

PNH Fact Sheet

Paroxysmal Nocturnal Hemoglobinuria (PNH) is an ultra-rare, progressive and life-threatening disease characterized by hemolysis, or the destruction of red blood cells.^{1,2} Excessive hemolysis in patients with PNH can lead to a variety of major health problems such as thromboses (formation of blood clots), pulmonary hypertension and damage or failure of organs such as the brain, liver, gastro-intestinal system and kidneys.¹⁻⁴ Patients also experience a variety of symptoms that can interfere with quality of life, including abdominal pain, difficulty swallowing, poor physical function, shortness of breath, erectile dysfunction and debilitating fatigue.^{4,5}

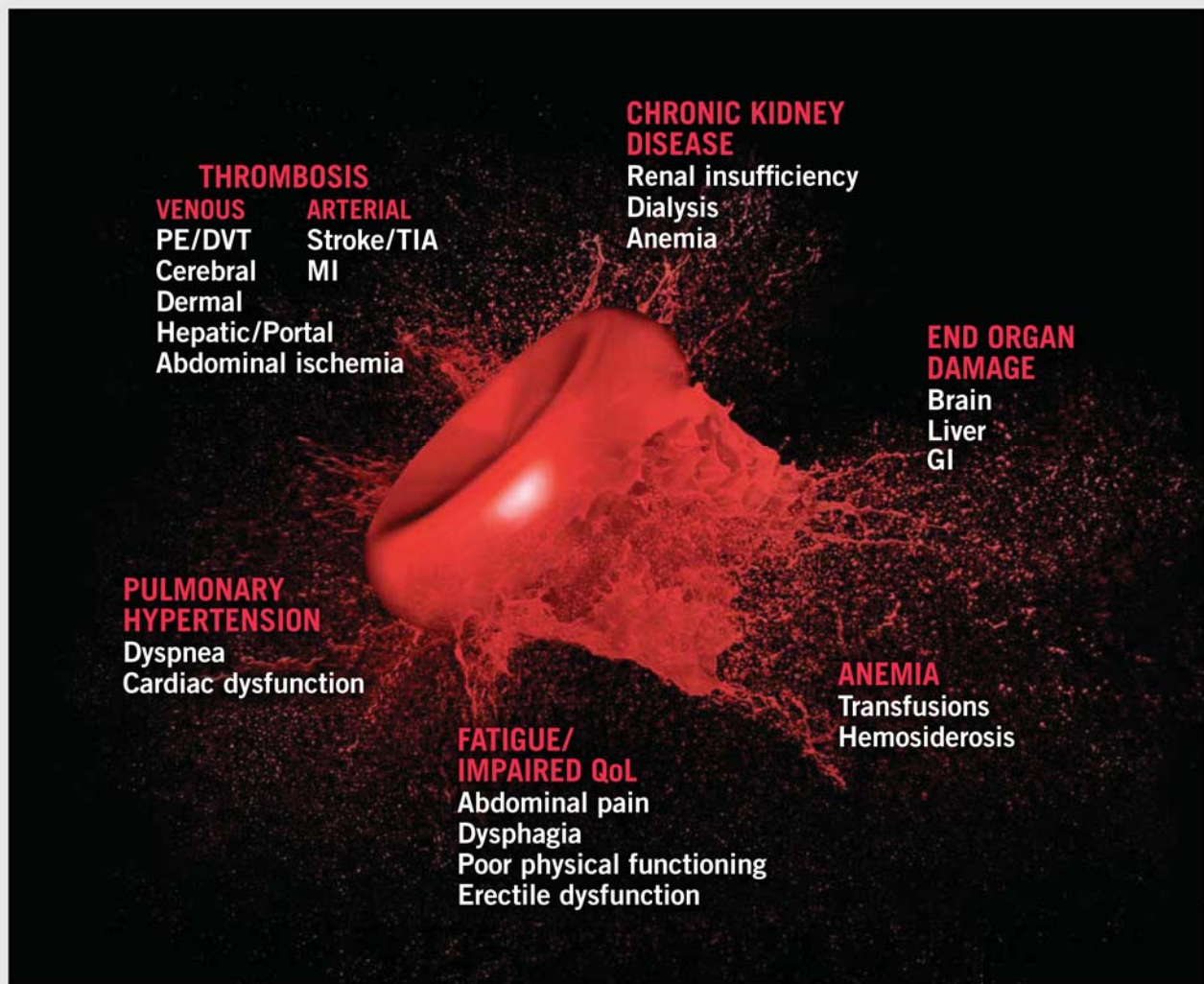
PNH strikes people of all ages, with an average age of onset in the early 30s.¹³ Approximately 10 percent of all patients first develop symptoms at 21 years of age or younger.¹⁰ PNH develops without warning and can occur in men and women of all races, backgrounds and ages. PNH often goes unrecognized, with delays in diagnosis ranging from one to more than 10 years.² It is estimated that approximately one-third of patients with PNH do not survive more than five years from the time of diagnosis.² PNH has been identified more commonly among patients with disorders of the bone marrow, including aplastic anemia (AA) and myelodysplastic syndromes (MDS).⁶⁻⁸ In patients with thrombosis of unknown origin, PNH may be an underlying cause.¹⁰

