77% effect on headache, 71.40% effect on swelling, 69.70% effect on hair fall, and 57% effect on gen. weakness, and faintness respectively. Minimum effect was seen on fatigue (20%), followed by 26% effect in exertional dyspnoea and palpitation after 90days of treatment.

During the study all the patients were examined for the signs as noted in above table it was observed that pallor on conjunctiva (100%), pallor on nails (100%), whitening of palms and soles (97.5%), tachycardia (82.5%) and bald tongue (77.5%) were the most consistent signs. Whereas oedema, systolic flow murmur, swollen and inflamed gums, glossitis, brittleness of nails, koilonychias, were less frequent signs only observed in cases of severe anemia.

It was observed that the drug has maximum 96% effect on stomatitis, 89.40% effect on glossitis, 84.20% effect on tachycardia, improvement in oedema and systolic flow murmur, was observed as 71.40%, and 65.50%, respectively. Minimum effect of 16.60%, was observed in brittleness of nails, 18% effect on pallor of conjunctiva, 33.30% effect was seem on koilonychias, and 36.60% effect was found on pallor nails.

As it is shown the mean hemoglobin value before treatment was 7.08 ± 1.01(gm %), which improved to 8.73 ±0.99(gm %), after 90days of treatment. On applying "paired t test" it was found that t=27.94; p, 0.001, hence the result was highly significant. The mean RBCs count before treatment was 3.17 ± 0.28 (million/cumm), which improved to 3.64 ± 0.33(million/cumm) after 90days of treatment. It was found that t = 19.74; p<0.001. The mean PCV before treatment was 26.2 ± 3.62(%), which improved to 30.75 ±3.59(%), after 90days of treatment. It was found that t = 20.83, p < 0.001. The mean MCV before treatment was 69.58 ± 5.17(femolitre), after 90days of treatment. It was found that t = 13.48, p < 0.001. The mean MCH before treatment was 20.48 ± 2.06 (picogram), which improved to 23.26 ± 1.83 (picogram), after 90 days of treatment, with t= 16.77, p < 0.001. The mean MCHC before treatment was 24.93 ± 1.97 (%), which improved to 28.12±1.69(%), after 90days of treatment with t=19.65, *p*<0.001. The mean serum iron before treatment was 65.48±4.17 (µ/dl), which improved to 70.78 ±3.83(µ/dl), it was found that t = 16.56, p < 0.001. The mean total Iron binding capacity before treatment was 485.5 ± 9.92(µ/dl), which improved to 475.4 ±8.36(µ/dl), after 90days of treatment and t = 18.32, *p*< The mean serum creatinine level before treatment was 0.89 ± 0.18 (mg/dl), which was found to be 0.87 ±0.14 (mg/dl), after 90days of treatment on applying "paired t test" it was found that t = 0.67, *p*>0.05, hence the drug has insignificant effect on serum creatinine level.

Since all the clinical features if iron deficiency anemia is either due to Iron deficiency anemia or due to deficiency of iron in the body tissues. After administrating the *Kushta-e-Faulad*, 1 tablet twice daily with *Sharbat-e-Anar shirin*, 25ml twice a day orally for duration of 90days. The blood production in the body is increased by Haemopoietic and Iron supplementation with *Kushta Faulad*. Whereas some drugs have styptic (haemostatic) as well as astringent

effects, which stops further blood hence iron loss from body, and due to presence of vitamins and minerals as well as antioxidants in *Sharbat-e-Anar Shirin*, improves the general nutritional status and debility, st the same time presence of Vitamin C in the formulation act as adjuvant in iron absorption, ultimately increasing the quantity of blood in body.

Conclusion

Drug improves the clinical symptoms and signs as well as mild to moderate complications of iron deficiency anemia without any GI upset. Drug also improve the laboratory parameters (Hb%, PCV, RBC's count, serum iron, TIBC etc.) as far as adverse effect is concerned during the course of treatment; no any adverse effect was observed or reported by the patients rather than there was improvement in liver metabolism. Due to presence of vitamins and minerals as well as antioxidants, the drug also improves the general nutritional status and debility.

Acknowledgement

The Authors are thankful to Institution's Director, Principal, and attending patients for all their cooperation.

References

1. Patricia Jasen. The Disease of Virgins: Green Sickness, Chlorosis, Canadian Bulletin of Medical History Spring. 2007; 24(1):240-242.
2. Nazanin, Abbaspour, Richard Hurrell, Roya Kelishadi, Journal of Research in Medical Sciences. 2014; 19(2):164-174.
3. World Health Organization, The Prevalence of Anemia in Women; A tabulation of available information, 2nd Edition WHO, Geneva.
4. Longo, Fauci, Kasper, Hauser, Jameson, Loscalzo, Harrison's Principles of Internal Medicines, McGraw Hill, 18th Edition, 449.
5. Harsh Mohan, Text book of Pathology, Jaypee brothers, Dariya Ganj New Delhi, 6th Edition, 295.
6. Nicholas, Nicki R, Colledge, Brian R, Walker CRW. Edward, Davidson's Principles and Practice of Medicine, 21st Edition, reprinted in Great Britain, 1017-1018.
7. Rajesh Kumar Rai, Wafaie W, Fawzi, Anamitra Barik, Abhijit Chowdhury, The Burden Of Iron Deficiency Anemia Among Women In India; WHO, South East Asia Journal Of Public Health, 7, 18-23.
8. YIP R, Iron Deficiency, WHO Bulletin Oms; 1998; 76(2):121-123.
9. Matthew J, Warner; Muhammad T, Kamran, Anemia, Iron Deficiency, Stat Pearls Publishing. [PubMed].
10. Allama Najeebuddin Samarqandi, Moalijat Sharah Asbab, Tarjuma Shaikhul Jamia Allama Hakim Kabeeruddin, Darya Ganj, New Delhi. 2009; 2:560.
11. Tabri Abul Hasan Ahmad, Al-Moalijat Buqratiya, Central Council of Research in Unani Medicine, New Delhi. 1995; 3:202-215.
12. Khan Hakeem Hadi Husain, Tarjuma Zakheera Khwarizum Shahi (Original author, Ismail Jurjani), Matba, Munshi, Nawal Kishor,Lucknow, 1878; 6:414-598.
13. Hakim Mohammad Hadi Hasan Khan Muradabadi, Tarjuma Ilaj-Ul-Amraz (author Hakeem Sharif Khan), CCRUM (Central Council of Research in Unani Medicine), New Delhi, 2005, 437-445.
14. Kantoori Sayyed Gulam Husain, Tarjuma Qanoon, (Original Author Shaikhul Raees Bu Ali Sina, Darya Ganj New Delhi, 3(2), 884-885.
15. Kantoori Sayyed Ghulam Husain, Tarjuma Kamil-us-Sana, (Original Author Abul Hasan Ali Bin Abbas Al Majoosi), Munshi Nawal Kishor, Lucknow. 1885; 1:339, 517,521.
16. Jeffery L Miller, Iron Deficiency Anemia; A common and Curable Disease, Cold Spring Harbors. Perspectives Medicine, 2013, 3(7).