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A Review Article on Anaemia

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ABSTRACT
Anemia is a common disease of malnutrition and global health issues affecting developing and developed countries, posing serious health risks and problems for social and economic development. According to the WHO (2004), anemia affects about a third of the world's population due to a lack of nutritious food. For this reason, the purpose of this review is to learn more about anemia, including its types, causes, symptoms, and treatment, and to inform the public about the disease.

KEY WORDS: ANAEMIA, MALNUTRITION, NUTRITION FOOD, IRON DEFICIENCY ANAEMIA AND HAEMOGLOBIN.

INTRODUCTION

Anemia causes a person to appear pale. A person with a blood disorder is at greater risk for needing blood transfusions after surgery (Chaparro CM 2019). Anemia, RBC diet, and an increase in RBC deficiency are common causes of anemia. Trauma or internal bleeding are the most common causes of blood loss. Increased deterioration of RBCs can be caused by genetic problems such as sickle cell anemia, diseases such as malaria and autoimmune diseases (Huang Y 2019).

Anaemia is also classified depending on the size of the RBC and amount of haemoglobin present in each cell.

Smaller cells: Microcytic anaemia
Larger cells: Macrocytic anaemia
Normal cells : Normocytic anaemia

Anaemia occurs if the haemoglobin count is less than the normal range. The normal range varies depending on sex and age. Normal haemoglobin count in men ranges from 13 – 14 gm/dL. If the haemoglobin count is less than this range, the person is suffering from anaemia. The normal range in women is 12 - 13 gm/dL, less than which causes anaemia. The cause is then determined after further testing. Certain groups of individuals, such as pregnant women, are prescribed iron supplements for prevention. Blood transfusion is the standard treatment in severe cases. Medicines stimulating RBC production are only recommended in those with severe anaemia. Anaemia is graded on the basis of the haemoglobin count, thus giving an idea on the severity of the condition (Neufeld LM 2019).

Grading:
Mild Anaemia :Haemoglobin count 8 – 12 gm/dL
Moderate Anaemia:Haemoglobin count 5 – 8 gm/dL
Severe Anaemia : Haemoglobin count less than 5 gm/dL

The most common anemia is anemia, affecting about a third of the world's population. About 1 billion people

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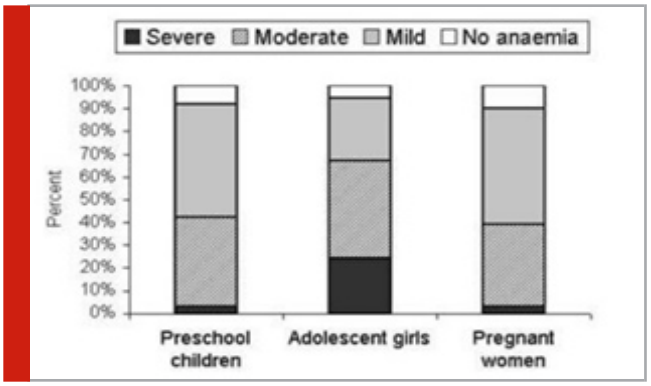
suffer from iron deficiency anemia. Iron deficiency shortages caused an estimated 183,000 deaths in 2013, down from 213,000 in 1990. It affects women more than men, especially during pregnancy, as well as children and the elderly. According to the WHO, India has the highest rate of anemia in South Asian countries (Nielsen OH et al., 2018).



Types of Anaemia: Anemia arises as a result of a variety of defects in RBC such as impaired production as seen in aplastic anemia, impaired maturation deficit in megaloblastic anemia, errors in hemoglobin synthesis characterized by iron deficiency anemia, genetic defects of hemoglobin maturation manifested in thalassemia, synthesis of abnormal hemoglobin detected in hemoglobinopathies, sickle cell anemia and thalassemia and weight loss of RBC's are in haemolytic anaemias.

Iron-Deficiency Anaemia: IDA is one of the most common anaemia in world as well as in India. It is a condition in which there is deficiency of iron in the bloodstream. Haemoglobin, a protein is present in RBC which carries oxygen throughout the body. The body needs iron to make haemoglobin. Without enough iron, less haemoglobin and fewer RBCs are made, leading to anaemia. Iron is essential for the various functions of the human body, especially in the synthesis of hemoglobin. Adolescents and women are more likely to develop anemia (Prema R 1992).

