Guillain-Barre syndrome

This information is provided by the National Institutes of Health (NIH) Genetic and Rare Diseases Information Center (GARD).

Synonyms

- Acute autoimmune peripheral neuropathy
- GBS
- Acute immune-mediated polyneuropathy
- Acute inflammatory demyelinating polyneuropathy
- Acute inflammatory demyelinating polyradiculoneuropathy
- Acute inflammatory neuropathy
- Acute inflammatory polyneuropathy
- Landry-Guillain-Barre-Strohl syndrome
- Landry's ascending paralysis
- Post-infective polyneuritis
- Guillain-Barré syndrome
- Guillain-Barré-Strohl syndrome

Summary

Guillain-Barré syndrome (GBS) is a rare syndrome in which the body's immune system attacks part of the peripheral nervous system. The peripheral nervous system carries signals from the brain to the muscles. Symptoms of GBS include muscle weakness, numbness, and tingling sensations, which can increase in intensity until the muscles cannot be used at all (paralysis).

The exact cause of Guillain-Barré syndrome is unknown. In most cases, GBS occurs a few days or weeks after symptoms of a viral infection. In rare cases, GBS may run in families. A diagnosis of GBS is suspected when a person has symptoms suggestive of the syndrome. A variety of tests, including a spinal tap, may be completed to confirm the diagnosis. Treatment options may include plasma exchange (plasmapheresis) and immunoglobulin therapy.

Symptoms

Signs and symptoms of Guillain-Barré syndrome (GBS) include muscle weakness, muscle pain, numbness, and tingling sensations. GBS can affect people of any age. The first symptoms of GBS typically begin in the lower legs. The symptoms can then spread to the muscles of the upper body. Typically, the symptoms continue to worsen over the first 2-3 weeks after they first begin. In some cases, the symptoms of GBS can increase in intensity until the muscles cannot be used at all (paralysis). Other symptoms of GBS can include difficulty with bladder control or bowel function, difficulty breathing, blood pressure, and heart rate. Some people with GBS have facial droop, double vision, difficulty speaking or swallowing, and changes in eye movements. As the

disease progresses, the muscle weakness may worsen to affect the muscles that are important for breathing.

Cause

The exact cause of Guillain-Barré syndrome (GBS) is not well-understood in all cases of the syndrome. GBS can occur at any age, but it is especially common in people older than 50-years-old. GBS is considered to be an autoimmune disease, meaning that it occurs when the immune system mistakenly attacks tissues of its own body. Specifically, the immune system of people with GBS targets the nerves of the peripheral nervous system. The peripheral nervous system is the part of the nervous system that is outside of the brain and spinal cord. It is responsible for carrying signals from the brain to the muscles of the body. When the immune system attacks the peripheral nervous system, signals cannot be sent from the brain to the muscles as quickly as they should. This causes the signs and symptoms associated with GBS.

In some cases, people who develop GBS report that they were sick with a gastrointestinal or upper respiratory illness a few days or weeks before the symptoms of GBS began. These infections can be caused by viruses such as cytomegalovirus, Epstein-Barr virus, flu virus, or Zika virus or bacteria such as *Campylobacter jejuni*. However, only a small number of people who have these infections develop GBS.

On very rare occasions, people have developed GBS within a few days or weeks after receiving a vaccination. For example, in 1976, there were several cases in which people developed GBS after getting the swine flu vaccine. The link between GBS and the flu vaccine in other years is unclear. It is believed that the risk of developing GBS after seasonal flu vaccines is about one in a million. Studies suggest that a person is more likely to develop GBS after having the flu than after getting a vaccine.
There are also case reports that suggest a link between GBS and certain medications or surgical procedures. However, a definitive association between medications or surgery and GBS has not been established.

Inheritance

Changes (mutations) in a particular gene are not known to be associated with Guillain-Barré syndrome (GBS). In most cases, a person who has GBS is the only person that has been affected in the family. Therefore, it is not thought that GBS is passed directly from parent to child. In rare cases, instances of multiple people within the same family having GBS have been reported. It is thought that these cases may be caused by family members sharing normal variants in certain genes that may increase the risk to develop GBS.

Diagnosis

A diagnosis of Guillain-Barré syndrome (GBS) is suspected when a person has signs and symptoms consistent with the syndrome. Doctors may identify symptoms such as muscle weakness on both sides of the body that starts from the lower leg muscles and spreads upwards. Doctors may also look for other signs of GBS such as relatively rapid progression of symptoms and loss of muscle reflexes.

Tests can be completed to confirm a diagnosis of GBS and rule out other diseases that can cause muscle weakness. These tests may include nerve conduction velocity tests to measure how quickly signals are being sent through the peripheral nervous system. An electromyogram (EMG) may be ordered to determine if the muscles are responding to signals correctly. A lumbar puncture (spinal tap) may also be ordered, as people with GBS have high levels of protein in the cerebral spinal fluid (CSF) that surrounds the spine.

Treatment

Unfortunately, there is no cure for Guillain-Barré syndrome (GBS). However, symptoms of the syndrome can be improved with treatments including plasma exchange therapy and immunoglobulin therapy. Both of these therapies can help prevent the immune system from continuing to attack the peripheral nervous system. In some cases, corticosteroids have been used to try to alleviate symptoms of GBS. However, it has not been proven that steroids can help speed recovery.

People who have GBS may be admitted to the hospital for treatment and to reduce the risk of complications. In some cases, other treatments may be necessary to prevent complications of GBS including pain medications and heparin to reduce the risk of blood clots. Some people with GBS may require help breathing with a ventilator.[3] Physical, occupational, and speech therapy may be recommended to help people fully recover from GBS.

Prognosis

Most people who have Guillain-Barré syndrome (GBS) regain muscle strength within a few months after diagnosis and treatment. However, for some, severe muscle weakness may continue even after treatment. Some people may have a slower recovery from the symptoms of GBS, and they may be in the hospital or on a ventilator for a longer time. For these people, recovery may take a few years. About 30% of people who had GBS continue to have muscle weakness years after the first symptoms of GBS.

In rare cases, people have passed away from complications of GBS. Causes of death may include acute respiratory distress syndrome, sepsis, pulmonary emboli, and unexplained cardiac arrest. Some people with GBS may relapse after an original improvement of symptoms. The risk of relapse appears to be higher in people who have had a later onset of treatment, a longer-lasting disease, and other medical problems occurring at the same time.

For many with GBS, suddenly relying on family members and medical professionals to help with tasks required for daily living can be devastating. In some cases, people with GBS may suffer from anxiety or depression. It is important for people with GBS and their family members to tell their doctor about signs and symptoms of depression, especially if the depression is long-lasting and does not improve as the physical symptoms of GBS improve.