



Iron Deficiency Anaemia: A Comprehensive Review and Its Homeopathic Treatment

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ABSTRACT

Iron Deficiency Anaemia (IDA) is the most common nutritional anaemia worldwide and a major public health concern, with 30% of the population being affected with this condition and particularly in developing countries. Although the most common causes of IDA are gastrointestinal bleeding and menstruation in women, decreased dietary iron and decreased iron absorption are also culpable causes. It results from inadequate iron availability for haemoglobin synthesis, leading to reduced oxygen-carrying capacity of the blood. The condition significantly impacts physical health, cognitive performance, and quality of life. Iron deficiency occurs in many chronic inflammatory conditions, including congestive cardiac failure, chronic kidney disease and inflammatory bowel disease. Conventional treatment involves iron supplementation and dietary correction, but side effects and poor compliance are common. Homeopathy, with its holistic and individualized approach, offers a complementary mode of management, addressing both the underlying cause and patient constitution. This article reviews the etiology, clinical aspects, diagnosis, and homeopathic treatment of iron deficiency anaemia.

Keywords: Iron deficiency Anaemia, Irritable Bowel diseases, Iron Metabolism, Iron absorption, Anaemia, Haemoglobin

Abbreviations: IDA: Iron Deficiency Anaemia

WHO: World Health Organisation

GI: Gastrointestinal

HB: Haemoglobin

ACD: Anaemia of Chronic Disease

INTRODUCTION

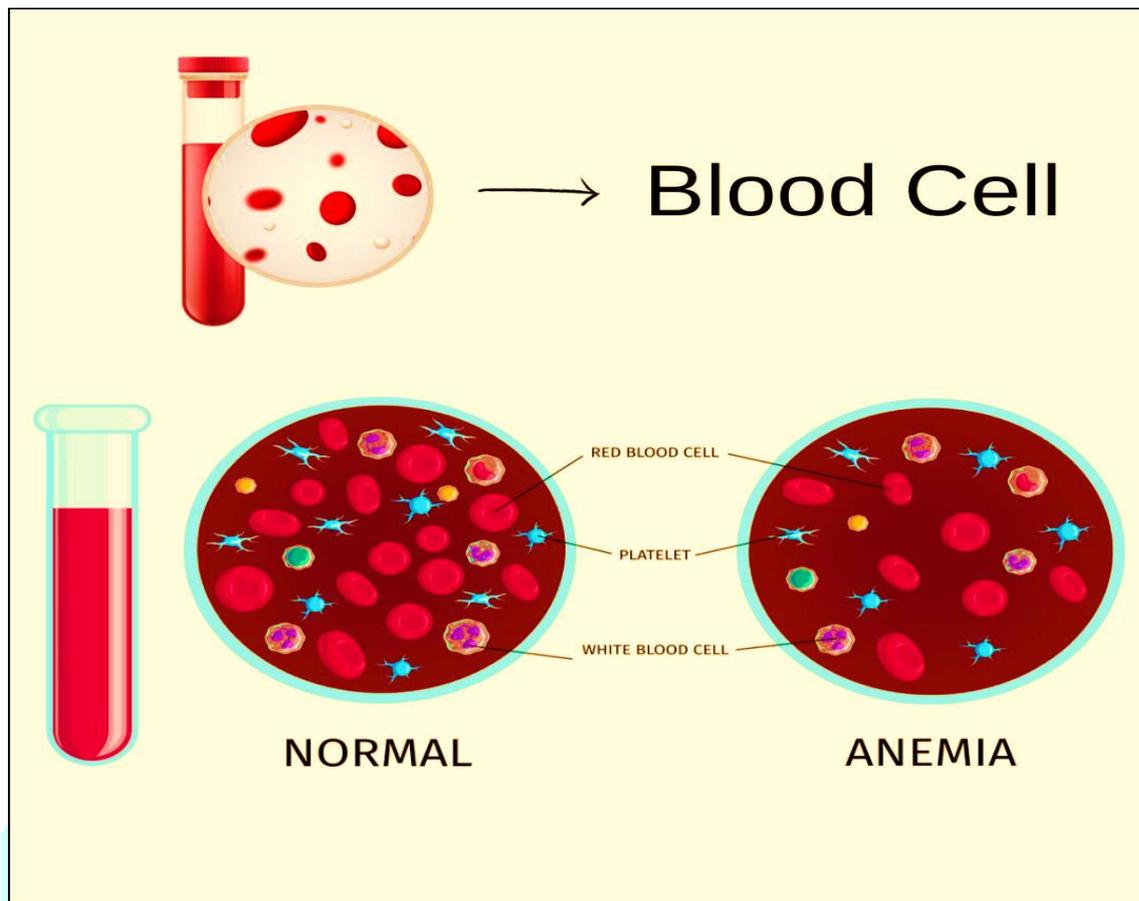
Diseases of blood covers a wide spectrum of illness ranging from anaemias, one of the commonest disorders affecting mankind, to relatively rare conditions such as Leukaemia's. The WHO has recognised iron deficiency anaemia (IDA) as the most common nutritional deficiency in the world, with 30% of the population being affected with this **condition**.⁽¹⁾ Although the most common causes of IDA are gastrointestinal (GI) bleeding and menstruation in women, decreased dietary iron intake and absorption are also culpable **causes**.⁽²⁾ Haemoglobin is the oxygen binding component of red blood cells. If the body has abnormal or insufficient red blood cells, or if the haemoglobin level is abnormal or low, the cells within the body will not receive enough oxygen, resulting in abnormal bodily conditions. In the general population, it is the most common blood condition. Any level less than 13 g/DL for men and 12 g/DL for women is regarded as abnormal. Iron deficiency is frequently not symptomatic or clinically noticeable and develops progressively over **time**.⁽³⁾ Iron accessibility to the tissues decreases as iron reserves are depleted, resulting in clinical anaemia. The estimated global anaemia prevalence is 24.8% (95% CI 22.9, 26.7%), affecting 1.62 billion people (95% CI 1.50, 1.74 billion).