Prevalence

PNH is a rare blood disorder that affects an estimated 8,000 to 10,000 people in North America and Europe and, potentially 1,000 to 2,000 patients in Japan based on a study designed to look at PNH prevalence.¹² Due to the rareness of PNH, its global impact is not fully known.

Hemolysis

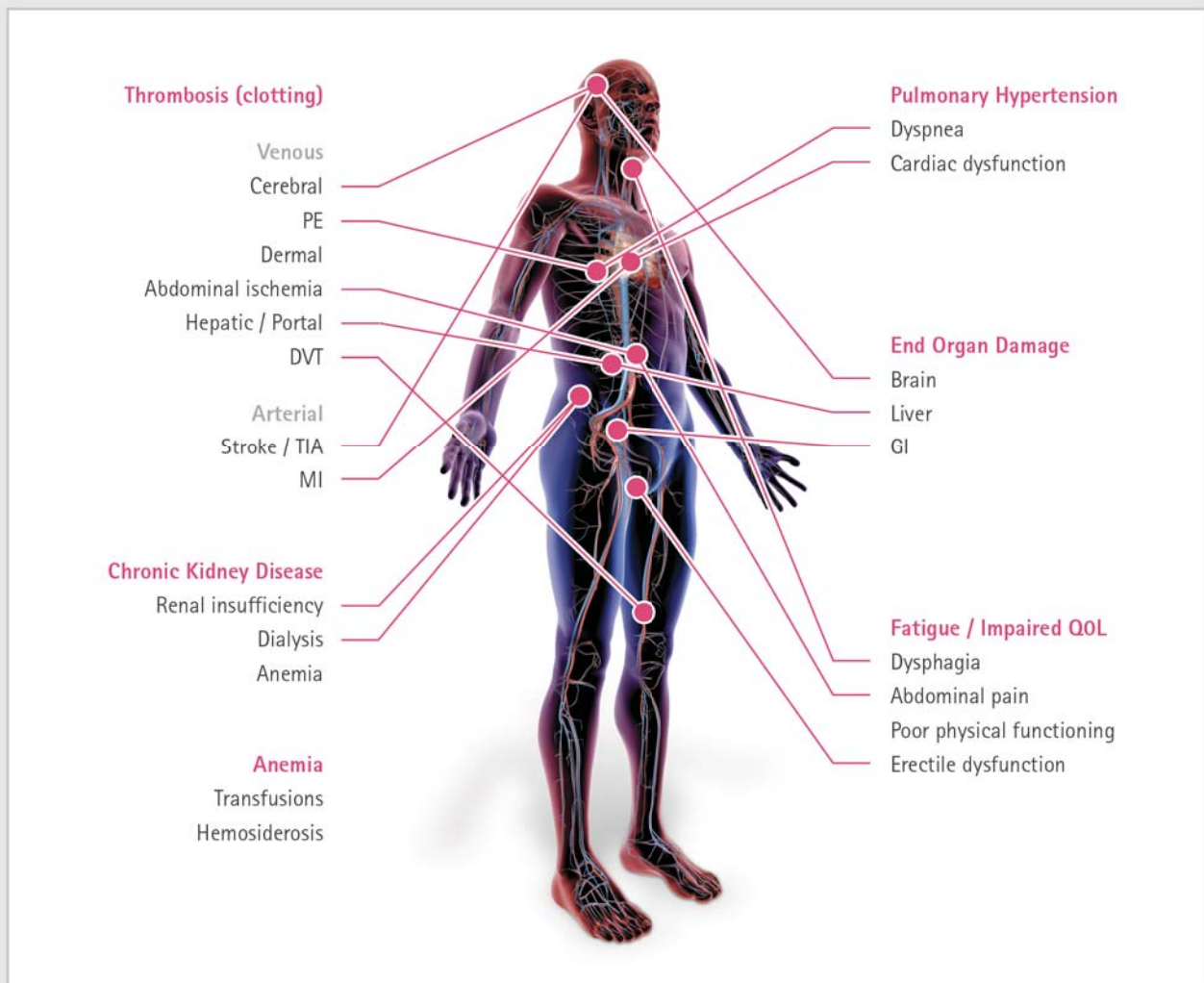
Excessive hemolysis, or the destruction of red blood cells, is the main cause of serious health problems in people with PNH.¹¹ In healthy individuals, red blood cells are equipped with a surface protein, known as a complement inhibitor, which protects them from naturally occurring levels of complement and prevents cell destruction. Patients with PNH lack the protective complement inhibitor protein, thus allowing red blood cells to be susceptible to low levels of complement activity, leading to excessive hemolysis.⁹ When excessive hemolysis occurs, the toxic contents of red blood cells are released into the bloodstream and cause many of the symptoms associated with PNH.



