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Specific Antibody Deficiency

What is specific antibody deficiency (SPAD)

Antibodies (also known as immunoglobulins) circulate in blood and are present in secretions such as saliva and lung secretions. There are literally millions of different types of antibodies and they help the immune system fight infections. In SPAD some of the antibodies which are combat infections are missing, though the total amount of antibody is normal. This can be thought of as a problem with the quality of antibody even though the total quantity is normal. SPAD can affect both males and females and all age groups.

Why does it happen?

A type of immune cell known as B cells is responsible for the production of antibodies. In the immune system there is normally constant communication between B cells and other immune cells. The purpose of this communication is to ensure that B cells make antibodies against the correct targets. B cells should make antibodies against infections to help your immune system fight them off.
Why some people develop SPAD is the subject of ongoing research and the causes are not fully understood. One theory is that a problem with the communication between B cells and other cells leads to SPAD.

What might my symptoms be?

Antibodies help the immune system to fight off infections, especially bacterial infections. Patients with SPAD may be susceptible to increased numbers of chest and sinus infections in particular. Chest infections should be treated promptly with antibiotics to ensure that no damage to the lungs results. The other components of the immune system work normally in SPAD, and so even though there is a problem with the production of antibodies, the other ways in which the immune system fights infections still work.

How is SPAD diagnosed?

The following tests are normally performed in investigation of SPAD:

- measurement of the levels of immunoglobulins (there are 3 main classes called IgM, IgA and IgG)
- 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
- counting the numbers of different immune cells in the blood – these should be normal in SPAD

What treatments can be used?

Infections should be promptly treated with antibiotics. Often high dose antibiotics continued for at least 10 days are used. If the episodes of infection are frequent, you may be started on prophylactic antibiotics – this is a low dose of antibiotics taken regularly, even when you are well. The aim of prophylactic antibiotics is to prevent an infection from starting. The antibiotic chosen varies from person to person according to individual circumstances. For example, allergies to antibiotics, the species of bacteria and the site(s) of infection will all influence the antibiotic choice.

In a number of cases antibiotics alone are not enough, and immunoglobulin replacement therapy is required. This replaces the low levels of immunoglobulins and can be administered in 2 ways. Intravenous immunoglobulin (IVIg) is given directly into the vein, usually every 3 weeks. Subcutaneous immunoglobulin (SCIg) is given just under the skin, for example on the abdomen, usually weekly. There is a newer method of administering immunoglobulin known as facilitated SCIg (fSCIg) which allows immunoglobulin to be given subcutaneously every 3 weeks. The choice between the different ways of infusing immunoglobulin will be discussed with you and the different methods suit different people. The dose and how often the infusions need to be given varies and is tailored to each individuals requirements.

Further information

Please ask us in clinic any questions that you have about SPAD 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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