



## Management of kidney infection in patients with polycystic kidney disease

Many patients (about half) with polycystic kidney disease experience urinary tract / kidney infections. The main symptoms are fever and pain in the kidney area or simply pain on passing urine. These infections occur when bacteria enter the bladder from outside (for example, from the anus to the urethra/genital area). Once bacteria get to the bladder, they can travel the ureters into the kidneys and then into the cysts. Preventing urinary tract infections are very important because this is usually the main cause of severe urinary infections/kidney infections in patients with polycystic kidney disease.

### Prevention:

#### First:

1. Drink plenty of water.
2. If you have diabetes, good glucose control is important.
3. Your doctor will check if kidney stones are the source of your infection.
4. If you are male, addressing any prostate problems are important.
5. For women,
  - Genital hygiene is important, for instance wiping front to back when you use the toilet. We recommend you avoid using scented washes, wipes or flannels. You can use a clean unscented disposable wipe.
  - For sexually active women, we recommend you urinate after sex and avoid using diaphragm or spermicide contraceptives.
  - Over the counter products: There is limited evidence around the effectiveness, but some women may find the following useful:
    - i. D-Mannose supplements (1g twice daily. These are available without prescription)
    - ii. Cranberry tablets (follow the instructions on the product you purchase. These are available without prescription. Do not use this if you are on Warfarin).

**Second:** We could consider the below if the above measures do not fully prevent you from having infections. Antibiotic choice should be based on culture and sensitivity results.

1. Standby 'self-start' course of antibiotics if you have less than one infection per month
  - Urine culture form and a boric acid container will be provided, which you should be given **before** taking antibiotics. You should provide this to your GP or specialist hospital at the earliest convenience.
  - Please seek medical attention if you develop a fever or your symptoms are not improving within 48 hours.
2. For women:
  - Women are able to take a dose of one-off antibiotics after sexual intercourse. These are effective when the infections are mainly caused by sexual intercourse.
    - i. Examples of the antibiotics you will be given (Nitrofurantoin or Trimethoprim).
  - Your doctor will consider a vaginal oestrogen if you are menopausal.
3. A six-month trial of continuous low dose antibiotics if you are having more than one

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infection per month. For women, please ensure that the infections are not being triggered by sexual intercourse. This would be Nitrofurantoin at night, trimethoprim at night or methenamine hippurate.

## **Treatment:**

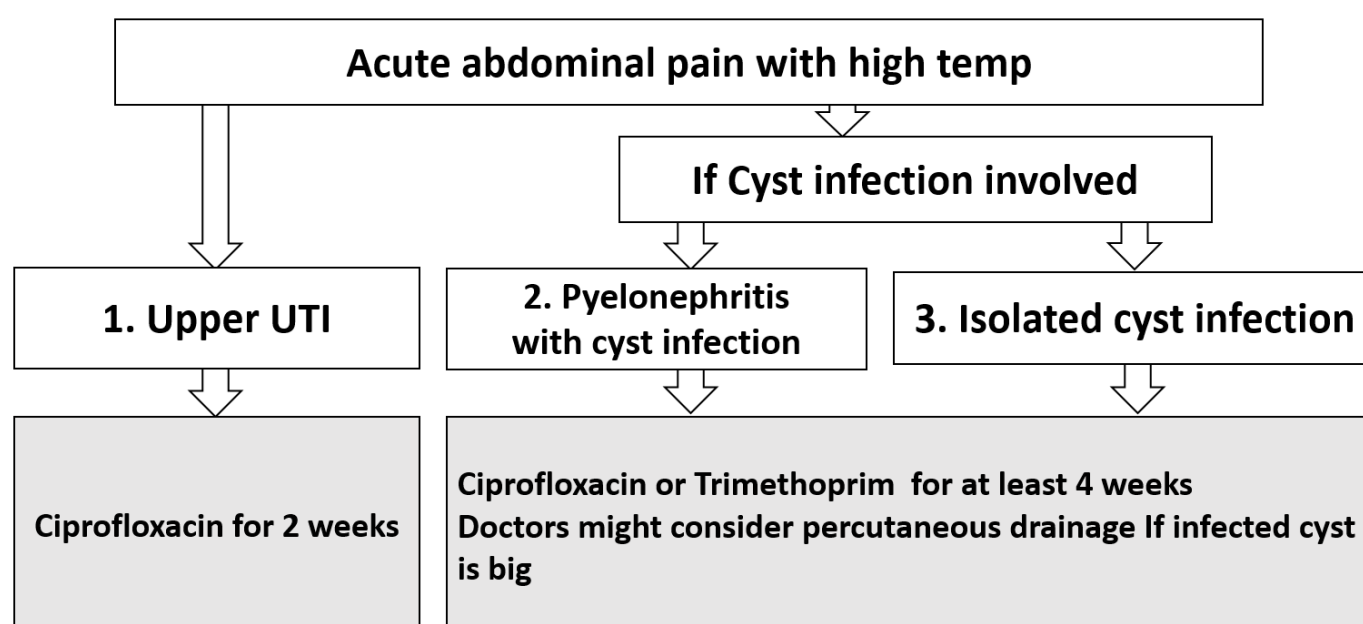
There are generally three types of severe kidney infection in patients with polycystic kidney disease. Importantly, cyst infection can sometimes occur without an apparent urinary tract infection. How the bacteria get into the kidney/cyst is not clear in this case.

- 1. Upper urinary tract infection (UTI): Pyelonephritis**
- 2. Pyelonephritis with cyst infection**
- 3. Cyst infection only**

We usually treat as cyst infection when patients with polycystic kidney/liver disease develop abdominal pain, spiking temperature and high inflammatory marker in blood tests without having signs of other infections. This is because it is better to treat a cyst infection **early** before the symptoms become severe and complications happen from the infection. This is also because diagnosing a cyst infection is not straightforward. The most sensitive imaging to diagnose a cyst infection is PET-CT, but this is not always accessible at short notice.

Wherever possible, testing urine, blood and cyst fluid before the antibiotic use are important. Treating a cyst infection takes longer (at least four weeks) because renal cysts do not contain blood vessels, this mean that antibiotics can have trouble getting into the cysts to where the infection is. A shorter course of antibiotics (under two weeks) often results in an infection coming back or the treatment failing.

## **Urinary tract / Kidney infections with ADPKD**



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