The Emerging Role of Epigenetics in Stroke: III. Neural Stem Cell Biology and Regenerative Medicine

Qureshi and Mehler (page 294) complete their 3-part series with this review in which they survey the therapeutic potential of exogenous stem cells and endogenous neural stem and progenitor cells (NSPCs). They also highlight innovative technological approaches for designing, developing, and delivering epigenetic therapies for targeted reprogramming of endogenous pools of NSPCs, neural cells at risk, and dysfunctional neural networks to rescue and restore neurological function in the ischemic brain.

Advances in Translational Research in Neuro-oncology

Fueyo and colleagues (page 303) document therapeutic advances in the field of neuro-oncology that were made during the last decade. First, there were conceptual advances in the molecular and cell biology of malignant gliomas including the discovery in 2004 of brain tumor stem cells. Second, the Cancer Genome Atlas project has been extremely useful in the discovery of new molecular markers, including mutations in the IDH1 gene, and has led to a new classification of gliomas based on the differentiation status and mesenchymal transformation. In addition, use of the 1p/19q marker and O6-methylguanine-DNA methyltransferase methylation status have been identified as guides for patient selection for therapies and represent the first steps toward personalized medicine for treating gliomas. Finally, progress has been made in treatment strategies including the establishment of temozolomide as the criterion standard for treating gliomas, the adoption of bevacizumab in the clinical setting, and developments in experimental biological therapies including cancer vaccines and oncolytic adenoviruses.

Vitamin D, Pregnancy, Breastfeeding, and Postpartum Multiple Sclerosis Relapses

Langer-Gould et al (page 310) determine whether low levels of 25-hydroxyvitamin D (25(OH)D) contribute to the increased risk of postpartum multiple sclerosis (MS) relapses. They report that pregnancy and exclusive breastfeeding are strongly associated with low 25(OH)D levels in women with MS. However, these lower vitamin D levels were not associated with an increased risk of postpartum MS relapses. These data suggest that a low level of vitamin D in isolation is not an important risk factor for postpartum MS relapses.

High Prevalence of Hypovitaminosis D in Patients With Early Parkinson Disease

Evatt and colleagues (page 314) examine the prevalence of vitamin D insufficiency in a cohort of untreated patients with early Parkinson disease (PD) (diagnosed within 5 years of study entry). They find that the prevalence of vitamin D insufficiency in patients with early-stage PD was similar to or higher than those reported in previous studies. Vitamin D concentrations did not decrease during progression of PD. They recommend that further studies are needed to elucidate the natural history and significance of vitamin D insufficiency in PD.

Identification of Novel Loci for Alzheimer Disease and Replication of CLU, PICALM, and BIN1 in Caribbean Hispanic Individuals

Lee and colleagues (page 320) identify novel loci for late-onset Alzheimer disease (LOAD) in Caribbean Hispanic individuals and replicate the findings in a publicly available data set from the National Institute on Aging Late-Onset Alzheimer Disease Family Study. Their genome-wide search of Caribbean Hispanic individuals identified several novel genetic vari-
ants associated with LOAD and replicated these associations in a white cohort. They also replicated associations in *CLU*, *PICALM*, and *BIN1* in the Caribbean Hispanic cohort.

**Temporoparietal Hypometabolism in Frontotemporal Lobar Degeneration and Associated Imaging Diagnostic Errors**

Womack et al (page 329) evaluate the cause of diagnostic errors in the visual interpretation of positron emission tomographic scans with fluodeoxyglucose F18 (FDG-PET) in patients with frontotemporal lobar degeneration (FTLD) and patients with Alzheimer disease. They report that temporoparietal hypometabolism in FTLD is common and may cause inaccurate interpretation of FDG-PET scans. The accurate interpretation of FDG-PET scans in patients with dementia cannot rest on the presence or absence of a single region of hypometabolism but rather must take into account the relative hypometabolism of all brain regions.

**Cognitive Decline in Prodromal Alzheimer Disease and Mild Cognitive Impairment**

Wilson et al (page 351) characterize the course of cognitive decline during the prodromal phase of Alzheimer disease. They find that dementia due to Alzheimer disease is preceded by about 5 to 6 years of accelerated decline in multiple cognitive functions. By contrast, little decline is evident in persons not developing Alzheimer disease.

**Eccentric Narrowing and Enhancement of Symptomatic Middle Cerebral Artery Stenoses in Patients With Recent Ischemic Stroke**

Vergouwen and colleagues (page 338) characterize the vessel wall imaging findings and enhancement patterns in the middle cerebral artery of patients with presumed atherosclerotic disease and recent infarction in the territory of the affected artery. Their data suggest that patients with presumed intracranial atherosclerosis of the middle cerebral arteries have eccentric plaques that enhance after the administration of contrast medium when imaging is performed within weeks to months of a cerebral infarct within the arterial territory.

**Dementia Risk in Parkinson Disease: Disentangling the Role of MAPT Haplotypes**

Seto-Salvia and colleagues (page 359) determine whether the microtubule-associated protein tau (*MAPT*) H1 haplotype and *MAPT* subhaplotypes play a role in the risk of Parkinson disease (PD) and Parkinson disease–dementia (PDD) complex. Their data confirm that *MAPT* H1 is associated with PD and has a strong influence on the risk of dementia in patients with PD. Their results also suggest that none of the *MAPT* subhaplotypes plays a significant role in other neurodegenerative diseases, such as Lewy body dementia or Alzheimer disease.

**Arterial Tortuosity Syndrome With Multiple Intracranial Aneurysms**

Naunheim and colleagues (page 369) present a case report of arterial tortuosity syndrome which is a rare connective tissue disorder characterized by tortuosity, dilation, stenosis, and aneurysms of large and mid-size arteries. They report a new manifestation of this rare clinical syndrome in the absence of skin and soft-tissue abnormalities, bilateral, giant, fusiform intracranial aneurysms. *Editorial perspective is provided by Louis R. Caplan, MD* (page 292).