Iron is one of the most common elements, accounting for around 5% of the earth's crust in the form of various mixed ores. Iron is a bio metal that has always been important, owing to its capacity to rapidly accept and release electrons by flipping between Ferrous (Fe^{2+}) and Ferric (Fe^{3+}) ions. The transfer of electrons between iron and donor/recipient molecules causes the body to perform various important activities. It functions as an oxygen transporter for tissues, a medium for electron transfer within cells, and an **integrated component**.⁽⁴⁾

There are several natural Homeopathic medicines that are of great help in the treatment of Anaemia. homeopathic medicines are prescribed by taking into consideration the peculiar characteristic symptoms of the patient. This is the key to finding the most suitable homeopathic medicine for any given case to bring recovery.

DEFINATION:

Anaemia refers to a reduction of red blood cell count or decreased haemoglobin level. Since the red cell production is reduced or the red blood cells are destroyed at a high rate, the result is weakness, fatigue, and various other symptoms. Anaemia, defined by the World Health Organization (WHO), is a haemoglobin concentration below 13 g/dl in men and below 12 g/dl in women. Among various types, Iron Deficiency Anaemia (IDA) accounts for nearly 50% of all cases globally. It remains a major health burden, especially in women of reproductive age, children, and the elderly.



EPIDEMIOLOGY & RISK FACTORS:

Anaemia is a global public health issue that affects both developing and wealthy countries, with serious implications for human health and social and economic development. It affects people at all stages of life, but it is more common among pregnant women and small children.⁽⁵⁾ The estimated global anaemia prevalence is 24.8% (95% CI 22.9, 26.7%), affecting 1.62 billion people (95% CI 1.50, 1.74 billion).

