TYPES OF VASCULITIS
NAVIGATING THE UNKNOWN
VASCULITIS FOUNDATION

Granulomatosis with Polyangiitis (GPA)

(formerly Wegener's)

What is Granulomatosis with Polyangiitis (GPA)?

Granulomatosis with polyangiitis (GPA) is a form of vasculitis—a family of rare disorders characterized by inflammation of the blood vessels, which can restrict blood flow and damage vital organs and tissues. Formerly called Wegener's granulomatosis, GPA typically affects the sinuses, lungs, and kidneys but can involve any organs. GPA can worsen rapidly, so early diagnosis and treatment are essential to prevent organ damage or failure.

GPA is part of a group of autoimmune diseases called anti-neutrophil cytoplasmic antibody (ANCA)-associated vasculitis. ANCA refers to a blood protein (antibody) that attacks the body's own cells and tissues. People with this type of vasculitis often test positive for ANCA, although the test is not conclusive on its own.

In early stages, GPA symptoms resemble a common cold with persistent runny nose and nasal congestion, but it may also include nosebleeds, shortness of breath, coughing up blood, sinus pain, hoarseness or ear symptoms. Besides potential damage to the kidneys and respiratory tract, other serious complications may include vision or hearing loss.

GPA is a potentially serious but treatable disease. Corticosteroids such as prednisone are used in combination with other medications that suppress the immune system to control inflammation. Even with effective treatment, relapse can occur, so ongoing medical follow-up is usually necessary.

Causes

The cause of GPA is not yet fully understood. Vasculitis is classified as an autoimmune disorder—a disease that occurs when the body's natural defense system mistakenly attacks healthy tissue. Abnormal function of white blood cells (neutrophils) is thought to be involved in the disease.

Researchers believe an infection may contribute to the onset of GPA, but it is unlikely that an infection alone can explain this complex disorder. Environmental and genetic factors may play a role as well. Research is ongoing, but so far, no specific infectious, genetic, or environmental factor has been conclusively associated with GPA.

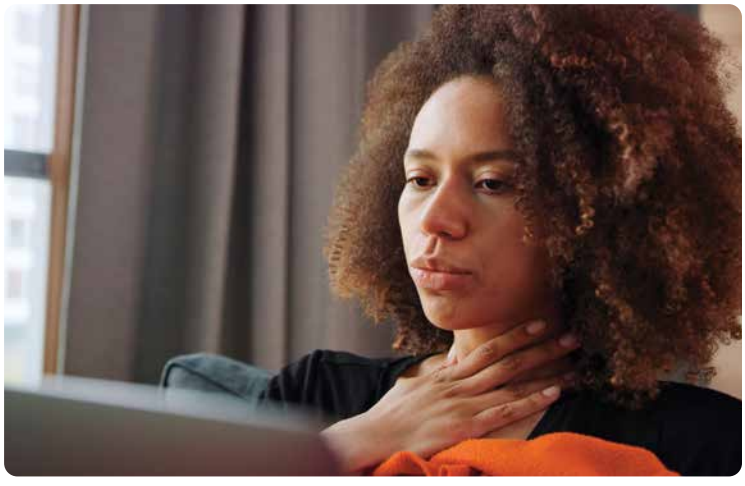
Who Gets GPA?

GPA affects an estimated 3 out of every 100,000 people. Although the disorder can occur at any age, onset is usually between 40 and 65 years of age, affecting males and females in equal numbers. The disease is rare in children but does occur. GPA can affect people of any race or ethnic background but appears to mostly affect Caucasians. Because GPA often goes unrecognized, researchers believe it is underdiagnosed, making it difficult to accurately determine its frequency.

Symptoms

The symptoms of GPA can vary greatly from person to person. For some, the disease is mild, while for others it may be severe or even life-threatening. GPA symptoms may come on slowly over a period of months or develop rapidly in a matter of days. Early symptoms can include:

- Runny nose/nasal congestion
- Nosebleeds
- Sinus pain
- Ear pain
- Hearing loss
- Shortness of breath
- Coughing up blood
- Hoarseness
- Joint pain



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Other symptoms of GPA include:

- Fever
- Fatigue
- Muscle pain
- Loss of appetite/weight loss
- Eye problems
- Skin rashes or other lesions
- Night sweats
- Numbness in the fingers, toes, or limbs
- Weakness
- Kidney problems (Note: Kidney disease can be present without symptoms; therefore, patients with vasculitis should have regular urine tests.)

