

## A note on blood cancer: Polycythemia vera.

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### Description

PV is a stem cell condition that shows as a hyperplastic, malignant, and neoplastic marrow disorder. Because of unregulated red blood cell production, the most noticeable sign is a high absolute red blood cell mass. This is accompanied by increased production of white blood cells (myeloid) and platelets (megakaryocytic), which is caused by an aberrant clone of hematopoietic stem cells that is more sensitive to various growth stimuli for maturation.

### Causes

Polycythemia Vera (PV), commonly known as primary polycythemia, is a kind of polycythemia. PV is caused by a mutation, or alteration, in the JAK2 gene in the body. The JAK2 gene produces a protein that aids in the production of blood cells. PV isn't usually inherited, meaning it isn't passed down through the generations from parents to children. However, in some families, the JAK2 gene may have a tendency to mutate.

Another type of polycythemia is secondary polycythemia, which is a condition caused by long-term exposure to low oxygen levels. A prolonged absence of oxygen can lead your body to produce more of the Hormone Erythropoietin (EPO). EPO levels that are too high can cause our body to produce more red blood cells than usual. As observed in PV, it results in thicker blood. Secondary polycythemia can develop in people who have significant heart or lung illness. People who smoke, work or live at high elevations for long periods of time, or are exposed to high levels of carbon monoxide are also at risk.

### Signs and symptoms

Headaches, dizziness, and weakness, to name a few symptoms, Breathing difficulties and shortness of breath while lying down. Due to an enlarged spleen, you may experience pressure or fullness on the left side of your abdomen (an organ in the

abdomen), Blind spots, double vision, or fuzzy vision. Itching all over (particularly after a hot bath), a flushed face, and a burning sensation on your skin are all symptoms (especially your hands and feet). Gum bleeds and a small cut causes a lot of bleeding. Weight loss that isn't explained, Tiredness (tiredness), Sweating excessively, Swelling of a single joint, commonly the big toe, that is quite painful (called gouty arthritis).

### Treatment

PV (Polycythemia Vera) is a disease for which there is no cure. Treatments, on the other hand, can aid in the management of the condition and its complications. Procedures, medications, and other approaches are used to treat PV. To control the condition, you may require one or more therapies. PV treatment aims to control symptoms while also lowering the risk of consequences, particularly heart attack and stroke. PV therapies diminish the number of red blood cells and the amount of haemoglobin (an iron-rich protein) in the bloodstream to accomplish this. This brings your blood thickness closer to normal. Blood with a typical thickness passes through the blood vessels more easily. This lowers the risk of blood clots forming and causing a heart attack or stroke. Normal blood thickness also ensures that your body receives adequate oxygen.

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