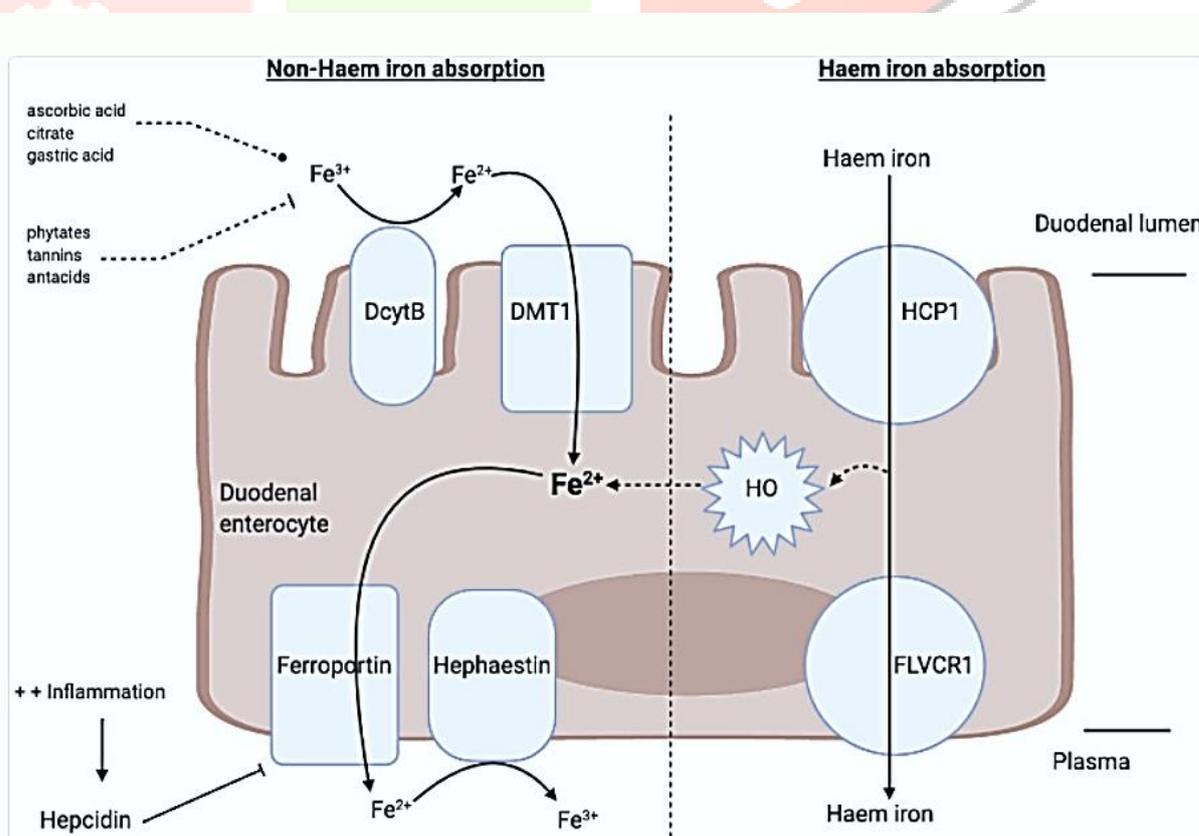
AETIOLOGY OF Iron Deficiency:

- **Deficient Intake:**
 - Low iron diet
- **Poor Absorption:**
 - In Presence of Wheat, eggs, soyabean
 - Diarrhea.
 - Vomiting.
- **Poor utilization:**
 - Infection
 - Chronic diseases.
- **Excessive Demand:**
 - Children 6 months to 2 years
 - Adolescents

- Females of child bearing age.
- **Blood loss:**
 - External Hemorrhage
 - Peptic ulcer
 - Hemorrhoids
 - Portal Hypertension.
- **Parasitic infestations:**
 - Ancylostomiasis

PATHOLOGY OF IRON DEFICIENCY ANAEMIA:

Iron is an essential element and is controlled primarily by dietary intake, intestinal absorption and iron recycling. Dietary iron can be found in two forms: haem and non-haem iron. Haem iron is easily absorbable and arises from haemoglobin (Hb) and myoglobin in the form of animal meat, poultry and fish. Non-haem iron is mostly found in plant food but is not as easily absorbable. Compounds such as phytate, oxalate, polyphenols and tannin, which are found in plants, diminish the uptake of non-haem iron, as do some drugs, such as proton pump inhibitors.⁽⁶⁻⁷⁾ Ascorbic acid, citrate and gastric acid, conversely, facilitate iron absorption.⁽⁸⁾ In a healthy diet, approximately 5–15 mg of elemental iron and 1–5 mg of haem iron are ingested daily although only 1–2 mg is ultimately absorbed into the intestine, predominantly in the duodenum and proximal jejunum.⁽⁹⁾



