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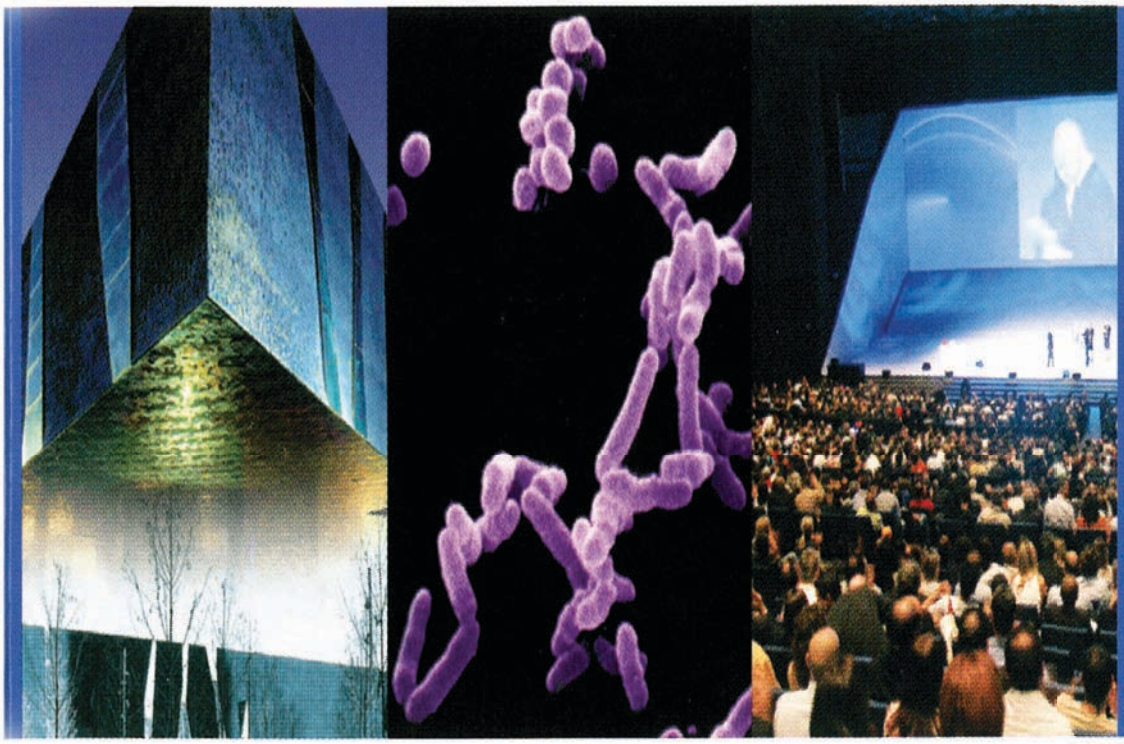
ESCMID EUROPEAN SOCIETY OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES



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Diagnostic serology

Sunday, April 20, 2008, 12:30 - 13:30

Virus-specific antibody activity of different subclasses of immunoglobulins G in Cytomegalovirus infections

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Objectives: Patients with primary, reactivated or convalescent phase of Cytomegalovirus (CMV) infections were examined for antiviral antibodies of the IgG subclasses. The purpose of this study was to investigate the diagnostic value of anti- CMV IgG subclasses for diagnosis of acute CMV infection.
Methods: A total of 52 serum samples from patients with different phases of CMV infection were tested for anti-CMV IgG, IgM and IgG avidity by commercially available enzyme immunoassay (RPC “Diagnostic systems”, Russia). Anti CMV IgG specific to envelope glycoprotein (gB) were studied to confirm recent infections. The reactivity pattern of IgG subclasses to individual CMV proteins (pp150, pp52, pp38, pp28) were analyzed with subclass specific monoclonal antibodies from Zymed Laboratories Inc., USA.
Results: The distribution of CMV-reactive IgG subclasses among groups with different CMV infection phases was analyzed. CMV-specific IgG1 was predominant in all groups. In primary infection frequency of anti-CMV IgG3 is significant higher (75%) than in latent phase (13%, P=0,001) and reactivated CMV infection (23%, P=0,032). Frequency of anti-CMV IgG4 is significant higher (62%) for reactivated CMV infection than for convalescent phase (10%, P=0,001). No difference was observed in total IgG subclass value in all analyzed groups.
No significant difference was found for IgG2 and IgG4 reactivity to individual CMV proteins between studied groups. In primary infection anti-pp28 IgG1 was detected rarer (25%) than in reactivated CMV infection (85%, P=0,018). Among patients with acute CMV infection (recent or reactivated) frequency of anti-pp150 IgG3 positive sera is significant higher (38%) than in group of latent infection (0%, P=0,001, P=0,003).
Conclusions: Frequencies of anti-CMV IgG4 and anti-pp150 IgG3 are different for acute and latent CMV infection and anti-CMV IgG3 and anti-pp28 IgG1 – for primary and reactivated CMV infection. The measurement of IgG subclasses reactive with individual CMV proteins may be a sensitive indicator of CMV infection phases.

Diagnostic serology

Sunday, April 20, 2008, 12:30 - 13:30

Significance of laboratory findings for the diagnosis of neurosyphilis

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Objectives: The usage of recombinant T. pallidum antigens in ELISA and passive hemagglutination assay (TPHA) has the potential for improvement lab diagnostics of neurosyphilis. The aim of this study was to evaluate the diagnostic relevance of cerebrospinal fluid (CSF)-tests, to analyze antibody reactivity pattern in CSF from neurosyphilis patients by ELISA and TPHA and new criterion of the intrathecal production of specific IgG definition.
Methods: Four full-length recombinant proteins (TmpA, 47, 17, 15 kDa) were expressed in E. coli and then used individually to develop ELISA and TPHA tests. The FTA-ABS, TPI, ELISA, TPHA, VDRL, CFT (complement fixation test) tests were performed on CSF samples from 22 patients with a diagnosis of active neurosyphilis, from 4 patients treated for neurosyphilis ànd from 17 patients without syphilitic CNS involvement. TPHA-IgG titres have been determined in paired serum and CSF samples from 13 neurosyphilis patients and 1 patient without syphilitic CNS involvement.
Results: When CSF was used as diagnostic fluid sensitivities of FTA-ABS, ELISA, TPHA (82,3%, 86,4%, 86,4% accordingly) were higher in comparison with TPI, VDRL, CFT tests (62,5%, 58,8%, 60% accordingly). However, VDRL and CFT demonstrate 100% specificity in contrast with treponemal tests (specificity 75 - 84,6%). The best result matched with clinical diagnosis of neurosyphilis was demonstrated by next three combinations: FTA-ABS+ELISA+TPHA, FTA-ABS+ELISA+VDRL or FTA-ABS+TPHA+VDRL – 88,4%.
Antibodies specific to 17 kDa (88,9 – 90,9%) and TmpA (72,2 – 86,4%) were prevalent in CFS samples. There is no correlation in titers of antibodies specific to individual T. pallidum recombinant antigens in paired serum and CFS samples from patients with neurosyphilis. In the same time strong correlation was observed when paired CFS/serum samples from patient without syphilitic CNS were tested.
Conclusions: Different antibody reactivity pattern in paired CFS/serum samples may indicate intrathecal production of antitreponemal antibodies.