Complications

Serious complications may occur including bleeding and scarring of the lungs, kidney damage or failure, heart disease, hearing loss, skin ulcers, deep vein thrombosis (blood clot), permanent nerve damage from neuropathy, or damage to the bridge of the nose from weakened cartilage.

See your doctor if you have cold symptoms that don't get better with over-the-counter cold medications, especially if you have nosebleeds, are coughing up blood or have other warning signs.

Diagnosis

There is no single test for diagnosing GPA, so your doctor will consider several factors including symptoms, medical history, physical exam findings, laboratory tests, and imaging studies. A biopsy of the affected tissue is sometimes required to confirm the diagnosis.

- **Blood tests:** The most common blood test for GPA checks for the antibody called ANCA. The ANCA test is positive in most individuals with GPA, so it may help support a suspected diagnosis of GPA. However, a positive test alone does not confirm diagnosis.
- **Urine tests:** A urinalysis can detect red blood cells or excess protein in the urine, which can indicate whether the kidneys are being affected.
- **Imaging studies:** Chest X-rays can show changes in the lungs. Computed tomography (CT) scans and magnetic resonance imaging (MRI) provide more detailed images of the internal organs and can better reveal abnormalities in the sinuses, chest, brain, blood vessels or abdominal organs.
- **Tissue biopsy:** This surgical procedure removes a small tissue sample from an affected organ such as the lung, kidney, or skin, which is examined under a microscope for signs of inflammation or tissue damage.

Treatment

The choice of treatment for GPA depends on the organs affected and disease severity. Patients with milder disease are commonly prescribed corticosteroids such as prednisone in combination with another medication such as methotrexate to control inflammation and induce remission of disease.

Patients with severe disease may be prescribed the biologic drug rituximab, used in conjunction with corticosteroids. Rituximab was approved in 2011 by the U.S. Food and Drug Administration (FDA) for the treatment of GPA and another form of vasculitis, microscopic polyangiitis (MPA). Biologic medications are complex proteins derived from living organisms. Biologics target certain parts of the immune system to control inflammation.

Another option for those with severe disease is cyclophosphamide—a chemotherapy-type drug that blocks abnormal growth of certain cells in the body. It is used in combination with corticosteroids. Cyclophosphamide is usually limited to a three- to six-month period, then replaced with less toxic drugs such as methotrexate, azathioprine or mycophenolate mofetil.

Once the disease is in remission, patients will need to continue taking maintenance medications such as azathioprine, methotrexate or rituximab, to keep the disease under control. The dose of corticosteroids is usually tapered during remission.

Some individuals may experience kidney failure, which is a serious complication that requires dialysis and/or a kidney transplant. A rarely

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used treatment option for those with very serious GPA affecting the kidneys or lungs is "plasmapheresis." Plasmapheresis is a dialysis-like procedure that clears proteins from the plasma of the blood and replaces it with plasma from a donor, or with a plasma substitute.

In 2021, the medication avacopan was approved by the FDA as an adjunctive treatment in adults for severe, active ANCA-associated vasculitis (specifically GPA and MPA) in combination with standard therapy including corticosteroids. Avacopan may help to reduce exposure to corticosteroids.

Side Effects of Treatment

The medications used to treat GPA have potentially serious side effects such as lowering your body's ability to fight infection, and potential bone loss (osteoporosis), among others. Therefore, it's important to see your doctor for regular checkups. Medications may be prescribed to offset side effects. Infection prevention is also very important. Talk to your doctor about getting vaccines (*e.g.,* flu shot, pneumonia and/or shingles vaccination), which can reduce your risk of infection.

Medical Follow-up/Relapse

GPA is a chronic disease with periods of relapse and remission. If your initial symptoms return or you develop new ones, report them to your doctor as soon as possible. Regular doctor visits and ongoing monitoring of laboratory and imaging tests are important in detecting relapses early.