The two different iron absorption pathways. Non-haem absorption pathway (left): insoluble ferric iron (Fe^{3+}) is reduced to absorbable ferrous iron (Fe^{2+}), which is carried out by the enzyme duodenal cytochrome B (DcytB). The divalent metal transporter 1 (DMT1) imports Fe^{2+} across the apical surface and

into the cell, which can then be either stored as ferritin or exported into circulation through ferroportin. Prior to exiting the enterocyte, Fe^{2+} must be oxidised back to Fe^{3+} by hephaestin or ceruloplasmin. Haem absorption pathway (right): the haem carrier protein (HCP1) transports haem iron directly into the enterocyte. Once inside the enterocyte, haem iron can either be released into plasma via the haem exporter FLVCR1 or be converted back into Fe^{2+} via the haem oxidase (HO) enzyme. The ferroportin receptor then releases Fe^{2+} into the plasma. Hepcidin, a hepatic peptide hormone, controls ferroportin, the sole iron exporter, by promoting its endocytosis. Hepcidin production and circulation are regulated by plasma iron concentration and iron stores. Hepcidin is increased in the presence of inflammation, which then promotes the degradation of ferroprotein and subsequently impairs the exportation of cellular iron into plasma. Figure taken with permission from Kumar and Brookes. ⁽¹⁰⁾

CLINICAL FEATURES OF IRON DEFICIENCY ANAEMIA:

SYMPTOMS:

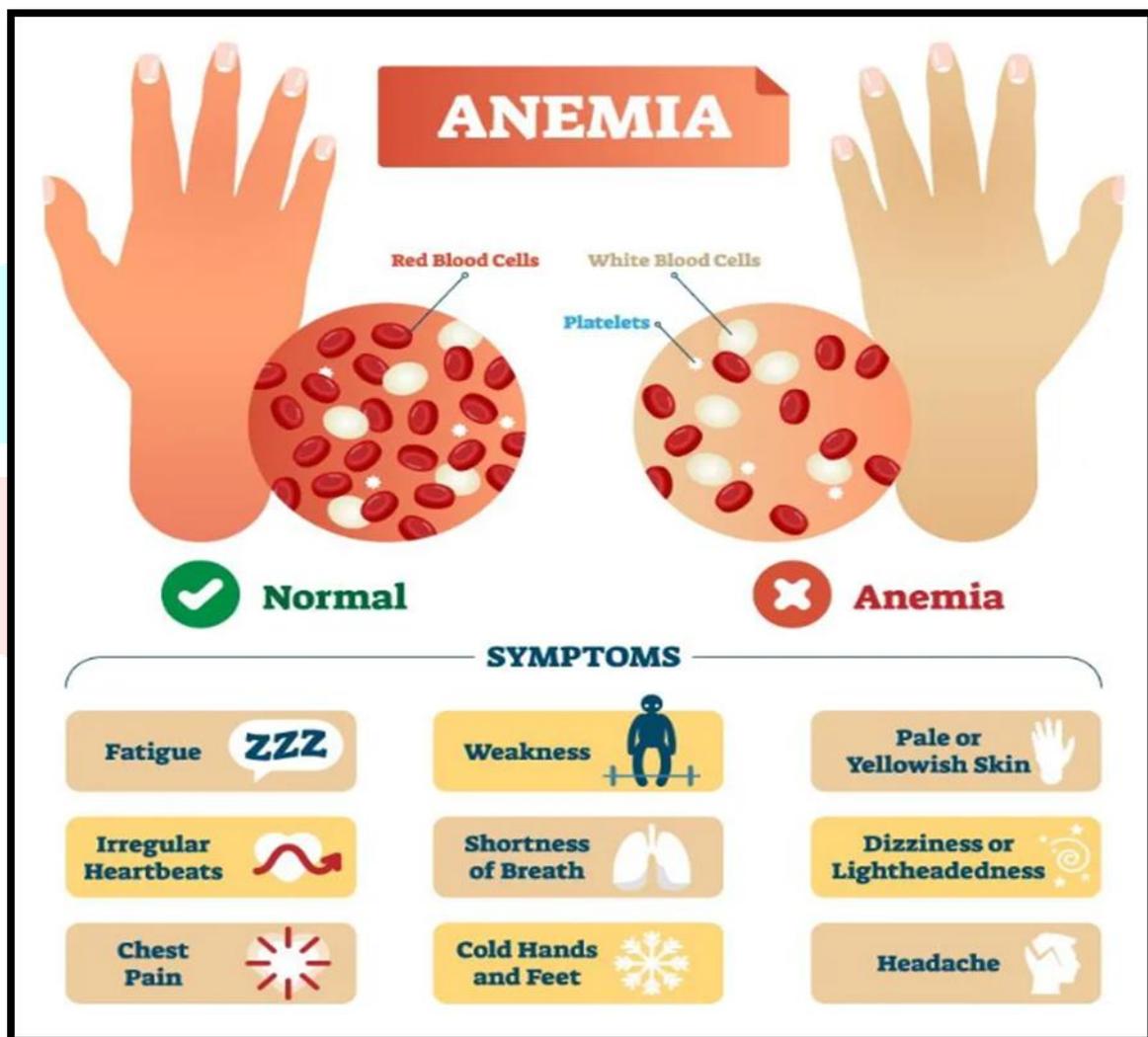
- Onset: insidious
- Lassitude
- Weakness
- Fatigue
- Headaches
- Body aches
- Precordial pain (Angina pectoris)
- Dyspnoea
- Palpitations
- Pain in abdomen
- Anorexia
- Pica
- Eructation's
- Sense of fullness after meals
- Amenorrhoea
- Hair loss
- Dizziness
- Numbness and tingling
- Lack of concentration
- Pruritus
- Loss of weight.
-

