

Assessing the Efficacy of Ferrum Arsenicosum Mitigating Nutritional Anemia Among Young Adolescent Girls: A Pilot Study

Dr. T Surekha¹, Dr. Ch. Rambabu²

¹Associate Professor, Department of Community Medicine, ² Assistant Professor, Department of Community Medicine,

MNR Homoeopathic Medical College and Hospital, KNR University, Sangareddy, India.

Corresponding Author: Dr. T. Surekha

DOI: <https://doi.org/10.52403/ijshr.20230441>

ABSTRACT

Nutritional anemia is a prevalent health concern, particularly in young girls age ranging from 15-30 years identifying the cause of different issues in the girls caused because of nutritional anemia is very crucial. This study is done to know the effectiveness of Ferrum Arsenicosum in improving nutritional anemia. Participants were administered Ferrum Arsenicosum under controlled conditions, and their hemoglobin levels were monitored over a specified period. 100 students were screened out of which 75 students were anemic. 20 samples were taken consent and administered Ferrum Ars -30CH for 3months. The study was analyzed statistically where Ferrum-Arsenicum is showed drastic improvement in Hb% levels.

Keywords: Nutritional anaemia, Haemoglobin, Iron, Ferrum-Arsenicum, Anaemia Mukh Bharat

INTRODUCTION

The term Nutritional anemia means insufficient intake of certain nutrients required for synthesis of Hemoglobin and Erythrocytes.⁽¹⁾

According to WHO Nutritional Anemia is defined as “a condition in which the hemoglobin content of blood is lower than normal as a result of a deficiency of one or more essential nutrients, regardless of the cause of such deficiency”⁽²⁾. Most important micronutrients required in the

synthesis of Haemoglobin are Iron, Folic acid and Vitamin B12 respectively.

Therefore, Deficiencies of Iron, Foliates and Vitamin B12 alone or in combination had a contribution as cause of anemia. Other Deficiencies Like minerals and vitamins, such as Copper, vitamin B6, vitamin C, and riboflavin are secondary causes of anemia.⁽³⁾

Prevalence of anemia is evidently high in developing countries due to inadequate diet, poverty, pregnancy/lactation and poor availability of health services.⁽⁴⁾

According to Ministry of Health and Family welfare, government of India launched the ANAEMIA MUKH BHARAT (AMB). This strategy target is to reduce anemia in the vulnerable age groups such as children, adolescents and women. Prevalence of anemia according to National Family Health survey 5 (NFHS-5), is 57.0 % in women, 59.1% in adolescent girls (15-19 years). In Telangana state prevalence of anemia in women is 57.6% and in adolescent girls is 64.7%.⁽⁵⁾ It is very simple to control Nutritional anemia by providing the deficient nutrients either as fortification of food or therapeutic supplements.⁽⁶⁾

Nutritional anemia encompasses all pathological conditions in which the blood hemoglobin concentration drops to an abnormally low level, due to a deficiency in one or several nutrients.⁽⁷⁾ Anemia is third

of the world's population and contributes to increased morbidity and mortality, decreased work productivity, and impaired neurological development. Understanding anemia's varied and complex etiology is crucial for developing effective interventions that address the context-specific causes of anemia and for monitoring anemia control programs.⁽⁸⁾

SIGNS AND SYMPTOMS:

Patients with nutritional anaemia is

- Fatigue and diminished capability to perform hard labour
- Leg cramps on climbing stairs
- Cold intolerance
- Reduced resistance to infection
- Altered behaviour (eg, attention deficit disorder)
- Dysphagia with solid foods (from oesophageal webbing)
- Worsened symptoms of comorbid cardiac or pulmonary disease

Findings on physical examination may include the following:

- Impaired growth in infants
- Pallor of the mucous membranes (a nonspecific finding)
- Spoon-shaped nails (koilonychia)
- A glossy tongue, with atrophy of the lingual papillae
- Fissures at the corners of the mouth (angular stomatitis)
- Splenomegaly (in severe, persistent, untreated cases)
- Pseudotumor cerebri (a rare finding in severe cases)⁽⁹⁾

GENERAL MANAGEMENT:

India's National Institute of Nutrition has pioneered the development of Double Fortified Salt (DFS) is a new method of fortification to deliver crucial amounts of iodine and iron to humans through their diet⁽¹⁰⁾. It is a simple addition of ferric ortho – phosphate or ferrous Sulphate with sodium bisulphate. This DFS to be consumed for a

period of 12-18 months to overcome anemia.

