Polycythemia run in families. in some of

Science, Genetics

Polycythemia Vera DescriptionCausesSymptomsTreatmentMaterialSources Desription of Polycythemia Vera Polycythemia vera (pol-e-sy-THEE-me-uh VEER-uh) is a slow-growing blood cancer in which bone marrow creates an excessive amount of red blood cells (RBC). These excess cells thicken the blood, therefore slowing the flow to parts of the body. These cell also lead to various complications, such as blood clots, which can lead to a heart attack or stroke. Polycythemia vera is not a common circulatory system disese. The disease usually develops in a slow manner and there is a chance than an individual may have it for years without even knowing.

The condition is often discovered when an individual gets a blood test for another reason. Without proper treatment, polycythemia vera may be life-threatening, but medical care can help ease signs, symptoms, and complications of the disease, a primary cause of the life-threatening nature of polycythmia vera. Over time, there are some cases wherein there exists a risk of developing into more-serious blood cancers, such as myelofibrosis or acute leukemia.

Causes of Polycytemia Vera According to Genetics Home Reference: “ Most cases of polycythemia vera are not inherited. This condition is associated with genetic changes that are somatic, which means they are acquired during a person’s lifetime and are present only in certain cells. In rare instances, polycythemia vera has been found to run in families. In some of these families, the risk of developing polycythemia vera appears to have an autosomal dominant pattern of inheritance. Autosomal dominant inheritance means that one copy of an altered gene in each cell is sufficient to increase

the risk of developing polycythemia vera, although the cause of this condition in familial cases is unknown.

In these families, people seem to inherit an increased risk of polycythemia vera, not the disease itself.” Polycythemia vera is a constituent of a group of blood cancers known as myeloproliferative neoplasms. The disease occurs when a mutation in a gene presents a problem with red blood cell production. In normal cases, the body has a regulation mechanism for the number of each of the three types of blood cells a person possesses – red blood cells, white blood cells and platelets. In the case of polycythemia vera, the bone marrow generates an excess of some blood cells, most especilaly red blood cells. Mutation that causes polycythemia vera is thought to affect a protein switch that serves as the stimulus to signal the blood cells to grow. Spefically, it is a mutation in the protein Janus kinase 2, commonly reffered to as JAK2.

Symptoms of Polycythemia Vera Symptoms of Polycythemia Vera Headache WeaknessFatigueFevers Dizziness Blurred vision Shortness of breathExcessive sweatingUnexplained weight lossBleeding or bruising, usually minorPainful swelling of one joint, often the big toeNumbness, tingling, burning or weakness in your hands, feet, arms or legsItchiness, especially following a warm bath or showerA feeling of fullness or bloating in your left upper abdomen due to an enlarged spleen Treatment of Polycythemia Vera Tests for Polycythemia VeraRed blood cell massVitamin B12 level Bone marrow biopsySerum uric acid Erythropoietin levelPlatelet aggregation testLactate dehydrogenase (LDH)Leukocyte alkaline

phosphataseComprehensive metabolic panelOxygen saturation of the bloodGenetic test for the JAK2V617F mutationComplete blood count with differential According to Medline Plus, the process of treatment is as follows: The goal of treatment is to reduce the thickness of the blood and prevent bleeding and clotting problems. A method called phlebotomy is used to decrease blood thickness. One unit of blood (about 1 pint, or 1/2 liter) is removed each week until the number of red blood cells drops. The treatment is continued as needed.

Medicines that may be used include: 1. Hydroxyurea to reduce the number of red blood cells made by the bone marrow. This drug may be used when the numbers of other blood cell types are also high. 2. Interferon to lower blood counts. 3. Anagrelide to lower platelet counts. 4.

Ruxolitinib (Jakafi) to reduce the number of red blood cells and reduce an enlarged spleen. This drug is prescribed when hydroxyurea and other treatments have failed. 5. Taking aspirin to reduce the risk of blood clots may be an option for some people. But, aspirin increases the risk of stomach bleeding. 6. Ultraviolet-B light therapy can reduce the severe itching some people experience.

Additional Resources Citation of Sources Circulatory system diseases | Health and medicine | Science. (n. d.). Retrieved December 15, 2017, from https://www.

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