

AN OVERVIEW: TREATMENT OF APLASTIC ANAEMIA

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INTRODUCTION

Aplastic anaemia is an acute or chronic rare blood disorder that can occur in any age groups. Production of new blood cells occurs in the stem cells of bone marrow. In the person with aplastic anaemia, the stem cells are damaged and the body stops producing enough blood cells i.e., red blood cells, white blood cells, platelets. As a result of not enough blood cells in the body, the skin becomes pale in colour. The incidence of frequent and prolonged infections occurs in common due to the reduction in the count of white blood cells. Shortness of breath, irregular heart beat and headaches occur due to the less count of healthy oxygen carrying blood cells in the circulation. Prolonged bleeding from wounds, nose bleeds and bleeding gums is observed as a result of less count of blood platelets in the body. Aplastic anaemia might be an autoimmune disorder, where the body's own immune system attacks the stem cells of bone marrow.

The other factors that might cause aplastic anaemia are radiation and chemotherapy treatments, exposure to toxic chemicals such as benzene, misuse of antibiotics, viral infections and pregnancy. Sometimes, there won't be any cause for this rare disease to appear (idiopathic aplastic anaemia).

Blood tests determine the count of all the three types of blood cells. In aplastic anaemia the blood cells count will be very low compared to a normal individual. A bone marrow biopsy is performed. The sample collected from the hipbone is examined under an electron microscope to rule out any other blood disorders. Less count of blood cells in the bone marrow sample confirm the diagnosis of aplastic anaemia. The treatment for aplastic anaemia depends on the

severity of the condition. Depending on the age of the patient, blood transfusion, bone marrow transplantation and medications are prescribed. Blood transfusions help relieve anaemia and prevent excessive bleeding problem. The accumulation of excess iron in the body needs to be treated with medication and immunosuppressant's are to be used to prevent the body developing antibodies against the transfused blood.

Stem cell transplantation is one of the successful treatment options for the patients with severe aplastic anaemia, only if a successful donor is found. The healthy stem cells from the donor are injected into the patient intravenously. The stem cells settle in the cavities of bone marrow and starts producing new blood cells. The patient is put on immune suppressants and other medications to minimize the risk of transplant rejection.

When the aplastic anaemia is due to autoimmune disorder, immune suppressants are prescribed. Cyclosporine and anti-thymocyte globulin are used together to suppress the immune cells that damage bone marrow tissues. Corticosteroids are used in combination with these drugs. But these drugs weaken the immune system. There are some possibilities for aplastic anaemia reoccur when the drugs are discontinued. Antibiotics and antivirals are used to prevent infections due to the already weakened immune system. Bone marrow stimulant drugs such as sargramostim, filgrastim, pegfilgrastim, epoetin alfa and eltrombopag along with growth factors are used to induce growth of new blood cells in the bone marrow. In the pregnancy induced aplastic anaemia, the condition improves once the pregnancy comes to an end.