SIGNS:

1) ON GENERAL EXAMINATION:

- Pallor
- Skin: pale, dry and lustreless
- Hair: thin and lustreless
- Nails: brittle, platynchia (flat nails) and koilonychia (spoon-shaped nails).
- Oedema: b/l and Pitting
- Angular stomatitis
- Tongue: Smooth, bald, and pale
- Pulse: rapid
- B.P: low

2) ON CARDIAC EXAMINATION:



- Soft Systolic murmur at apex.

3) ON ABDOMINAL EXAMINATION:

- Spleen may be Palpable (Plummer- Vinson Syndrome)

4) CHRONIC IRON DEFICINECY AANEAMIA IS ASSOCIATED WITH:

- Koilonychia.
- Glossitis
- Dysphagia
- Splenomegaly

INVESTIGATIONS OF IRON DEFICINECY ANAEMIA:

Diagnostic criteria for iron deficiency anaemia

Serum markers	Diagnosis for IDA
Haemoglobin	<130 g/L males <120 g/L females <110 g/L in pregnancy
Ferritin*	<30 ug/L if no inflammation <100 ug/L if inflammation
Transferrin†	Raised
Total iron binding capacity	Raised
Iron	Reduced
Transferrin saturations	<20%
Mean corpuscular volume	Low

1.) BLOOD:

- HB%: variably reduced.
- RBC COUNT: low
- COLOUR INDEX: <1
- MCV: low (50-80 femtolitre)
- MCH: low (12-26picogram)
- MCHC: low (24-30 g/dl)
- PERIPHERAL SMEAR:
 - o Hypochromia
 - o Microcytosis
 - o Anisocytosis
 - o poikilocytosis

2.) BLOOD BIOCHEMISTRY:

- SERUM IRON: low (<60 mg/dl)
- IRON- BINDING CAPACITY: increased (>400 mg/dl)
- PLASMA FERRITIN: low (<10 mg/dl)

3.) BONE MARROW:

- Normoblastic hyperplasia.
- Frequent malformed cells.
- Haemoglobinisation, deficient in proportion to nuclear maturity.
- Microthromboblats numerous in severe cases.

4.) STOOL EXAMINATION:

- OVA of Ancylostoma may +ve.
- Amoebic cysts (amoebic colitis)
- Voluminous fatty stools (malabsorption.
- Occult blood (upper GIT BLEEDING).

5.) ENDOSCOPY:

- For evidence of peptic ulcer.

6.) PROCTOSCOPY:

- For evidence of Haemorrhoids and any malignancy.

7.) URINOLYSIS:

- For haematuria.

DIFFERENTIAL DIAGNOSIS OF IRON DEFICIENCY ANAEMIA:

1. Thalassemia (esp. β -thalassemia trait/major)
2. Anaemia of Chronic Disease (ACD)

3. Sideroblastic Anaemia

4. Lead Poisoning

5. Other Nutritional Anaemias

- Megaloblastic anaemia (B12/Folate deficiency) → Macrocytic, so helps exclude IDA (microcytic).
- Mixed deficiencies (B12 + iron) → May show dimorphic anaemia (microcytic + macrocytic cells together).