Effects

If left untreated, the long-term effects of PNH can be serious and potentially life-threatening. Blood clots and kidney failure are two significant causes of death in people with PNH.^{2,14} In fact, venous or arterial thromboses account for approximately 40 percent to 67 percent of PNH-related deaths.^{2,13-16} Poor kidney function, or renal insufficiency, is six times more prevalent in patients with PNH than in the general population.^{17,18} Patients with PNH also suffer from severe quality-of-life issues, including severe fatigue, abdominal pain, difficulty swallowing, erectile dysfunction and poor cognitive function. These issues often force patients to modify their daily activity.⁵

Consequences of Hemolysis in PNH



Symptoms

PNH is a complex disease with signs and symptoms that are nonspecific, unpredictable, and often similar to those of other diseases. While PNH presents uniquely in each person, some more common symptoms include^{5,10}:

- Stomach pain
- Difficulty swallowing
- Severe anemia
- Shortness of breath
- Dark-colored urine (hemoglobinuria)
- Disabling fatigue
- Erectile dysfunction
- Pain

Diagnosis

Because PNH is so rare, overall awareness of the disease and its natural history has been very limited. PNH can be difficult to detect and sometimes takes years to diagnose. The disease affects different people in different ways, and symptoms can vary widely from patient to patient.

Clinical trials of Soliris® (eculizumab) for the treatment of PNH have helped provide the medical community with new information about the severe and progressive nature of PNH.¹⁹⁻²¹ A growing number of physicians recognize the importance of accurate diagnosis and early intervention. They are implementing standardized diagnostic pathways to identify people with a greater likelihood of having PNH, including patients with bone marrow disorders such as Aplastic Anemia and Myelodysplastic Syndromes, and people with unexplained blood clots. Alexion is encouraging the use of standardized diagnostic pathways through educational programs.

Treatment

Soliris® (eculizumab) is the first in a new class of therapies to inhibit terminal complement, which reduces hemolysis, improves symptoms and reduces many of the major health complications associated with PNH.^{22,23}

Prior to approval of Soliris, there were no therapies specifically tested and approved for the treatment of PNH. Treatment was limited to symptom management through periodic blood transfusions, corticosteroid therapy, anticoagulants and, infrequently, bone marrow transplantations – a high-risk procedure.¹⁰

More information about PNH is available at <http://www.pnhsource.com>.

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Ref Type: Abstract

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