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Perspective

Causes, Signs and Symptoms of Hemolytic Anemia

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DESCRIPTION

Hemolytic anemia is a type of anemia caused by hemolysis, the abnormal destruction of Red Blood Cells (RBCs) in the blood vessels or elsewhere in the human body. It most commonly occurs in the spleen, but it can also occur in the reticle endothelial system or mechanically damage to the prosthesis. Hemolytic anemia accounts for 5% of all existing anemias. It has many potential consequences, from common symptoms to life-threatening systemic effects. The general classification of hemolytic anemia is either intrinsic or extrinsic. Treatment depends on the type and cause of hemolytic anemia. Symptoms of hemolytic anemia are similar to other forms of anemia, but in addition, the breakdown of red blood cells causes jaundice and carries the risk of certain long-term complications such as gallstones and pulmonary hypertension.

CAUSES

They can be categorized by either endogenous hemolytic if the cause is related to the Red Blood Cells (RBC) or the extrinsic if the non-RBC factor is dominant. Intrinsic effects include coping with RBC protein problems and oxidative stress, while external factors include immune attacks and micro vascular angiopathy that mechanically damage RBC during circulation.

Intrinsic causes

Hereditary hemolytic anemia can be caused by:

• Defective red blood cell membrane production, such as hereditary spherocytosis and hereditary elliptocytosis.

• Defects in hemoglobin production such as thalassemia, sickle cell anemia, and congenital red blood cell dysplastic anemia.

• Defects in erythrocyte metabolism such as glucose-6-phosphate dehydrogenase deficiency and pyruvate kinase deficiency.

• Wilson's disease rarely occurs in hemolytic anemia without excess circulating inorganic copper that destroys red blood cells (although the mechanism of hemolysis is still unknown).

Extrinsic causes

• Acquired hemolytic anemia can be caused by immune causes, drugs, and a variety of other causes.

• Immune-mediated causes are transient factors such as mycoplasma pneumonia infection (cold agglutinin disease) or autoimmune diseases such as autoimmune hemolytic anemia (systemic erythema, rheumatoid arthritis). Permanent factors such as (more common in diseases such as illness) lymphoma and chronic diseases.

• One of the causes of hypersplenism (increased splenic activity), such as portal hypertension.

• Acquired hemolytic anemia can also occur as a result of burns and certain infections (such as malaria).

• Paroxysmal Nocturnal Hemoglobinuria (PNH), sometimes referred to as Marchiafava-Micheli syndrome, is a rare, potentially life-threatening blood characterized by complement-induced intravascular hemolytic anemia. It is a disease.

• Lead poisoning in the environment causes non-immune hemolytic anemia.

• Similarly, poisoning with arsine or stibine also causes hemolytic anemia.

SIGNS AND SYMPTOMS

Symptoms of hemolytic anemia are similar to the general signs of anemia. The common signs and symptoms are: fatigue, paleness, shortness of breath, tachycardia. In young children, all forms of anemia can cause failure to thrive. In addition, hemolysis-related symptoms such as chills, jaundice, dark urine, and enlarged spleen may occur. Certain aspects of the medical history may suggest causes of hemolysis, such as: drugs, side effects of drugs, autoimmune disorders, blood transfusion reactions, presence of artificial heart valves, or other medical conditions.

Chronic hemolysis leads to increased secretion of bilirubin into the bile ducts, which can lead to gallstones. Continued release of free hemoglobin is associated with the development of pulmonary hypertension (increased pressure in the entire pulmonary artery). This in turn leads to episodes of fainting, chest pain, and progressive shortness of breath. Ultimately, pulmonary hypertension causes right ventricular heart failure, the symptoms of which is peripheral edema (accumulation of fluid in the skin of the legs) and ascites (accumulation of fluid in the abdominal cavity).

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