a report by
Johan A Aarli

President, World Federation of Neurology (WFN)

Johan A Aarli is President of the World Federation of Neurology (WFN), where he is also Chairman of the Public Relations & WHO Liaison Committee. He has been Professor and Chairman of the Department of Neurology at the University Hospital of Bergen, Norway, since 1977. Since 2003, Dr Aarli is also Director of the Neuroclinic at Haukeland University Hospital. His main field of research is neuroimmunology, especially myasthenia gravis, and he has written 314 scientific papers and three books. Between 2002 and 2005, Dr Aarli was Secretary-General of the European Federation of Neurological Societies (EFNS), prior to which he was Chairman of the Teaching Course Committee of EFNS. He was Visiting Professor at the University of California at Davis in 1995 and 1999, and he was a guest scientist at the University of Chicago in 1989 and at the University of Leeds in 1973. Dr Aarli was Dean of the Faculty of Medicine at the University of Bergen between 1985 and 1988. Among his other titles are Chairman of the Norwegian Neurological Association, corresponding member of the American Neurological Association (ANA), honorary corresponding member of the American Academy of Neurology (AAN), honorary foreign member of the Association of British Neurologists (ABN) and the French Neurological Association and honorary Professor at Georgia State Medical Academy. Dr Aarli has been knighted by King Olav V of Norway to Knight, First Class, of Saint Olav's Order. He graduated from the University of Bergen in 1961.

Neurology developed as a clinical speciality with close contacts with biology and similarities with internal medicine. Psychiatry matured under the impact of how socioeconomic, familial and interpersonal relationships can influence the human mind. For a long time, the two specialities drifted away from each other, but the progress in functional magnetic resonance imaging (MRI), improved imaging techniques, the development in genetics and the revolution in molecular medicine with its understanding of signal transmission in the brain has given neurology and psychiatry a new image with a common basis in neuroscience.

The development in genetics has provided new prospects for understanding disease mechanisms in brain disorders. In Parkinson's disease (PD), gene mutations have been identified as the most common genetic cause for familial and sporadic cases, information that may provide new targets for treatment. New drugs that mimic the effect of levodopa (L-dopa) in PD are being developed. Recently, influenza has attracted a lot of attention, as a virus that caused the pandemic in 1918 was followed by post-encephalitic parkinsonism. The virus strain has now been reconstructed and inoculated into mice. Although it is the most lethal virus tested in mice, it does not replicate in the brain; the disease mechanism behind this form of parkinsonism is therefore still not understood.

The genetic defect in special forms of migraine has been revealed and there is a renewed optimism in the search for genes implicated in the more common forms of the disorder. Information from genetics has also provided new understanding of the hereditary neuromuscular disorders.

In spite of ethical and legal issues, stem cell research is developing. The use of embryonic stem cells in experimental studies illustrates the potential of stem cells as a treatment for PD. In experimental PD in animals, only a few implanted cells survive and long-term unanticipated side effects cannot be excluded. Patients with human malignant brain tumours have a poor survival, partly because therapeutic drugs do not reach the tumour. However, in animal studies, engineered stem cells derived from bone marrow do reach the tumour and may release antitumoural agents.

Thrombolysis is an important treatment for thrombotic brain strokes when treated within three hours. With an increasing percentage of older age groups in the population, cerebrovascular events are becoming more frequent than coronary events. This has implications for prevention strategies and treatment.

The race is also on to develop drugs that can modify the course of Alzheimer's disease. The amyloid-β peptide is a critical factor in the production of symptoms. Although amyloid-β peptide immunisation was abandoned due to adverse effects, various strategies aimed at reducing the production of this peptide have again given new hope. Patients early in the development of the disease with a smaller existing amyloid load may profit more from such treatment.

Epilepsy and dementia represent areas of cross-fertilisation where neurologists and psychiatrists can supplement each other. Globally, epilepsy is one of the most common serious neurological disorders. Although new anticonvulsive drugs have been developed, costs may still hamper their use in resource-poor countries.

Stroke, dementia, epilepsy, central nervous system (CNS) infections, CNS trauma and PD are all important factors determining mortality and morbidity in all societies. The available resources are, however, insufficient to meet the global need for neurological care. The World Federation of Neurology (WFN) aims to identify areas where there is a need for strategic upgrading of the available resources for neurological service. As progress in neurological therapy is so fast, it may be difficult to keep abreast of advances in this field. The articles in *European Neurological Disease 2006* provide a useful tool to update its readers on new developments. ■

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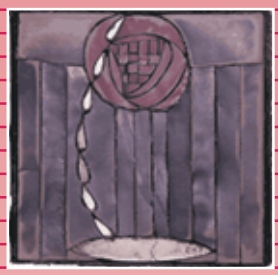

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