Your Medical Team

Effective treatment of GPA may require the coordinated efforts and ongoing care of a team of medical providers and specialists. In addition to a primary care provider, GPA patients may need to see the following specialists:

- Rheumatologist (joints, muscles, and immune system)
- Pulmonologist (lung)
- Otolaryngologist (ear, nose, and throat)
- Nephrologist (kidneys)
- Dermatologist (skin)
- Cardiologist (heart)
- Neurologist (brain/and nervous system) or others as needed

The best way to manage your disease is to actively partner with your health care providers. Get to know the members of your health care team. It may be helpful to use a health care journal to keep track of medications, symptoms, test results and notes from doctor appointments. To get the most out of your doctor visits, make a list of questions beforehand and bring along a supportive friend or family member to provide a second set of ears and take notes.

Remember, it's up to you to be your own advocate. If you have concerns about your treatment plan, speak up. Your doctor may be able to adjust your dosage or offer different treatment options. It is always your right to seek a second opinion.

Living with GPA

Living with a chronic disease such as GPA can be challenging at times. Fatigue, pain, emotional stress, and medication side effects can take a toll on your sense of well-being, affecting relationships, work, and other aspects of your daily life. Sharing your experience with family and friends, connecting with others through a support group or talking with a mental health professional can help.

Outlook

There is no cure for GPA at this time, but early diagnosis and effective treatment can bring the disease into remission, and many patients can lead full, productive lives. Left untreated, GPA can lead to potentially life-threatening organ damage or failure. Even with treatment, many patients will experience periods of relapse, so ongoing medical care is important.

In 2021 the American College of Rheumatology (ACR) published guidelines for the management of certain vasculitides, which were also endorsed by the Vasculitis Foundation (VF). Clinical practice guidelines are developed to reduce inappropriate care, minimize geographic variations in practice patterns, and enable effective use of health care resources. Guidelines and recommendations developed and/or endorsed by the ACR are intended to provide guidance for particular patterns of practice and not to dictate the care of a particular patient. The application of these guidelines should be made by the physician in light of each patient's individual circumstances. Guidelines and recommendations are subject to periodic revision as warranted by the evolution of medical knowledge, technology, and practice.

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About Vasculitis

Vasculitis is a family of nearly 20 rare diseases characterized by inflammation of the blood vessels, which can restrict blood flow and damage vital organs and tissues. Vasculitis is classified as an autoimmune disorder, which occurs when the body's natural defense system mistakenly attacks healthy tissues. Triggers may include infection, medication, genetic or environmental factors, allergic reactions, or another disease. However, the exact cause is often unknown.

A Family of Diseases

- Anti-GBM disease (formerly Goodpasture's syndrome)
- Aortitis
- Behçet's syndrome
- Central nervous system vasculitis (CNSV)
- Cogan's syndrome
- Cryoglobulinemic vasculitis
- Cutaneous small-vessel vasculitis (CSVV) (formerly hypersensitivity/leukocytoclastic)
- Eosinophilic granulomatosis with polyangiitis (EGPA, formerly Churg-Strauss syndrome)
- Giant cell arteritis (GCA)
- Granulomatosis with polyangiitis (GPA, formerly Wegener's)
- IgA vasculitis (formerly Henoch-Schönlein purpura)
- Kawasaki disease
- Microscopic polyangiitis (MPA)
- Polyarteritis nodosa (PAN)
- Polymyalgia rheumatica (PMR)
- Rheumatoid vasculitis
- Takayasu arteritis (TAK)
- Urticarial vasculitis (normocomplementemic or hypocomplementemic)

About the VF

The VF is the leading organization in the world dedicated to diagnosing, treating, and curing all forms of vasculitis. The VF is a 501(c)(3) nonprofit organization governed by a Board of Directors and advised on medical issues by a Medical and Scientific Advisory Board. VF's educational materials are not intended to replace the counsel of a physician. The VF does not endorse any medications, products, or treatments for vasculitis, and advises you to consult a physician before initiating any treatment.

The VF gratefully acknowledges Alexandra Villa-Forte, MD, Cleveland Clinic Center for Vasculitis Care and Research, for her expertise and contribution to this brochure.

To access additional VF support and educational resources, please scan the QR code below.

VF Mission

Building upon the collective strength of the vasculitis community, the Foundation supports, inspires and empowers individuals with vasculitis, and their families, through a wide range of education, research, clinical, and awareness initiatives.

These brochures are made possible by

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