



keeping your Child's Kidneys Safe

Who is this leaflet for?

This information has been developed to help parents / carers of children who have been told that they may be at risk of Acute Kidney Injury, and to help answer any questions you may have.

This leaflet is for parents / carers of children who are taking medicines that may reduce how well the kidneys work, particularly if your child is dehydrated. Doctors call this acute kidney injury or AKI. These medicines are usually quite safe and are used by many children without any problems. This leaflet will give you information on what you can do to avoid your child developing AKI if they are taking one of these medicines. The particular medicines this leaflet is about are;

- Angiotensin Converting Enzyme (ACE) inhibitors e.g. enalapril, lisinopril
- Non-steroidal anti-inflammatory drugs (NSAIDS) e.g. ibuprofen, Nurofen, Calprufen
- Angiotensin receptor blockers (ARB) e.g. losartan
- Diuretics e.g. furosemide

What do your kidneys do?

The kidneys perform 5 important tasks for the body:

1. They **remove waste products and toxins** from the body, including drugs, **by making urine**
2. They help **control fluid balance**, making sure that we do not have too much or too little salt and water in our body
3. They help **control blood pressure**, keeping it at the right level for body functions
4. They **make vitamin D**, keeping our bones strong
5. They **make a hormone called erythropoietin**, which stimulates the production of red blood cells.

What is acute kidney injury (AKI)?

Acute is a term used to describe something that has changed or developed over hours or days. **'Kidney Injury'** describes damage to the kidneys usually with a change in the kidney function. It is often shortened to **"AKI"**.

The best way to measure kidney function is by a blood test to measure a waste product called creatinine and to measure how much urine is being made.

AKI usually gets better without treatment but children may need to be admitted to hospital.

When might my child be at risk of AKI?

Anyone is at risk of AKI if they have an illness which reduces how much blood goes to the kidneys. The most common cause of this in children is dehydration (lack of fluid in the body) caused by diarrhoea and vomiting. Less common causes include blood infection (sepsis) or major surgery. The medicines that can reduce blood flow through the kidneys if your child is unwell and dehydrated are listed in this leaflet. If your child is taking one of these medicines, the risk of AKI increases.

Your child may have another medical condition or treatment that makes them more at risk of AKI, for example;

- Known kidney disease e.g. chronic kidney disease or a kidney transplant
- Heart disease
- Liver disease
- Cancer undergoing treatment
- Bone marrow transplant
- Any condition which makes them dependent on others for access to fluids
- Treatment with some antibiotics e.g. gentamicin, tobramycin
- Treatment with other medications e.g. tacrolimus or ciclosporin

What can I do to prevent AKI?

If your child is unwell with vomiting, diarrhoea or a high fever then they could become dehydrated. This is a risk if your child is not able to drink enough to make up for water they lose through diarrhoea and vomiting (d&v). It is important that you encourage them to take frequent small amounts of water. Fruit juice and fizzy drinks should be avoided. But high fluid content foods such as ice lollies and jelly can be given to help them take extra fluid if they are old enough to have these.

There are a number of things you should discuss with your GP or hospital doctor if your child is unwell with d&v and taking ACE inhibitors or ARBs:

1. Use of oral rehydration solution such as diarolyte. This is a powder that can be mixed with water to replace lost salts as well as water. In most children this is very effective at correcting the dehydration but may not be advisable for some children treated with these medicines.
2. It may be best to stop or change your child's medication until they have been drinking normal amounts for 5 days. You may want to write down what your GP or hospital doctor tells you in the section on the right.

What should I do if I am concerned my child has AKI?

Your child may not have any clear signs or symptoms of AKI as they often aren't obvious until the kidney function is very much reduced. Early action can help prevent AKI or stop it becoming severe, so you should contact your GP, hospital doctor or nurse if you are concerned your child might be dehydrated because they have vomiting, diarrhoea, a high fever, are not able to tolerate fluids or are passing less urine (less wet nappies in babies). They will advise you whether you need to alter your child's medication and whether you need to go to hospital for your child to have blood tests, their urine output monitored or to have fluids into the vein via a drip to prevent AKI.

Where can I find out more?

You can get further information from your GP, hospital doctor or nurse.

There is more information at:

infokid.org.uk

nice.org.uk/guidance/CG84/ifp/chapter/Preventing-and-treating-dehydration

medicinesforchildren.org.uk

thinkkidneys.nhs.uk

Acknowledgements

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What my doctor has told me to do if my child is unwell?

Use this space to write down what your doctor has told you to do if your child is unwell.