Causes
- Diets low in iron
- Inability to absorb iron
- Abnormalities of GIT (Gastrointestinal tract)
- Internal bleeding
- Pregnancy, menopause, blood loss due to periods
- Excessive blood donation

Symptoms
- Tiredness,
- Irritability
- Feeling faint
- breathlessness
- Headache
- Palpitation
- Sore or swollen tongue, altered taste
- Pregnancy anemia increases the risk of complications for both mother and baby, including low birth weight, premature birth, and postpartum depression. Anemia in the newborn can be caused by the lack of iron reserves in the baby.

In addition, vitamin C helps to absorb iron in the body. Iron diet treatment and iron supplements often make anemia better. If you are taking iron pills, your doctor may recommend taking them along with a source of vitamin C, such as a glass of orange juice or an orange fruit.

Pernicious Anaemia: (Pernicious means destructive or injurious)
Once thought to be a deadly disease, this type of anemia was given the name "dangerous." Vitamin B-12 injections or B-12 oral supplements can now be used for treatment.

Causes
- Inadequate diet
- Vitamin B12 deficiency
- Intrinsic Factor deficiency in the body
- Gastrointestinal tract infection

Symptoms
- Fatigue
- Breathlessness
- Pale skin
- Chest pain
- Poor coordination, balance difficulties
- Slow reflexes
- Depression

Pernicious Anaemia caused due to inadequate diet can be prevented or treated by having a diet rich in vitamin B-12.Food items like meat, fish, eggs, milk, yoghurt, cheese etc. are rich in Vitamin B-12. Certain medicines are given which increases the absorption of vitamin B-12.

Haemolytic Anaemia: Haemolytic anemia is a disease in which red blood cells (RBCs) are separated from the blood until they reach the end of their natural life. People of all ages, races, and genders are affected by this type of anemia. Sickle cell anemia, Thalassemias, and hereditary spherocytosis are all examples of this inherited form of anemia. RBCs can also be damaged by certain diseases and chemicals, which has led to the end of haemolytic anemia. The most serious form of haemolytic anemia is caused by receiving a transfusion of red blood cells of the wrong blood type.

Symptoms
Some symptoms of haemolytic anaemia are the same as those for other forms of anaemia.
- Jaundice
- Fatigue
- Shortness of breath, dizziness, and headaches are all symptoms of a low RBC count, as are cold hands and feet, pale skin, and chest pain.
- Abdominal pain

Blood transfusions, drugs, blood and bone marrow transplants, lifestyle changes, and surgery are all treatments for haemolytic anemia. The spleen may need to be removed in the worst cases. In fact, RBCs are missing. The canopy can be removed to reduce the destruction of RBCs.

Sickle cell Anaemia: The RBCs in the body of Sickle Cell Anemia are scissors ("C" - shaped). It contains abnormal hemoglobin, which gives it the shape of a scissors and makes it harder to pass through blood vessels. Outbreaks appear to be exacerbated during pregnancy and in children. Blocked blood vessels cause pain, which can lead to serious infections and damage to organs. Sick cells have a life span of 10 to 20 days, and the body cannot produce enough RBCs to replace those that die, leading to blood loss.10.

Symptoms
Sickle cell anemia is an incurable disease inherited, which means it is passed down from generation to generation.

Symptoms include
- Gets tired quickly
- Pale skin
- Breathlessness
- Dizziness
-

Thalassaemia: Thalassemia is a blood disorder in which the body produces unhealthy RBCs and low hemoglobin. Alpha and beta thalassemia are the two most common types of thalassemia. Alpha large thalassemia, also known as hydrops fetal, is a moderate form of alpha thalassemia, while major beta thalassemia, also known as ooley's anemia, is a serious form of beta thalassemia. Men and women alike are affected by thalassaemias, which is more common in Italy, Greek, Middle East, Asia, and Africa.

RBC hemoglobin is made up of two types of protein chains: alpha and beta globin. RBCs do not produce well if your body does not produce enough of these protein chains, so you cannot store enough oxygen. The development of hemoglobin chains is controlled by genes. When these genes are absent or altered, thalassemia develops. Thalassemia is a genetic disorder that is passed on from generation to generation.

