

best tests

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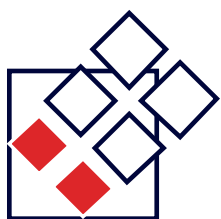
Dr A GP

NZMC: 00000

**Update: Laboratory
Investigation of UTI**

Your Urine Culture Data

Fasting vs Post Prandial glucose



bpac^{nz}
better medicine

Laboratory Investigation of UTI

Key messages

Women with symptoms of uncomplicated urinary tract infection do not require urine culture

About half of all women will have a UTI in their lifetime and one quarter will have recurrent infections. Women with symptoms of uncomplicated UTI do not require urine culture. Streamlining the diagnostic process could improve patient satisfaction and decrease costs without compromising care.

Screening for asymptomatic bacteriuria is not recommended except in pregnant women

The occurrence of asymptomatic bacteriuria increases with age. Patients with asymptomatic bacteriuria do not benefit from antibiotic treatment. Unnecessary antibiotic treatment leads to increased adverse effects, emergence of resistant organisms and cost associated with the use of antibiotics.

Comparing urine culture testing

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Urine culture graphs removed

Prepared for Dr A GP

The national trends in requesting urine cultures are interesting:

- In early childhood there is an increase in the number of urine cultures performed. UTIs occur in as many as 5 percent of girls and 1 to 2 percent of boys. Presentation is variable, ranging from non-specific symptoms to systemic illness.

Urine culture is always appropriate in children when UTI is suspected.

- Urine culture is uncommon in men between the ages of 10 to 30 years, but increases to a fairly constant rate between the ages of 50 to 80 years. This may be mainly attributable to prostatic enlargement.

In men urine infection is always considered complicated and urine culture is always appropriate when UTI is suspected.

- In women there is an increase in urine cultures in the 70 to 79 year age group. This may be attributable to screening for asymptomatic bacteriuria. We cannot be sure what contribution inappropriate screening for asymptomatic bacteriuria plays in this increase.

Patients with asymptomatic bacteriuria do not benefit from antibiotic treatment.

Consider the difference between rates of urine culture for women and men

In all age groups, women have more urine cultures requested than men. Nationally, the ratio of urine testing is approximately 1.0 male : 2.5 female. Much of the difference may be accounted for by urine cultures in pregnancy and the higher rates of complicated UTIs in women. However we feel part of the difference is unnecessary urine cultures being performed for uncomplicated UTIs in women.

The table below shows your ratio of requesting urine cultures in men and women compared with your peers.

Table removed

If you would like to check the appropriateness of your own urine culture testing in women you may like to undertake the 'Laboratory Investigation of UTI: Clinical Audit' which is available from [bpac^{nz}](#). This is a simple audit and is approved as a RNZCGP CQI activity.

Fasting vs Post Prandial glucose

“no quick answer”

Following the bpac^{nz} campaign ‘Laboratory Testing in Diabetes’, we were asked why fasting glucose was the best initial test for diagnosing diabetes, and the role of the post prandial glucose. We contacted Rick Cutfield for a comparison and explanation of the role of these tests.

Screening guidelines throughout the world recommend fasting glucose as the best test, mainly because of standardisation, reproducibility and reasonable correlation with the oral glucose tolerance test. However there are some problems with this. The specificity of a fasting glucose greater than 7.0 mmol/L is over 95% but sensitivity is only about 50%. It is less reliable and sensitive in the elderly and not reliable in all ethnic groups. As a result some people with fasting glucose of 5.5 – 6.0 mmol/L will have diabetes on further testing.

Post prandial tests are even more difficult to interpret because of the different glycaemic index of foods and different times after meals but they may be quite important prognostically and may predict cardiovascular disease better than the fasting levels. A casual glucose (without regard to time of last meal) of greater than 11 mmol/L on two occasions is diagnostic of diabetes and a casual glucose less than 6.9 mmol/L is probably normal. Tests in between these may end up in the impaired glucose tolerance area.

We have to balance the ease of random glucose, the slightly more inconvenient fasting test and the greatly more inconvenient oral glucose tolerance test with the importance of making an accurate diagnosis.

Despite all of this I suggest that most people can do a fasting glucose if it is explained and all international guidelines use this test.

I still stick with the principles below:

- If the fasting glucose is greater than 7.0 mmol/L with classic symptoms (on two occasions if asymptomatic) then diabetes is diagnosed.
- If the fasting test is between 6.1 - 6.9 mmol/L order an oral glucose tolerance test.
- If the fasting test is between 5.5 - 6.0 mmol/L order an oral glucose tolerance test if the person is in a high risk group.
- If the fasting test is less than 5.5 mmol/L, it is normal and the patient can be retested in 3 – 5 years depending again on risk factors.

HbA_{1c} is not yet reliable enough to be used as a screening or diagnostic test.

I always see the glucose as part of the general cardiovascular screening package and as you know it is only one part of the screening program with fasting lipids, blood pressure and smoking all crucial. The screening targets are moving and we need to continually update them as more evidence is provided. But for now I'd stick to the fasting glucose as our preferred screening tool.

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