eP074
ePoster Viewing
Lyme borreliosis

INTRATHECAL TH17 RESPONSE IN LYME NEUROBORRELIOSIS AND THE RELATION TO CLINICAL DISEASE COURSE.

P. Gyllemark[1], A. Matussek[2], P. Forsberg[3], J. Ernerudh[4], **A.J. Henningsson**[2]

[1]Infectious Diseases, Ryhov County Hospital, Jönköping, Sweden ; [2]Clinical Microbiology, Ryhov County Hospital, Jönköping, Sweden ; [3]Infectious Diseases, Linköping University, Linköping, Sweden ; [4]Clinical Immunology, Linköping University, Linköping, Sweden

Objectives:
The aim of this study was to assess the intrathecal Th17-related immune response in patients with Lyme neuroborreliosis (LNB), and to relate the findings to clinical symptoms and course of the disease.
Methods:
178 patients investigated for suspected LNB during 2007-09 were retrospectively included and stratified into four groups based on cerebrospinal fluid (CSF) findings regarding pleocytosis and Borrelia-specific antibody index (AI). Group 1 (n=49) had definite LNB with CSF pleocystosis and elevated AI. Group 2 (n=17) had possible LNB without pleocytosis but with elevated AI. Group 3 (n=14) had possible early LNB with CSF pleocytosis, negative AI, and short duration of the neurological symptoms that were strongly suggestive of LNB (e.g. head- and neckpain in combination with facial palsy or radiculitis). Group 4 (n=98) had normal CSF findings, and was regarded as a non-LNB reference group.
Clinical data was collected from medical charts using a standardised protocol. Serum and CSF from all the included patients were analysed for the Th17-related cytokines and chemokines CXCL1 (GRO-alfa), IL-17A, and CCL20 (MIP3-alfa) by Luminex xMAP technology.
Results:
CXCL1 and IL-17A was significantly higher in CSF from patients in group 1 (definite LNB) as compared to group 4 (the reference group). CCL20 was significantly more elevated in CSF from patients in groups 1-3 (definite and possible cases) compared to group 4. No significant differences between the groups were found in cytokine or chemokine levels in serum. Within group 1, no correlations were found between the cytokine or chemokine levels and a) age, b) duration of symptoms prior to the lumbar puncture, c) pleocytosis in CSF, or d) duration of symptoms after treatment.
Conclusions:
The data indicates a pronounced intrathecal Th17 response in most, but not all, LNB patients. CXCL1, IL-17A and CCL20 in CSF do not seem to be useful clinical predictors of the disease course, although the retrospective study design may have influenced this finding.
The precise role of the intrathecal Th17 immune response in LNB remains to be established, and prospective studies with standardised follow-up are warranted.