

## Primary Care Management of Lower UTI in Chronic Kidney Disease (CKD)

Urinary tract infection (UTI) is a common occurrence in primary care. The presence of CKD is significant when managing suspected UTI as it can affect selection of appropriate antibiotic treatment and effective infection management is important to prevent further kidney injury. In the case of renal transplant patients seek advice from the renal service. This guidance applies to non-pregnant individuals who are not catheterised.

Patients with renal impairment are possibly more likely to have a resistant strain<sup>1</sup> so always send urine for culture when UTI is suspected and be guided by sensitivities in the first instance. However where immediate treatment is required the following table gives guidance for empiric management of UTI where CKD co-exists. It may be necessary to contact microbiology to obtain the full range of sensitivities available.

CKD	1 <sup>st</sup> Line	2 <sup>nd</sup> Line (or as per sensitivities)
CKD 3a female	Trimethoprim* 200mg twice daily for 3 days	Pivmecillinam 400mg stat then 200mg three times daily for 3 days
CKD 3b female	Pivmecillinam 400mg stat then 200mg three times daily for 3 days	Trimethoprim* 200mg twice daily for 3 days
CKD 4/5 female	Pivmecillinam 400mg stat then 200mg three times daily for 3 days	Ciprofloxacin** 250mg bd for 3 days (but see cautions)
CKD 3a male	Trimethoprim* 200mg twice daily for 7 days	Pivmecillinam*** 400mg stat then 200mg three times daily for 7 days
CKD 3b male	Pivmecillinam*** 400mg stat then 200mg three times daily for 7 days	Ciprofloxacin** 250-500mg bd for 7 days (but see cautions)
CKD 4/5 male	Pivmecillinam*** 400mg stat then 200mg three times daily for 7 days	Ciprofloxacin** 250mg bd for 7 days (but see cautions)

Where prostatic involvement is known or suspected in males with UTI, a 7 day course of antibiotics is considered appropriate. At least 50% of men with recurrent UTI and over 90% of men with febrile UTI have prostate involvement.<sup>2</sup>

### Cautions

\*Due to the risk of hyperkalaemia, trimethoprim should be avoided

- With co-prescription of **spironolactone**<sup>3</sup>
- With co-prescription of **ACEI or ARB**

However it is unlikely that 3 days of trimethoprim for uncomplicated UTI in females with CKD 3a will cause any significant problems, even with spironolactone or ACE / ARB, so this can be considered as a treatment option.

\*\*Ciprofloxacin is not usually an appropriate empiric choice for UTI due to the significantly increased risk of *Clostridium difficile* infection in renal impairment. However due to the limited options available when managing UTI in patients with CKD 4 and 5 (also 3b in men) it may be used with caution.

\*\*\*Pivmecillinam for 7 days is 'off label' for complicated UTI. A 14 day regime is licensed for some forms of salmonellosis so there is some experience in the use of longer regimes.

<sup>1</sup> Health Protection Agency [http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1194947404720](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1194947404720)

<sup>2</sup> Management of suspected bacterial urinary tract infection in adults. Scottish Intercollegiate Guideline Network Guideline No.88 July 2012.

<sup>3</sup> Antoniou et al. Trimethoprim-sulfamethoxazole induced hyperkalaemia in elderly patients receiving spironolactone: nested case-control study. *BMJ* 2011;343:d5228