Aplastic Anemia

Human blood comprises 55% plasma and 45% red blood cells, white blood cells, and platelets. The essential role of producing these vital blood cells lies within the bone marrow, located at the core of our bones. Unfortunately, a condition known as aplastic anemia can occur when the bone marrow fails to generate these essential blood cells. Drawing a parallel to barren land yielding no crops, aplastic anemia halts the generation and production of blood cells within the bone marrow.

While certain causes of this disease have been identified, a significant proportion of patients (approximately 80 to 90%) remain without a known cause. Among the established triggers are chemotherapy drugs used in cancer treatment, certain medications, exposure to radiation, various viral infections, and genetic disorders such as Fanconi anemia. However, for many patients, the underlying cause of this condition remains elusive, leading to what is termed idiopathic aplastic anemia.

Aplastic anemia can manifest at any age, but it is most commonly diagnosed in individuals under thirty years old. In India alone, around 6 to 8 thousand people are affected by this disease each year. Individuals with aplastic anemia may experience weakness, breathlessness, and chest tightness due to anemia. Additionally, the reduced number of white blood cells weakens the immune system, making patients susceptible to infections and fever. When platelet levels drop, visible symptoms like red or black dots under the skin, nosebleeds, and bleeding gums may arise. A simple blood test can reveal decreased levels of these three crucial blood components.

Confirming the diagnosis of aplastic anemia requires a bone marrow examination. The disease presents itself in three forms – non-severe, severe, and very severe. Patients with non-severe forms can often live for several years without treatment, while those with severe forms face the possibility of succumbing to the disease within months. Only a small percentage of patients (10%) experience spontaneous resolution of the condition.

Because of severe anemia, these patients often require frequent blood transfusions. Similarly, when platelet counts drop below 20 thousand, platelets must be transfused to prevent bleeding. However, obtaining white blood cells from donors isn't feasible since their lifespan is short. Drugs like G-CSF are not useful due to bone marrow failure. As a result, infections necessitate the use of antibiotics to combat bacteria and antifungal drugs to address fungi, though these treatments only offer temporary relief.

To achieve a complete recovery, there are two primary approaches. The first is Bone Marrow Transplantation, the most effective treatment for patients under forty with an HLA-matched sibling as a donor. This treatment provides a complete cure for approximately 75% of patients, while the remaining 25% may face side effects or treatment failure which may prove to be

fatal. For patients above forty or those without an HLA-matched donor, ATG (Antithymocyte Globulin) and Cyclosporine drugs can be given. It may take three to six months to observe the effects of this treatment, with around 65% of patients responding positively to ATG therapy. If no response occurs after six months, a second attempt at ATG therapy or a non-family donor bone marrow transplant may be considered. Recently, the drug Eltrombopag has become a common choice for aplastic anemia treatment.

Both ATG therapy and bone marrow transplantation are expensive treatment options. Alternatively, if these are not feasible, androgens like Danazol, combined with Cyclosporine, can be administered to patients with aplastic anemia as an attempt to cure the disease. However, such treatments take a significant amount of time to show results, often requiring six to eight months. This treatment is not as effective as standard therapies i.e. ATG and BMT.

Individuals with this disease have compromised immunity, necessitating precautions to avoid infections, such as using filtered water and consuming properly cooked food. While some find Amritavalli stem juice beneficial, patients who haven't undergone ATG or bone marrow transplantation may consider using this remedy.

It is highly unlikely that aplastic anemia is an inherited condition or transmitted from one person to another. Researchers worldwide are continuously studying various drugs to treat this condition, offering hope for the availability of new treatment options in the near future.

Considering that aplastic anemia treatments often require substantial amounts of blood and platelets, the support of the general public in donating blood is crucial in assisting these patients. For any additional questions or concerns beyond the provided information, patients are encouraged to reach out to their medical team.

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