6 Copper Deficiency

7 Vitamin B6 (Pyridoxine) Deficiency

8 Chronic Blood Loss vs. Malabsorption

- IDA due to blood loss (GI bleed, menorrhagia, hookworm, hemorrhoids).
- Malabsorption (celiac disease, gastric surgery, IBD).

GENERAL MANGEMENT

- Correct and treat the underlying cause; i.e., Menorrhagia in women, gastrointestinal blood loss in all age groups including hookworm infestation, dietary deficiency and rarely malabsorption.
- Provide diet rich in IRON AND PROTEINS.
- Blood transfusion, if haemoglobin is < than 4g%.
- Iron preparation not to be taken along with meals containing wheat, eggs, and soyabean (as these interfere with iron absorption.)

PROGNOSIS

- Severity of anaemia reflects activity of underlying cause.

HOMOEOPATHIC MANAGEMENT:

The Homeopathic mode of treatment, with the use of medicines made of natural substances, is very effective in treating Anemia. The medicines are solely selected based on individual symptoms.

A. NUTRITIONAL DISORDERS:

- ALTERIS FARINOSA
- ALFAALFA
- ALUMINA
- AVENA SATIVA
- CALCAREA PHOSPHORICA
- CHINA
- FERRUM METALLICUM

B. HAEMORRHAGES:

- ARSENICUM ALBUM
- CHINA
- FERRUM PHOSPHRICUM
- LACHESIS MUTA
- PHOPHORUS

C. MENSTRUAL DERANGEMENTS:

- FERRUM METALLICUM
- GRAPHITES
- NATRUM MURIATICUM
- PULSATILLA
- SEPIA.

D. WORMS:

- CARBON TETRACHLORIDE
- CHELONE
- CINA
- CHENOPODIUM
- THYMOLUM.

1. Ferrum Metallicum: The persons needing Ferrum Met are weak with paleness, and have frequent false flushing's appearing at the slightest excitement. Vertigo, pulsating headaches and ringing in ears are also experienced by patients. Difficulty in breathing, shortness of breath with palpitations in heart are dominantly present in such patients, as is coldness of body. Homeopathic remedy Ferrum Met needs a special reference for its use in females who are anaemic due to excessive bleeding during periods. The blood flows abundantly and the periods last much longer than normal.

2. Aletris Farinosa: Homeopathic medicine for Anemia in women with extreme fatigue:

Aletris Farinosa is the best natural Homeopathic medicine for women suffering from Anemia with extreme weakness and fatigue. There is a marked weariness and tiredness all day in such patients. The energy level seems to be markedly reduced and the body feels powerless. Frequent episodes of faintness and vertigo are common and even the face appears very pale. Anemia in women due to repeated abortions is best treated with Homeopathic remedy Aletris Farinosa. Vaginal discharge due to Anemia can also be corrected with this Homeopathic medicine. Aletris Farinosa is also the ideal Homeopathic mode of treatment for women with Anemia due to abundant bleeding during periods.

3. China: one of the Best Homeopathic medicines for Anemia following excessive bleeding

Anemia due to extreme blood loss is best treated with natural Homeopathic medicine China. The bleeding can be the result of a traumatic injury, excessive bleeding in periods or bleeding from any part of body like throat, bowels, nose, etc. The person is exhausted and even fainting spells occur due to extreme anaemic conditions consequent to blood loss. Episodes of vertigo with marked weakness are also experienced. The body feels cold and pallor is marked. The face especially appears pale with sunken features. Homeopathic medicine China acts both as a haemorrhage controller as well as enhances the amount of blood after the bleeding episodes.

4. Natrum Mur: One of the best Homeopathic medicines for Anemia with weight loss

Natural Homeopathic medicine Natrum Mur acts very efficiently to control weight loss because of Anemia. The person appears very lean and emaciated with loss of flesh. The headache due to Anemia is also best treated with Natrum Mur. The headache is mainly bursting in character. Nausea and vomiting may accompany the pain in head. Natrum Mur is also the Homeopathic cure when anaemic patients experience palpitations. Natrum Mur has a great ability to control palpitations due to decreased blood. Anemia due to longstanding grief is also best treated with Homeopathic remedy Natrum Mur. There is also a marked desire for extra salt in persons needing Natrum Mur to cure Anemia.

