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IgG subclass deficiency

What is IgG subclass deficiency?

Antibodies (also known as immunoglobulins) circulate in your blood and are present in secretions such as saliva and lung secretions. They help the immune system fight infections. There are a number of different classes of immunoglobulins including IgM, IgA, IgE and IgG. IgG is one of the immunoglobulins which circulates in the blood. IgG can be subdivided into a number of different subclasses called IgG₁, IgG₂, IgG₃ and IgG₄. It is not clear how important having all of these subclasses is, and some people have low levels of an IgG subclass and remain well. The combination of a low IgG₂ and low IgA increases susceptibility to infections in some individuals. In IgG subclass deficiency the total amount of IgG is normal. If there are any symptoms from the IgG subclass deficiency, they tend to be much milder than in other types of immunoglobulin deficiency. Even though there is a problem with IgG subclasses, the other antibodies and the other ways in which the immune fights infections still work. Low IgG subclasses can be found in both males and females, and in all age groups.

Why does it happen?

A type of immune cell known as B cells are responsible for the production of antibodies. In the immune system there is normally constant communication between B cells and other immune cells. The point of this communication is to ensure that B cells make the right type of antibodies against the correct targets.

Why some people develop IgG subclass deficiency is the subject of ongoing research and the causes are not fully understood. One theory is that there is a problem with the communication between B cells and other cells.

What might my symptoms be?

Antibodies help the immune system to fight off infections. Some people with IgG subclass deficiencies may be susceptible to increased numbers of infections, and in particular chest and sinus infections. Symptoms result from the infection itself, and can include cough, sputum production and fevers.

How is IgG subclass deficiency diagnosed?

The following tests are normally performed in investigation of IgG subclass deficiency:

- measuring the levels of immunoglobulins (there are 3 main classes called IgM, IgA and IgG)
- measuring the levels of the IgG subclasses
- checking whether there are specific immunoglobulins present which can fight infection (we use tetanus, pneumococcus and haemophilus influenzae type b as indicators)
- if the specific immunoglobulins are low then the response of the immune system to vaccination is assessed – these responses should be normal in IgG subclass deficiency
- counting the numbers of different immune cells in the blood – these should also be normal

What treatments can be used?

Treatment varies from person to person. In many cases no treatment is needed. If suffering from an infection, then a course of antibiotics might be prescribed. Sometimes prophylactic antibiotics are used – this is a low dose of antibiotics taken regularly to help prevent any further infections.

Further information

Please ask us in clinic any questions that you have about IgG subclass deficiency and/or your treatment.

PID UK (Primary Immunodeficiency UK) and UKPIPS (UK Primary Immunodeficiency Patient Support) are patient groups for those affected by immunodeficiencies. Their websites are below (note that we have no editorial control for the websites and take no responsibility for their content):

www.piduk.org

www.ukpips.org.uk

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Document Owner: Immunodeficiency Centre for Wales

Last revised: September 2018

Next review: September 2021