Department of Immunology, University Hospital of Wales

Consultants: Prof S Jolles, Dr T El-Shanawany, Dr R Cousins, Dr P Williams
Specialist Trainees: Dr M Ponsford, Dr S Wijetilleka
Immunology Clinical Specialist Nurses: E Carne, C Kingdon, C Price, T Matthews

Severe Combined Immunodeficiency (SCID)

What is SCID?

SCID is present from birth and the symptoms are usually apparent from infancy. Because of the immunodeficiency, affected individuals are susceptible to recurrent and severe infections.

Why does it happen?

The immune system is made of many types of cells, one of which is called lymphocytes. There are 2 main types of lymphocytes: T cells and B cells. T cells are responsible for coordinating the immune response and also kill viruses. B cells make antibodies which protect against infections, and in particular against bacterial infections.
In SCID, the T cells are absent. There are different types of SCID and in some types both T and B cells are absent. This means that the immune system does not function properly and there is an increased susceptibility to infections.
The different types of SCID are due to different genetic defects which are inherited in different ways. The most common type of SCID is inherited as an X-linked condition. This means that it can only affect males, though females can be carriers. Other forms are inherited in an autosomal recessive manner. This means that it can affect both males and females, and that both males and females can be carriers.

What might my symptoms be?

The symptoms result from the infections to which the affected individual is susceptible. These will depend on the infection(s) present at the time but may include cough, sputum production, fever, sweats, tiredness, muscle pains, diarrhoea and/or vomiting. Due to the recurrent infections there is usually a failure for the child to grow and put on weight.

How is SCID diagnosed?

The main finding in SCID is the absence or low numbers of lymphocytes. Both T and B cells are counted, as are other cell types to help determine which type of SCID is present. A number of other tests then follow on from this according to the particular case.

What treatments can be used?

The infections should be treated with prompt antibiotics or antiviral medicines. However, these only treat the infections and not the underlying problem. A bone marrow transplant is usually required. Preventing further infections is a crucial part of the treatment, and will help keep the child well while awaiting a bone marrow transplant. The various treatment options will be discussed in detail with the parents of affected children.

Further information

The above information is a summary of what effects SCID might have, but there are a number of different types and different patients have different symptoms. Please ask us in clinic any questions that you have about SCID 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

Author: Dr Tariq El-Shanawany
Document Owner: Immunodeficiency Centre for Wales

Last revised: September 2018
Next review: September 2021