Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

of immunodysregulation in MS (i.e., relatively lower $T8^+$ cells, relatively higher $T4^+$ cells, and/or a higher T4/T8 ratio).

Fifteen carefully screened MS patients were divided via median splits on the CES-D Depression Scale and the State Trait Anxiety Inventory into high and low depressed and anxious groups. The high depressed group demonstrated a higher mean $T4^+$ subpopulation percentage compared to the low depressed group ($t = -2.80$, $p<.01$). The high anxious group had a lower $T8^+$ percentage ($t = 1.78$, $p<.05$) and a higher T4/T8 ratio ($t(13) = 2.13$, $p<.05$). There were no differences in either severity of illness or age between the two groups.

The implications of this relationship between immune markers and mood in MS are discussed.

An Analysis of Antibodies to the Paramyxovirus SV5 in the CSF's of Patients with MS. K.K.A. Goswami*, R.E. Randall*, L.S. Lange and W.C. Russell*. (Dept. of Biochemistry and Microbiology, University of St. Andrews, Fife, Scotland*, and Dept. of Neurology, Charing Cross Hospital, London, England**)**

About 50% of multiple sclerosis patients appeared to have specific antibodies to the paramyxovirus SV5 in their cerebrospinal fluids whereas only 10% of neurological control patients had such antibodies and all of these had severe blood-brain barrier damage. In addition it was found that these SV5 antibodies constituted a significant proportion of the total CSF immunoglobulin in some MS patients and that the oligoclonal bands seen after isoelectric focusing of MS CSF's containing such specific SV5 antibodies could be absorbed out with a partially purified preparation of SV5 virus but not with measles virus.

Cervical Lymph Nodes Secrete Antibodies Specific for Human Serum Albumin(HSA) Microinfused Into Cerebrospinal Fluid (CSF). C. Harling-Berg, P. Knopf and H.F. Cserr. (Brown University, Providence, RI)

A significant fraction of HSA (13%-50%) infused into brain or CSF drains via the olfactory nerve sheath and cribriform plate into deep cervical lymph, reaching cervical lymph nodes in high concentration (Bradbury & Cserr, In: Exp Biol Lymph Circ Elsevier, 1985, 355-394). We have tested the possibility that the cervical lymph nodes are involved in systemic immunization against antigen leaving the central nervous system (CNS), and also compared their involvement with that of the spleen. A sterile HSA saline solution (90ug/10ul) was microinfused (0.5ul/min) through a catheter implanted 7 days previously into the lateral ventricle of Sprague-Dawley rats (N=11). Antibody titers to CSF infused HSA were measured 14 days post-infusion in serum, and in cell cultures of spleen (SPL) and cervical lymph nodes - superficial (SCLN) and deep (DCLN). As a control, inguinal lymph nodes (ILN) were also cultured. For each rat, the white blood cell (WBC) concentration for lymph node and spleen cultures were equal (1-2 x 10^7 WBC/ml media). Cultures were maintained for 4-5 days. HSA antibody titers were measured using an enzyme-linked assay and were expressed per 10^7WBC. HSA antibody titers secreted in DCLN and SCLN cultures ranged from 5 to 111. HSV antibodies were not detectable (ND) in ILN cultures at starting dilutions of 1:5. Titers in SPL cultures ranged from ND 1:5 to 14. The geometric means of the HSA antibody titers in DCLN and SCLN cultures were significantly ($P<.001$) greater than the mean titer from SPL cultures. Mean titers were 25, 20 and 3, respectively. The geometric mean of serum HSA antibody titers was 2,228. These data demonstrate that an antigen-specific immune response is elicited in cervical lymph nodes following CSF antigen

infusion, indicating that these nodes have a significant role in systemic immunization. (Supported by USPHS Grant NS-11050.)

Role of Cellular Immune Factors in Coronavirus A59 Induced Demyelination. M.J.M. Koolen*, M.J. Buchmeier and C.J. Lucas*. (Dept. of Immunology, Scripps Clinic and Research Foundation, LaJolla, CA, and *Central Lab Netherlands Red Cross Blood Transfusion Service, incorporating the Lab of Exp and Clin Immunology of the University of Amsterdam, Amsterdam, The Netherlands)

Cellular immune factors involved in mouse hepatitis virus (MHV) strain A59 and a temperature-sensitive mutant (ts-342)-induced demyelination were studied in normal and athymic nu/nu BALB/c mice as well as in mice depleted of a specific subset of T lymphocytes in vivo.

Intracerebral inoculation of normal BALB/c mice with 10*5 PFU of ts-342 resulted in prolonged infection of the central nervous system, whereas 100 PFU of the wild type virus were lethal.

In athymic nu/nu mice, both wild type virus and ts-342 caused a fatal hepatitis suggesting that cellular immune factors are involved in the protection of mice against lethal MHV-infection.

Furthermore, significant levels of proliferation, measured as ^{3}H-thymidine incorporation, were observed when splenocytes isolated from ts-342 infected normal mice were cultured in the presence of either viral antigen or myelin basic protein (MBP). The responder cells were shown to be T lymphocytes, and in vivo depletion of the L3T4 population reduced the prolifeative response to MBP to baseline levels.

Immunoblot Analysis of AntiAChR Antibodies in Myasthenia Gravis. R. Mantegazza, P. Romagnoli, F. Baggi, O. Simoncini, D. Neumann*, F. Cornelio and S. Fuchs*. (Dept. of neuromuscular Disease, Milan, Italy and *Dept. of Chemical Immunology, The Weizmann Institute of Science, Rehovot, Israel)

Fine specificity of anti acetylcholine receptor antibodies (a-AChR-Abs) in Myasthenia Gravis (MG) and their relationship to the pathogenesis are not completely defined. By the mean of immunoblotting techniques we tried to achieve more insight in the composition of the different Ab-subpopulations. AChR from Torpedo California (T-AChR) was purified, blotted onto nitrocellulose paper, probed with sera from patients in different clinical conditions and revealed on autoradiography by means of Prot A ^{125}I. 45 patients were analyzed with this method and the double immunoprecipitation conventional method. Sera from differently affected patients exhibited different binding patterns to the subunit of T-AChR.

Higher sensitivity was displayed by blot technique. Qualitative analysis showed that higher immunogenic epitopes are shared by α, β and δ subunits; γ-subunit showed only a mild binding capacity. Sera from patients affected by ocular forms of MG displayed a greater binding to α-subunit while in sera from generalized MG such a preponderance was not found. Stronger positivity for α and δ subunit was found among younger patients (i.e., onset of MG before 40 yrs).

IgG Subclasses of Antibodies Reacting With HIV and Myelin Basic