5. Homeopathic treatment for Anemia due to nutritional disturbances

Alumina, Nux Vomica and Calcarea Phos are wonderful natural Homeopathic medicines for Anemia due to nutritional disturbances. Alumina is the best Homeopathic remedy when there is sluggishness of the gastric system and the person remains very constipated. The intestines are so sluggish that the stool is retained for many days together. The urge to pass stool is absent. Along with constipation, pica is dominant and there is a desire for chalk, coffee grounds and other indigestible things. The person also has sensitivity to cold air. The main symptom for using Homeopathic medicine Nux Vomica is also constipation and sensitivity to cold air. But the character of constipation is exactly opposed to Alumina. For using Nux Vomica, the constipation symptom is scanty stool with frequent ineffectual desire to pass stool. Acidity and heaviness in abdomen after eating is also marked. Calcarea Phos is the Homeopathic

remedy for children with Anemia and a weak digestive power. The abdomen is full of gas. Desire for salt or meat (especially smoked meat) is often noted. The child is also usually irritable and has weak bones.

6. Homeopathic medicine Ferrum Phos a haemoglobin enhancer

Ferrum Phos is the most frequently used natural Homeopathic medicine to increase the haemoglobin level. It can be safely used among people of all age groups. Even during Anemia in pregnancy, Ferrum Phos is a safe Homeopathic remedy though the dosage is to be properly handled by the physician during pregnancy. The skin appears pale in persons needing Ferrum Phos and they also experience palpitation of heart and weakness. The pulse rate is quickened. Vertigo and headache also appear as symptoms. Ferrum Phos is also the best Homeopathic remedy for controlling sweat in anaemic patients especially at night.

7. Homeopathic medicines for Anemia where pica is predominantly present

Alumina and Calcarea Carb are the natural Homeopathic medicines for anaemia that work well to control pica. Alumina is used when a person desires chalk or coffee/tea grounds or dry rice. Constipation is marked along with pica. Calcarea Carb is the Homeopathic medicine recommended when there is a desire for lime, chalk, and pencils. Craving for boiled eggs and increased sweat on head are important symptoms that if present add more weightage in selecting Calcarea Carb over Alumina.

8. Lecithinum

This remedy has action on blood and is usually given for anaemic individuals to increase the number of RBCs and amount of Hb. There will be mental exhaustion. The individual will be weak with shortness of breath, loss of flesh; will be forgetful, dull and confused. The headache in the occiput will be pulsating type and will crave for wine and coffee.

9. Pulsatilla nigricans

It is well known medicine for iron deficiency anaemia. Patient is mild, thirstless, aggravated by heat. Pulsatilla is the great antidote to iron, and hence is indicated in the anaemic condition produced by large or continued doses of it. The cause of the anaemia must be sought for, and if the case comes from allopathic hands it is safe to infer that much iron has been given and Pulsatilla will surely be the remedy. The pulsatilla patient feels better in the open air. Dizziness on rising, absence of thirst, and the peculiar disposition will lead to the remedy

Conclusion

Iron Deficiency Anemia (IDA) remains the most common nutritional deficiency worldwide, primarily caused by chronic blood loss, poor dietary intake, or malabsorption. It manifests clinically with fatigue, pallor, weakness, pica, brittle nails, glossitis, and reduced work capacity. Early diagnosis through clinical evaluation and laboratory parameters such as **low haemoglobin, low MCV, low MCH, low ferritin, and high TIBC** is essential for effective management. From the **homeopathic perspective**, treatment aims

not only at correcting anaemia but also at addressing the **underlying constitutional tendency** and associated symptoms of the patient. Homeopathic remedies have been found useful in improving haematopoiesis, correcting assimilation, and reducing the tendency toward recurrent blood loss. Remedies like **Ferrum Metallicum, Ferrum Phosphoricum, China, Calcarea phosphorica, Natrum muriaticum, Pulsatilla, Phosphorus, and Sepia** are frequently indicated. Individualized prescription ensures holistic and long-term benefits.

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