

Patient information

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This is a smokefree Trust. Smoking is not allowed in any of our hospital buildings or grounds.

The Trust will not tolerate aggression, intimidation or violence.

Suxamethonium sensitivity

You may have been told that you or someone in your family has suxamethonium sensitivity.

What is suxamethonium?

Suxamethonium or 'scoline' is a drug used by anaesthetists during surgery. It acts as a muscle relaxant.

What is suxamethonium sensitivity?

Suxamethonium sensitivity is when the drug remains active for a longer period of time than is usual. As a result, muscles stay relaxed and it takes longer to start breathing again for yourself.

How does suxamethonium sensitivity come about?

Suxamethonium is broken down and made inactive by a special protein (enzyme) in the blood called cholinesterase. Sensitivity to suxamethonium occurs when there is a lower level of this protein than usual.

Low levels of cholinesterase occur because of a fault in the cholinesterase gene. Genes are codes which tell our body how to make the different proteins required.

All our genes come in pairs, and we receive one copy of each gene from our mother and one from our father.

If a person has two faulty copies of the cholinesterase gene then they will always be sensitive to suxamethonium.

People who only have one faulty copy of the cholinesterase gene may be sensitive, especially if pregnant when cholinesterase levels drop further.

How is suxamethonium sensitivity passed on?

For someone who has two faulty copies of the cholinesterase gene, every time they have a child, they will pass on one of these faulty copies. Usually this will combine with a normal copy of the gene from the other parent. This means that all the children may be sensitive to suxamethonium, but tests are required to make sure. It is recommended that close relatives of a person with two faulty copies of the gene are tested to see if they are sensitive, but children can wait until they are of child bearing age to be tested.

For someone who has one faulty copy of the cholinesterase gene, there is a 50/50 (heads or tails) chance of passing on the faulty gene or a normal gene to each child.

What does it mean to have suxamethonium sensitivity?

A low cholinesterase level has no effect other than when suxamethonium is given. Other drugs used less commonly by anaesthetists (e.g. mivacurium) will also have a longer than usual action, but would not be used in somebody known to have suxamethonium sensitivity.

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Cocaine and heroin are also broken down by cholinesterase. Individuals with a low cholinesterase level who take these drugs would have higher levels in their blood than normal individuals. Therefore, serious side effects of these drugs, such as heart problems, would occur more often in suxamethonium sensitive people.

How do I get the result?

The result will be sent to your doctor who will normally receive it after approximately two weeks. For reasons of confidentiality the Laboratory is not allowed to give the result to you.

Who should carry a medical alert card?

A medical alert card is used to inform doctors that you are, or may be, sensitive to suxamethonium and its use can therefore be avoided. Medical contact cards are issued to the following people:

- All with two faulty copies of the gene who are always sensitive to suxamethonium.
- All with one faulty copy of the gene who have a low cholinesterase level and therefore may be sensitive.
- Females with one faulty copy of the gene who have a normal cholinesterase level but are of child bearing age and may be sensitive when pregnant.

Medical alert bracelets or necklets can be purchased through several organisations.

How can my relatives be tested for suxamethonium sensitivity?

It is recommended that relatives of a person with two faulty copies of the gene are tested. A simple blood test can be arranged through your consultant or your family doctor (GP).

If you need any more information, please telephone the consultant biochemist on 01268 524 900 extension 3029/3025 or ask your doctor.