Symptoms
- Mild anemia may occur in people with alpha or beta thalassaemia.
- Anemia is mild to moderate in people who have beta thalassaemia intermedia.
- Pale skin tone
- Urine that is dark in color
- Milestones that have been delayed
- Jaundice, splenomegaly, and hepatomegaly are all symptoms of liver disease.
- Appetite problems
- Problems with the bones.

Aplastic Anaemia: Aplastic anemia is a blood disorder in which the bone marrow fails to produce enough new blood cells, leading to a variety of health conditions such as arrhythmias, enlarged heart, heart failure, infection and bleeding.

Causes
- Although radiation and chemotherapy are effective against cancer cells, they can also damage healthy cells, such as bone marrow stem cells.
- It is possible to fix this by avoiding contact with these chemicals.
- Immune Deficiency Syndrome - Stem cells in your bone marrow can be involved in the immune system when your immune system destroys healthy cells.

Symptoms
- Pale skin
- Fatigue
- Shortness of breath
- Dizziness
- Headache
- Chest pains

Treatment includes transfusion of blood, bone marrow stem cell transplants, and medications. These treatments are useful for preventing or limiting complications, relieving symptoms, and improving quality of life.

Causes of Anaemia: A healthy diet is always what gives you enough nutrients to meet your body's needs. Therefore, a balanced diet is sufficient to prevent anemia. The main cause of anemia is anemia, folic acid, and iron-rich foods. Anemia is common in children due to low iron content at birth, low iron content in breast milk, and low iron intake in the diet during childhood and adolescence.

Nutritional Treatment of Anaemia: Anemia can be treated by simply looking at how much food we help produce hemoglobin. Generally, to combat anemia, people should be aware of the importance of iron, copper, zinc, folic acid, vitamin B-12, and protein. Treatment of anemia requires a combination of iron and vitamin B.

Vitamin B
- Vitamin B12 supplements are used to treat acute anemia.
- Meat such as beef, liver, poultry and fish, as well as eggs, milk, yoghurt, and cheese, are high in B-12.
- Soy drinks and vegetable burgers also contain vitamin B-12.17

Folic Acid
- Folic acid is a form of vitamin B that the body needs to produce and maintain new cells.
- Folic acid is extremely beneficial for pregnant women because it reduces the risk of anemia and thus contributes to the healthy growth of the fetus.

Vitamin C

- Vitamin C-rich foods include vegetables and fruits, especially citrus fruits. Oranges, lemons, lemons, lemons, mandarins, tangerines, and other citrus fruits are examples.
- Vitamin C is also found in fruits such as kiwis, strawberries and cantaloupes.19

Foods which are helpful against Anaemia20

Fruits

- When treating anemia, iron-rich fruits such as apples, strawberries, plums, bananas, lemons, grapes, raisins, oranges, figs, and carrots are commonly recommended.

Honey

- Iron, copper, and manganese are abundant in honey.
- As a result, by assisting in haemoglobin synthesis, it is a potent tool against anemia.

Meats

- Anemia may be treated with red meats such as liver.
- Anemia may also be treated with eggs, fish, and oysters.

Vegetables

- Iron-rich vegetables, full of energy including lettuce, beets, broccoli, spinach, fenugreek, and celery, among others, will help treat anemia effectively.
- Beetroot juice of iron-rich vegetable juice can help with fatigue and weakness in people with blood disorders.

Legumes And Nuts

- • Pulses, whole grain cereals, almonds, dry dates, peanuts, and walnuts are examples of legumes and nuts that can help with anemia.

Many studies reflected on anaemia and related complications21-23. Pareek et. al. reported on correlation between nephropathy and ophthalmic complications in cases of sickle cell anemia24. Studies on causes of anaemia in pregnancy were reported25,26. Related studies from Global Burden of disease were reviewed27-29. Khatib et. al. reported on causal chain analysis and health economic modelling of childhood anaemia interventions in developing countries30.

CONCLUSION

Anemia is one of the most common blood diseases, which can be inherited, caused by our immune system, or caused by malnutrition. On the other hand, it can be avoided if other precautions and precautions are taken. If you experience any of the above symptoms, you should seek immediate medical attention and consult a doctor. Anemia should be diagnosed and treated as soon as possible to produce a healthy generation. That is, if everyone works together, the number of people with anemia may decrease. In other words, living a safe life contributes to happiness.

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