ECNP Targeted Expert Meetings (TEM)
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Report on the TEM Dementia and Neurodegenerative Disorders
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This TEM meeting was chaired by Richard Cowburn and Hilkka Soininen, Finland.
Lars Olson, Sweden, summarised advances in Parkinson (PD) aetiology focusing on genetics. Genes responsible for autosomal dominant and recessive disease have been identified. Genes with causative mutations may also carry less devastating mutations that increase risk. The large number of implicated genes can be grouped as important for mitochondrial function, proteasomal/lysosomal protein degradation, or detoxification and/or protection against oxidative stress. None are specifically expressed in dopamine neurons, and most have general neuronal or cellular functions. Knowledge of genetic contributions to PD has allowed better animal modelling. Clinical consequences of genetic findings will include early, even presymptomatic diagnosis, presumably individualised treatments, and eventually disease-modifying treatments.

Rohan de Silva, United Kingdom, described tauopathies as a group of neurodegenerative disorders characterised by fibrillar deposits of abnormally hyperphosphorylated and aggregated tau. Tau gene (MAPT) mutations causing frontotemporal dementia and common polymorphic variation in MAPT that influence risk of PSP and corticobasal degeneration implicate defective tau protein and its homeostasis as the key to pathogenesis. A consistent mechanism emerging is increased production of more fibrillogenic tau variants. Therapeutic approaches for tauopathies aim to prevent or clear pathological inclusions and/or reduce levels of pathogenic tau. The different approaches being tested were summarised and placed in the context of current debates and uncertainties around the key event(s) in tau-related pathogenic processes.

Kaj Blennow, Sweden, summarised biomarkers for Alzheimer's disease (AD) and dementias. Cerebrospinal fluid (CSF) biomarkers of beta-amyloid 1-42 and total and phosphorylated tau have high diagnostic value for AD and a high predictive value for identifying prodromal AD in mild cognitive impairment (MCI) cases. To improve the predictive value even further, CSF biomarker data should be combined with MRI for hippocampal atrophy and amyloid-PET. CSF biomarkers are valuable in drug development as diagnostic markers for enrichment, for patient stratification, safety, and to follow drug effects. Biomarker data from small, short-term clinical trials showing that drugs have predicted effects in AD patients will be important for go/no-go decisions before Phase III trials.