Jaggery contains sufficient amounts of iron and carotene derived from cooking pan⁽²⁾

Dietary supplement in two main forms:

Heme iron containing foods like meat (beef), beef liver, sea foods (salmon fish, oysters) and poultry. Non-heme iron containing foods like Spinach, kidney beans, chick peas, Lentils, nuts (pistachio)⁽¹¹⁾

HOMOEOPATHIC APPROACH:

Iron is a key nutrient for production of red blood cells, which is required to improve Hb%. Many studies were done and published on homoeopathic remedies. Remedies like Lecithin, Ferrum-ars, Ferrum-met, Aletris. farinosa, Ferrum. phos, Phosphorus, China, Nat-Mur, Nitric-acid, Pulsatilla and many more. Rubrics from different repertories are below,

- ❖ Generalities, anemia (p. 1344) - Kent Repertory⁽¹²⁾
- ❖ Clark: Clinical: Anemia, Chlorosis, Bright disease, liver enlargement, Spleen enlargement.⁽¹³⁾
- ❖ William Boericke: Generalities, Anemia, Chlorosis: Ferr.ars.⁽¹⁴⁾

Ferrum Ars: Common Name –Arsenite of Iron, It is invaluable remedy in cases of simple and pernicious anemia, Chlorosis. It should be remembered in the case of patients with enlarged spleen and liver. The appetite may be good but digestion is impaired, lienetric stool. There may be chronic diarrhea, also shows remarkable effect on diseases of skin. It has benefited eczema, impetigo, psoriasis and even lepra.⁽¹⁵⁾

MATERIALS & METHODS

Study Sample: 20 samples

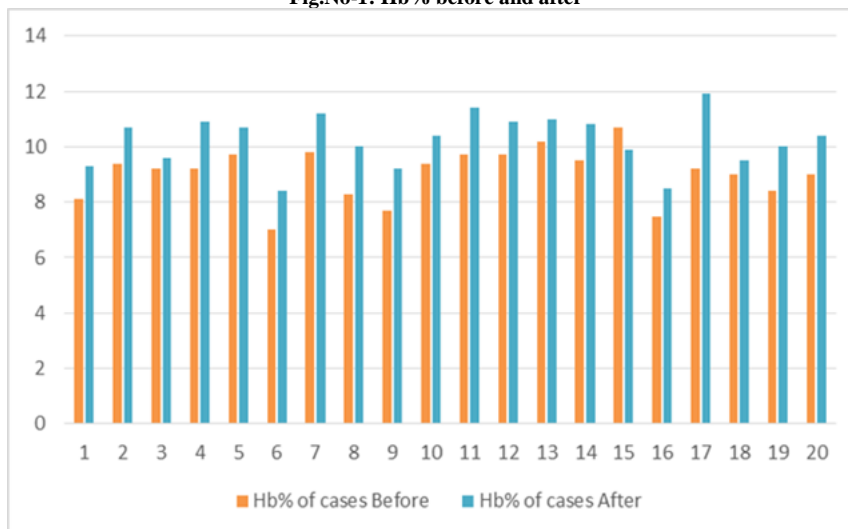
Study Design: Experimental study

Location of the study: I & II BHMS students of MNR Homoeopathic Medical College and Hospital, Sangareddy.

Table.no:1 – Before and after score of Hb%

S. No	Hb% of cases	
	Before	After
1	8.1	9.3
2	9.4	10.7
3	9.2	9.6
4	9.2	10.9
5	9.7	10.7
6	7.0	8.40
7	9.8	11.2
8	8.3	10
9	7.7	9.2
10	9.4	10.4
11	9.7	11.4
12	9.7	10.9
13	9.2	11
14	9.5	10.8
15	10.7	9.9
16	7.5	8.5
17	9.2	11.9
18	9.0	9.5
19	8.4	10.0
20	9	10.4

Fig.No-1: Hb% before and after



STATISTICAL ANALYSIS: Paired t test is applicable for the study.

HYPOTHESIS:

A. Hypothesis (Research hypothesis)

- Is there any difference between the scores taken before the homoeopathic treatment and scores taken after the homoeopathic treatment?

B. Null hypothesis

- There is no difference between the scores taken before the homoeopathic treatment and scores taken after the homoeopathic treatment.

C. Standard error of the mean of difference

D. Critical ratio

n (number of cases taken in study) = 20

B (Before) = Score before homoeopathic treatment

Af (After) = Score after homoeopathic treatment

d: difference of scores = (B-Af)

$\Sigma d = 120.59$

Mean of difference of scores (d) = 1.34

Population standard deviation is (S_D) = 0.57

Standard error of mean is (SE) = 0.127

Critical ratio

$$\text{Paired- } t = \frac{|d|}{SE}$$

$$\text{Paired- } t = 10.55$$

RESULT

This critical ratio, paired-t follows a distribution on with $n-1$ (i.e. 19) degrees of freedom. The 5% level is 2.093, 1% level is 2.861 and 0.1% level is 3.922 for 19 degrees of freedom. Since the calculated value is 10.55 which is greater than the table at 5% ($p < 0.05$). Hence, null hypothesis is rejected and the research hypothesis is accepted. This study provides evidence to say that, there is significant reduction in Hb % after the Ferrum Arsenicosum. Therefore, it is effective in treating Nutritional Anemia.

