Microbiology Fact Sheet

This Fact Sheet is intended as a guide only and does not equate to expert opinion. Interpretation of results should always be taken in context with the patient’s current condition and clinical review.

Urine MC&S – interpretation of results

- Urine microscopy, culture and susceptibility (MC&S) testing is used to detect a urinary tract infection (UTI):
  - in the lower parts of the urinary tract (the bladder), this infection is called cystitis
  - in the upper part of the urinary tract (the kidneys), this infection is called pyelonephritis
- Sometimes bacteria are found in urine samples without an infection being present, this is asymptomatic bacteriuria; up to 25% of elderly women have this and treatment is generally not recommended.

**Microscopy**

- If there is a high white cell, polymorph or pus cell count >40 x 10^6/L, ++ or +++ in urine, this suggests an infection is more likely to be present.
- If squamous epithelial cells are present >10 x 10^6/L, ++ or ++++, this suggests contamination from the skin and the urine specimen is not a good sample.

**Culture**

- If there is a colony count of >10^6/L, ++ or +++ of a bacteria, this is more likely to be a true infection.
- Growth of more than one bacteria species is uncommon and suggests possible contamination (especially in non-catheter specimens).
- Common bacteria likely to cause UTIs include: *Escherichia coli*, *Proteus*, *Klebsiella*, *Enterococcus* and *Staphylococcus saprophyticus*.

**Susceptibility**

- If the patient is taking an antibiotic to which the bacteria is reported as resistant (R) or intermediate (I), then this treatment may need to be changed to an antibiotic that is reported as susceptible (S).
- If there is more than one antibiotic to which the bacteria are reported as susceptible (S), the patient should be prescribed the one with the narrowest spectrum.

**Note:**

Dipsticks: dipsticks alone are not reliable in the diagnosis of a UTI, a urine sample should be sent for culture for confirmation where ever possible.

Catheter specimens: samples taken through a urinary catheter are almost always colonised by bacteria, these do not need to be treated if the patient is otherwise well.

Whether or not antibiotics are given, it is important to remember that infection will not clear without changing the catheter and in many cases this is all that is required; antibiotics may then be avoided.