



MOLECULAR TESTING - CYTOMEGALO VIRUS (CMV)

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BACKGROUND INFORMATION:

Cytomegalovirus is a DNA virus and a member of the Herpesviridae family. This group includes HSV, VZV, EBV, and HHV-types 6, 7, and 8. Characteristically, most of the members of this family are known for establishing latency, possessing a high prevalence rate, and causing disease in immunologically compromised hosts. Consequently, transplant, cancer or AIDS patients, and newborns are the individuals at highest risk for severe disease.

Since CMV infections are acquired throughout life, most infections usually develop as a result of CMV reactivation. Primary infection may lead to severe consequences, especially in the neonate, as well as in the transfused, transplanted, or older adult. For this reason, the use of sensitive, specific, and rapid testing to support a diagnosis of CMV infection is critical to proper patient management.

CLINICAL UTILITY OF CMV TESTING

Infection with cytomegalovirus (CMV) is a significant cause of morbidity and mortality in transplant recipients and other immunocompromised hosts. Specific neurologic syndromes associated with CMV infection include sub acute radiculomyelopathy, peripheral neuropathy, and encephalitis.

CMV-associated central nervous system (CNS) disease occurs most commonly in immunocompromised patients. Histologic evidence of CMV infections in autopsy brain tissue was identified in 20% to 40% of AIDS patients. In separate studies, CMV (DNA) was the most common herpes virus (29/181, 16/49) detected from cerebrospinal fluid of patients with AIDS.

CNS infections with CMV can also occur in immunocompetent patients. CMV is a leading cause of congenital viral infections worldwide, and laboratory testing by PCR is useful in the diagnosis of neonatal CMV disease.

METHOD DESCRIPTION AND RESULTS

Qualitative test is determining the presence or absence of CMV.

It is more sensitive than any of the other tests and provides clinically useful information in a timely fashion. The presence of specific CMV DNA in a clinical specimen may suggest active infection, reactivated infection or latent infection without disease.

Quantitative test detects viral copies in given sample.

TEST NAME	METHOD	SPECIMEN	REPORTING TIME
PCR CMV – QUALITATIVE TEST	NESTED PCR	EDTA Blood	2 Days
PCR CMV – QUANTITATIVE TEST	REAL TIME PCR	EDTA Blood	3 DAYS