

W80

Educational Workshop

Laboratory diagnosis: utility of different test systems

Lyme borreliosis (LB), caused by spirochaetes of the *Borrelia burgdorferi* genospecies complex, is the most commonly reported tick-borne infection in Europe and North America. Despite significant progress in the diagnostics of LB, including a better characterization of antigens, immune response mechanisms and the introduction of new molecular and immunological detection methods, the recognition of a specific antibody response still remains the mainstay of diagnostics for most medical laboratories. Current guidelines propose the combination of highly sensitive screening assays, such as ELISAs or CLIAs with very specific confirmatory tests, such as immunoblots or line blots, to guarantee a cost-effective, sensitive and specific diagnostic approach. For a correct interpretation of such serological test results, however, the investigator must always consider a whole series of clinical and laboratory facts. In addition, the quality and standardization of the currently used diagnostic procedures were repeatedly questioned by proficiency testing surveys and clinical evaluation of such assays. In the view of the non-specific nature of the disease and the sometimes flawed test algorithms, LB diagnostics for many clinicians and laboratories still remain a diagnostic challenge. Consequently, concise clinical information supported by relevant laboratory data must be used in the clinical setting to achieve in correct diagnosis of LB. This lecture will summarize the diagnostic performance of frequently applied assays and the current laboratory concepts used for laboratory diagnosis of LB, with a special emphasis on when to order a specific test method and how to interpret it correctly in the context of additional clinical and laboratory information.