Treatments for ADPKD

Find out about different medications that can help manage your symptoms of ADPKD (autosomal dominant polycystic kidney disease), slow its progression and reduce your risk of complications.

Medications to treat the symptoms of ADPKD

If you have autosomal dominant polycystic kidney disease (ADPKD), your kidney specialist or other doctor may recommend medication to help manage your symptoms and reduce the chance of future complications (knock-on effects such as high blood pressure).

Medications for ADPKD symptoms include:

- Blood pressure tablets to stop your blood pressure becoming too high
- Antibiotics to treat infections of the urinary tract, kidney or liver cysts
- Pain relief, to treat short- or long-term pain

Whether you need any of these medications will depend on the symptoms you have, and could change over time. Your kidney specialist or other doctor will be able to explain which treatments might be right for you, and why.

Click on the links above to find out more about particular symptoms and the medications that can help.

Medication to slow the progress of ADPKD: tolvaptan

If you have ADPKD, your condition is likely to get worse over time. This is called progression. The speed at which your ADPKD will progress is influenced by the faulty gene that caused your ADPKD and sometimes your family history too. ADPKD can progress at different rates in different people.

A new treatment has been approved in Europe for adults that can help slow the progression of ADPKD: **tolvaptan (Jinarc®)** [1]. Tolvaptan is taken orally (as a tablet). It can slow the rate at which your kidneys become enlarged by cysts and can help to slow the speed at which your kidney function declines. Tolvaptan does not alter the growth of liver cysts.

Tolvaptan is not available for all patients with ADPKD. The organisations that recommend which medicines the NHS uses (the National Institute for Health and Care Excellence [NICE] in England and Wales, and Scottish Medicines Consortium [SMC] in Scotland), have set the following guidance based on the stage of a person's kidney disease:

- In England and Wales, tolvaptan can be prescribed to adults with ADPKD, chronic kidney disease (CKD) stage 2 or 3, **and** evidence that the disease is progressing rapidly [1]
- In Scotland, tolvaptan can be prescribed to adults with ADPKD, CKD stage 1, 2 or 3, **and** evidence that the disease is progressing rapidly [2]

Your kidney specialist can tell you whether tolvaptan is suitable for you, and explain the benefits and risks. Guidance has been developed by the Renal Association to help doctors identify patients who may be suitable for tolvaptan [3].

If you are unsure of the stage of your kidney disease, the below table may help, or your kidney specialist or doctor can confirm this for you.

Kidney disease stages

Stage is defined by the function of your kidneys and their eGFR (estimated glomerular filtration rate) which is a measure of how much fluid the kidneys can filter in a minute [4]:

CKD stage	Kidney function	eGFR in ml/min/1.73 m^2
1	Normal (although some signs of kidney damage)	90 or more
2	Mildly reduced	60 to 89
3	Moderately reduced	30 to 59
4	Severely reduced	15 to 29
5	Very severely reduced = kidney failure	Less than 15 (or having dialysis)

Q&A on tolvaptan

Q. How do I know if my ADPKD is 'rapidly progressing'?

The NICE and SMC guidance on tolvaptan says that patients should have 'evidence of rapidly progressing disease' to be considered for tolvaptan treatment. So, what does this mean? UK kidney experts have developed a guide for kidney specialists to help them judge whether a person's ADPKD is progressing quickly [3]. The guidance is very detailed, but in essence they say that you may have rapidly progressing disease if you meet one of the following criteria:

- The amount of waste that your kidneys can filter from your blood is notably decreasing each year. This is calculated from blood tests that measure your eGFR
- Scans show that your kidneys have increased in size over the last 6 to 12 months
- Your medical history shows there's a high risk your ADPKD will progress quickly (for example, this could be based on your scan results, the particular genes causing your ADPKD, or your family history)

You may want to ask your kidney specialist how quickly they think your ADPKD will progress, and to explain what they are basing this on. Your kidney specialist or other doctor may not be able to tell you this immediately, because they may require the results of further investigations (blood or imaging tests).

Q. If I'm already taking tolvaptan but don't meet the criteria set out by NICE, can I still take it?

A. Yes. If you're already taking tolvaptan, your kidney specialist or other doctor can continue to prescribe it to you until you decide together that it's the right time to stop [1].

Q. How does tolvaptan work?

Tolvaptan works by blocking a hormone called vasopressin in your body [5]. Vasopressin has a few roles in your body, including controlling the amount of water you retain [2]. By counteracting vasopressin, tolvaptan can reduce the levels of a

natural chemical, cyclic AMP, in the kidney that encourages cysts to grow. This can help to slow the speed at which your kidney function declines.

Q. How well does tolvaptan work?

A clinical trial (TEMPO 3/4) tested how well tolvaptan works compared with placebo (a 'dummy' pill) for patients with rapidly progressing ADPKD. After 3 years, patients taking tolvaptan had kidneys that had enlarged at half the rate of those taking placebo [1]. Tolvaptan also reduced the rate at which patients' kidney function got worse [1]. This is very promising and is the first treatment to directly tackle ADPKD and provide a direct benefit to patients with ADPKD.

