

eP083

ePoster Viewing

Lyme borreliosis

IDENTIFICATION OF BORRELIA BURGdorFERI COMPLEX SPECIES USING MALDI-TOF MASS SPECTROMETRY, IT'S POSSIBLE !

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Objectives : Evaluate the MALDI-TOF mass spectrometry as a direct identification tool for clinical *Borrelia burgdorferi* sensu lato strains.

Methods : A spectrum database was developed in Bruker® MALDI-TOF biotyper 2, using 11 reference strains of *B. burgdorferi* sensu lato. Bacterial cultures were grown in BSKII medium to 10⁶-10⁸ cell/ml. A volume of 1 ml of culture was centrifuged and the pellet was washed before use for MALDI-TOF. Then, clinical strains (30 strains of *B. burgdorferi* sensu stricto, 30 strains of *B. afzelii*, 22 strains of *B. garinii*, 3 strains of *B. bavariensis*, 1 *B. lusitaniae*, 1 *B. valaisiana*, 1 *B. lusitaniae* and 1 *B. bissetii*), previously identified at the species level using molecular tools were grown and identified by MALDI-TOF using this database.

Results : According to the rules of biotyper software (species identification: score>2, genus identification score: 1,7-2), all the 89 clinical strains were identified to the species level with 100% accordance to the molecular identification. These results were directly obtained from the pellet without protein extraction. Cluster analysis reveals several groups within *B. afzelii* leading to further studies of virulence and clinical spectrum of each of these sub-groups.

Conclusions: MALDI-TOF mass spectrometry allows to identify easily *B. burgdorferi* sensu lato strains at the species level and is usable for clinical diagnosis.