

# THE PATHCARE NEWS

## CSF analysis in acute bacterial meningitis

Examination of the cerebrospinal fluid (CSF) is crucial for establishing the diagnosis of bacterial meningitis. Available tests include cell count, chemistry, Gram stain, culture and sensitivity testing. Rapid tests to identify the causative organism include agglutination tests for bacterial antigens and nucleic acid amplification tests, such as the polymerase chain reaction (PCR).

Latex agglutination tests are no longer routinely recommended because results do not appear to modify the decision to administer antimicrobial therapy. False-positive results have been reported in the literature and false negative results can occur due to a prozone effect in the presence of a very high antigen load. *Neisseria meningitidis* group B also often test negative due to the limited immunogenicity of the meningococcal polysaccharide.

PathCare offers a multiplex PCR panel as the most sensitive method to diagnose the most common and important bacterial and viral pathogens causing meningitis (see table 1). Several studies compared CSF Gram stain and culture with multiplex PCR. In these studies PCR was shown to be more sensitive than Gram stain and culture for detecting bacterial pathogens included in the PCR panel. PCR may also be particularly useful in patients who may have negative cultures due to prior antimicrobial therapy. A positive result on a viral panel may confirm the presence of critical infections like Herpes encephalitis and also exclude bacterial infection, which may influence the decision to initiate or discontinue antimicrobial therapy.

In view of this enhanced diagnostic capacity, PathCare will no longer do bacterial antigen testing as part of routine CSF analysis. However, if bacterial antigen testing is required it can still be specifically requested, bearing in mind that at least 1 ml of CSF is needed to perform this.

**PCR tests can be requested as part of routine CSF analysis or as an after request once the chemistry and cell count is available. PCR tests needs 0.2 ml of CSF. The bacterial meningitis PCR includes *Streptococcus pneumonia*, *Haemophilus influenza B*, *Neisseriae meningitides*, Group B streptococcus and *Listeria monocytogenes*.**

**PathCare also offers a viral meningitis panel which includes enterovirus, herpes simplex 1 and 2, EBV, CMV, varicella and human herpes virus 6 (HHV 6). Enterovirus PCR can be requested separately.**

Bacterial meningitis PCR	Viral meningitis PCR	Enterovirus PCR
Streptococcus pneumonia	Enterovirus	Enterovirus
Haemophilus influenza type B	Herpes simplex virus 1 & 2	
Neisseriae meningitides	Ebstein Barr virus (EBV)	
Group B streptococcus	Cytomegalovirus (CMV)	
Listeria monocytogenes	Varicella zoster virus	
	Human herpes virus 6 (HHV6)	

**Table 1:** Multiplex PCR panels for the diagnosis of infective meningitis

**Compiled by:** Dr Delene Brink, Clinical Microbiologist, PathCare

### References:

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