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HYPERREFLECTIVE RETINAL FOCI IN MULTIPLE SCLEROSIS

Oral

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Purpose:

Optical coherence tomography (OCT) allows us to identify hyperreflective retinal foci (HRF) which seems to represent clusters of activated microglia. Central nervous tissue microglia is dramatically activated in multiple sclerosis (MS). We aimed to investigate HRF association with cerebrospinal fluid (CSF) cytokines and MRI parameters in relapsing-remitting MS (RRMS).

Methods:

Nineteen patients with RRMS at clinical onset underwent brain 3 Tesla MRI and CSF examination. Cytokines and chemokines in the CSF were analyzed by multiplex technology. OCT analysis, including HRF count, was performed on all patients.

Results:

In RRMS, HRF at the level of the ganglion cell layer (GCL) and the inner nuclear layer (INL) correlated well with soluble markers of microglial origin in CSF and MRI parameters of cortical pathology.

Conclusions:

The association of HRF with intrathecally produced monocyte/microglia-derived cytokines confirms their microglial origin and suggests they are worth of further evaluation. HRF appear to be promising biomarkers for assessing and monitoring in vivo the mechanisms behind microglial activation and proliferation in inflammatory and neurodegenerative brain disorders.