DISCUSSION

A study was conducted in the Garhwal Himalaya region for anaemic individuals for the improvement of nutritional requirements to reduce the prevalence of anaemia in that region. The effective measures include awareness about the essential nutrients to be included in diet along with the knowledge of anaemia. This study was compared with males and Females and assessed their Hb% by dietary assessment. ⁽¹⁶⁾ Further studies can be done with comparison of dietary supplement and Ferrum Arsenicosum, may show the potentiality of Ferrum Ars as a Remedy for Nutritional anaemia. In this study we have evidence-based effectiveness of Increase in Hb% with Ferrum-Ars. So, this study will be helpful for any comparative studies to be done in the future.

CONCLUSION:

This study is done as a part of current burden facing by young females. The socioeconomic status or lack of knowledge regarding nutritional deficiencies, many females are suffering with many disorders due to nutritional anemia. In our study 20-24yrs girls are screened out of which 20 students with no other complications were included in the study. Students who are having less than 11.6gm of Hb% was taken in the study. Where the study took for 6

weeks and all girls had a good improvement in Hb%.

Declaration by Authors

Ethical Approval: Approved

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. WHO: Nutritional Anaemia's: Tools for effective prevention and control. Geneva, Switzerland: WHO Document production services; 2017. Available from: <https://iris.who.int/bitstream/handle/10665/259425/?sequence=1>
2. Park.K. Park's textbook of Preventive and Social Medicine.26th ed. Jabalpur, M.P: M/s Banarsidas Bhanot; 2021.p. 720, 731, 733.
3. Shamah Teresa, Villalpando Salvador, Cruz Vanessa. International Encyclopedia of public Health: Anemia. 2nd ed. Mexico: Elsevier; 2017. Available from: <https://doi.org/10.1016/B978-0-12-803678-5.00018-7>
4. S. Kaur, P.R Deshmukh, B.S Garg. Epidemiological Correlates of Nutritional Anemia in Adolescent Girls of Rural Wardha. Indian Journal of Community Medicine. 2005 Feb 08; 31(4):p 255. Available from: https://journals.lww.com/ijcm/Abstract/2006/31040/Epidemiological_Correlates_of_Nutritional_Anemia.13.aspx
5. <https://pib.gov.in/PressReleasePage.aspx?PRID=1795421>
6. Baker S J, DeMaeyer E M. Nutritional anemia: its understanding and control with special reference to the work of the World Health Organization. National Library of Medicine, 1979 Feb; 32(2),368-417, Available from: <https://pubmed.ncbi.nlm.nih.gov/369352/>
7. Kotecha V Prakash. Nutritional Anemia in young children with focus on Asia and India. Indian Journal of Community Medicine, 2011 Jan-Mar; 36(1), 8-16. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3104701/>
8. Chaparro M camila, Suchdev S Parminder. Anemia epidemiology, pathophysiology, and etiology in low- and middle-income

- countries. National Library of Medicine, 2019 Apr 22; 1450(1), 15-31. Available from:
<https://pubmed.ncbi.nlm.nih.gov/31008520/>
9. Harper L James. Iron Deficiency Anemia. Medscape, 2023 Aug 23. Available from:
<https://emedicine.medscape.com/article/202333-overview?form=fpf>
 10. <https://fortification.fssai.gov.in/commodity?commodity=double-fortified-salt#:~:text=India's%20National%20Institute%20of%20Nutrition,provides%20continuous%20quality%20control%20support>
 11. <https://ods.od.nih.gov/factsheets/Iron-HealthProfessional/>
 12. J.T.Kent, Kent Repertory, Available from:
<http://www.homeoint.org/hidb/kent/f/ferr-ar.htm>
 13. John Hery Clark, A Dictionary of Practical Materia Medica, Vol-I, 36th impression 2020, B.Jain publishers. Pg.no-759.
 14. William Boericke, Pocket manual of Homoeopathic Materia Medica with Indian medicine and repertory, 9th Edition, Reprinted 2017, Indian books and Periodicals Publishers, Pg.no-953.
 15. Surekha T. Ferrum Group-Iron, Hard but Malleable. Asian Journal of homoeopathy, Nov-2015-Jan 2016, Pg.no-60.
 16. Aprajita S Mishra, Pramesh C Lakhera, Anjita Pandey, Assessment of Nutritional anaemia on the basis of dietary pattern, estimation among the population of garhwal Himalayan region, Journal of Family medicine and Primary care, Available from:
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8138402/>.

How to cite this article: T Surekha, Ch. Rambabu. Assessing the efficacy of Ferrum Arsenicosum mitigating nutritional anemia among young adolescent girls: a pilot study. *International Journal of Science & Healthcare Research*. 2023; 8(4): 289-293. DOI: <https://doi.org/10.52403/ijshr.20230441>