Q. What are the side-effects of tolvaptan?

The side-effects of tolvaptan include:

- Being thirsty and having to drink more water
- Passing more urine in the day and night
- Changes in liver function tests: less than 1 in 100 patients in trials showed severe changes in the blood tests for liver function. These changes reversed on stopping tolvaptan, but if they had gone unnoticed, they might have caused serious liver problems. As a result, ALL patients being treated with tolvaptan will need regular monitoring of their liver function (i.e. tests at least once a month).

For many people, the benefits of tolvaptan will outweigh the disadvantages. But in the main clinical trial, about 23 in every 100 patients stopped taking tolvaptan because of the side-effects [1].

If you're taking tolvaptan, you'll have regular monitoring to check your liver health [1].

Q. Can I take tolvaptan if my kidney disease is CKD stage 4 or 5?

Tolvaptan is not recommended if you have stage 4 or 5 kidney disease. If you have stage 4 or 5 kidney disease, your kidneys have already been damaged. You won't benefit from tolvaptan, as it cannot reverse damage already done.

Q. Why is the guidance for tolvaptan for England and Wales different to that for Scotland?

NICE in England and the SMC in Scotland use slightly different criteria to make recommendations about medicine prescriptions, so sometimes their advice can differ. The NICE experts who reviewed tolvaptan did not believe there was enough proof that patients with stage 1 disease benefited from tolvaptan to justify the cost of treatment. To make things clearer and to give extra advice to doctors, the Renal Association Working Group on Tolvaptan has developed additional guidance [3].

References

1. NICE. Tolvaptan for treating autosomal dominant polycystic kidney disease. Technology appraisal guidance. Published: 28 October 2015 http://nice.org.uk/guidance/ta358
2. Scottish Medicines Consortium. Tolvaptan 15mg, 30mg, 45mg, 60mg and 90mg tablets (Jinarc®). SMC No. (1114/15). 4 December 2015. https://www.scottishmedicines.org.uk/SMC_Advice/Advice/1114_15_tolvaptan_Jinarc
3. Renal Association Working Group on Tolvaptan in ADPKD. Tolvaptan for ADPKD: Interpreting the NICE Decision. 3 February 2016. http://www.renal.org/docs/default-source/guidelines-resources/tolvaptan_in_adpkd-rawg2015_commentary-030216.pdf#sthash.ywg9pbK6.TzKAcxxx.dpuf
4. KDOQI. KDOQI Clinical Practice Guidelines for Chronic Kidney Disease: Evaluation, Classification, and Stratification. Part 4. Definition and Classification of Stages of Chronic Kidney Disease. Accessed 28 July 2016. http://www2.kidney.org/professionals/KDOQI/guidelines_ckd/p4_class_g1.htm
5. Baur BP, Meaney CJ. Review of Tolvaptan for Autosomal Dominant Polycystic Kidney Disease. Pharmacotherapy 2014;34:605–616) doi: 10.1002/phar.1421

Further advice on tolvaptan

Patients currently on tolvaptan (Jinarc®) can ring a nurse at Otsuka UK for advice: 0800 096 5759 4.00pm to 8.00pm, Mon-Fri.

Published by the PKD Charity

The PKD Charity is a registered charity in England and Wales (1160970), Scotland (SC038279).
A company limited by guarantee. Registered company in England and Wales (9486245)

Information Product Ref No ADPKD.T.2016V1.0

First published September 2016
Due to be medically reviewed September 2018

Authors and contributors

Written by Hannah Bridges PhD.
Reviewed by Dr Daniel Gale (Consultant Nephrologist, Royal Free Hospital London), Professor Albert Ong (Professor of Renal Medicine, University of Sheffield) and Dr Roslyn Simms (Nephrologist, Northern General Hospital Sheffield).

With thanks to all those affected by ADPKD who contributed to this publication and the PKD Charity's Research Advisory Board.

For further copies of this information sheet or other PKD Charity information visit www.pkdcharity.org.uk

If you don't have access to a printer and would like a printed version of this information sheet, or any other PKD Charity information, call the PKD Charity Helpline on 0300 111 1234 (weekdays, 10.00am-4.30pm) or email info@pkdcharity.org.uk

PKD Charity Helpline: The PKD Charity Helpline offers confidential support and information to anyone affected by PKD, including family, friends, carers, newly diagnosed or those who have lived with the condition for many years.

Disclaimer: This information is primarily for people in the UK. We have made every effort to ensure that the information we provide is correct and up to date. However, it is not a substitute for professional medical advice or a medical examination. We do not promote or recommend any treatment. We do not accept liability for any errors or omissions. Medical information, the law and government regulations change rapidly, so always consult your GP, pharmacist or other medical professional if you have any concerns or before starting any new treatment.

This information has been produced under the terms of The Information Standard. References used to produce and review the information are available on request.

We welcome feedback on all our health information. If you would like to give feedback about this information please email info@pkdcharity.org.uk