Cognitive Neurology and Ageing Scientific Department of the Brazilian Academy of Neurology

Biennial report – 2006-2008

Our two-year term as coordinators of the Cognitive Neurology and Ageing Scientific Department (CNASC) of the Brazilian Academy of Neurology has come to an end this August. We now take this opportunity to highlight some activities conducted during this period.

1. Implementation of the CNASC web page hosted on the Brazilian Academy of Neurology site (www.abneuro.org). This web page contains a range of content and information which may be useful to our colleagues, namely:
   a. A brief historical appraisal of the Department;
   b. Brief information for the lay public about Cognitive Neurology;
   c. A list of services and research groups on Cognitive Neurology and Ageing in Brazil coordinated by members of the Brazilian Academy of Neurology who belong to the CNASC;
   d. A survey on cognitive tests adopted by the main services of Cognitive Neurology and Ageing in different parts of the country, with special focus on the Mini-Mental State Examination;
   e. A list of some Brazilian studies published in the area of dementia;
   f. Articles in PDF produced by the CNASC and published in Arquivos de Neuro-Psiquiatria, the official journal of the Brazilian Academy of Neurology: Consensus recommendations on diagnosis (parts 1 and 2) and treatment of Alzheimer disease in Brazil; a glossary of frequent terms used in Cognitive and Behavioral Neurosciences translated into Portuguese;
   g. Important information on prion diseases, including the forms required for compulsory notification of Creutzfeldt-Jakob disease;
   h. Instructions for authors of Dementia & Neuropsychologia, the official journal of the CNASC;
   i. Articles in PDF format (open access) published in Dementia & Neuropsychologia, since its first issue (March, 2007).

2. Regular contributions to NeuroAtual, an official publication of the Brazilian Academy of Neurology (six issues per year) which presents comments on recently published original and review articles of interest to the neurologist. Besides the important role of NeuroAtual in continuous medical education for the general neurologist, the participation of the CNASC aimed to call the attention of our colleagues, including residents, to the fascinating field of Cognitive Neurology.

3. Participation in a meeting on Attention Deficit Hyperactivity Disorder (ADHD) held in Rio de Janeiro, in November, 2007, by the Brazilian Association of Attention Deficit. This meeting was co-sponsored by different scientific associations, including the Brazilian Academy of Neurology. The CNASC was represented by our colleague Wellington Borges Leite. We believe that the inclusion of ADHD, albeit in children, adolescents and adults, into the agenda of our Department is an important step to reinforce the role of the neurologist in the diagnosis and treatment of this disorder.

4. Organization of the VI Brazilian Meeting of Researchers in Alzheimer Disease and Related Disorders, held in Ouro Preto, Minas Gerais state, from December 6th to 8th, 2007. This is the main scientific activity of the CNASC, organized biennially since 1997, and constitutes the most important event in the area of dementia research in Brazil. As usual, no registration fee was charged to the conveners and their participation was based on the approval of an oral or poster presentation.

   The 2007 edition saw a record number of submitted abstracts: 235, representing a 45% increase in relation to the previous meeting. Of this total, some 210 were selected for presentation. Specific awards were granted for the best presentations on basic and clinical research. All the abstracts were published in a special supplement of Dementia & Neuropsychologia.

   During the XXIII Brazilian Congress of Neurology, held last August in Belém, Pará state, a new board of coordinators was elected to lead the CNASC up until 2010.
A novel use for an old drug

Dimebon has been used in Russia as a non-selective antihistamine for many years. The drug seems to act on mitochondria and inhibit neuronal death, weakly inhibiting butyrylcholinesterase and acetylcholinesterase and weakly blocking NMDA receptors.

In this recently published trial Dimebon was given to two groups of mild to moderate Alzheimer’s disease patients (n=183) at 11 sites in Russia, randomized for 60 mg/day of dimebon or placebo, for 26 weeks. Patients were not taking other drugs, such as anticholinesterasics or NMDA antagonists.

The study was completed by 155 patients. The primary outcome endpoint considered was score on ADAS-Cog, with a significant positive difference seen in scores for dimebon (mean improvement of 2 points) whereas the placebo group decreased more than 2 points. All other secondary outcome measures were significantly better in the dimebon group (MMSE scores; NPI – Neuropsychiatric Inventory – measure of behaviour; ADCS-ADL – Alzheimer’s disease Cooperative Study – activities of daily living; Clinician’s Interview-based Impression of Change plus Caregiver Input – CIBIC-plus). An extension of the study was conducted for 134 patients to 52 weeks, with continued better outcome on all five measures. The outcome profile of dimebon was similar to cholinesterase inhibitors. Dimebon was very safe, with dry mouth occurring more frequently in the dimebon group. Overall frequencies of adverse events were quite low.

This trial should be replicated in other countries and for a greater number of patients. In this trial only one single dose dimebon was studied, therefore future studies should be performed to verify efficacy with other dose regimens.

We view Dimebon as a promising drug, particularly after studying dimebon associated to anticholinesterasics drugs and/or with memantine.


Sonia M.D. Brucki
Selective vulnerability of von Economo neurons in frontotemporal dementia

In many types of neurodegenerative disease there is selective vulnerability of groups of neurons that show evidence of degenerative change long before other neighboring neurons. In Alzheimer’s disease, neurons in layer II of the transentorhinal and entorhinal cortex show neurofibrillary tangles while neurons in the other layers of the same region remain normal. In Parkinson’s disease, selected populations of neurons in the medulla oblongata, pontine tegmentum, olfactory bulb, anterior olfactory nucleus and pars compacta of the substantia nigra are involved earlier in the degenerative process than other neurons in adjacent areas. Until recently, the most vulnerable neurons in frontotemporal dementia (FTD) were not known. Studies conducted by Seeley and colleagues headed by Bruce L. Miller, from the Memory and Aging Center of the University of California at San Francisco, have found very interesting results on this matter.1–3

Layer Vb of the cingulate cortex and orbitofrontoinsular cortex of the adult brain contain large bipolar spindle-shaped neurons not present in other brain areas. These neurons were described by von Economo and Koskinas in 1925 (cit. by Viskontas et al., 2007)2 as spindle cells and, although they have long axons, their connections are not yet known. There are several fascinating observations related to these neurons, now called von Economo neurons (VENs). For instance, they are present only in man and other mammals with large brains such as great apes and a few species of whales; VENs are larger and more numerous in man than in the great apes, and their number and size decreases according to the distance from man in the evolutionary chain; VENs appear later in development, increasing in size and number from birth until the age of four to eight years, being more numerous in the right hemisphere.1–3

VENs are precociously involved in FTD and may be the most vulnerable neuron to the degenerative processes that cause this complex behavioral syndrome.1 The function of VENs is as yet unknown but the finding that VENs express dopamine (D3), serotonin (1b/2b) and vasopressin receptors is of great interest because the neurotransmitters involved with these receptors are related to behaviors commonly disturbed in FTD3. This represents a new field of research with high potential for significant findings in the near future.


Ricardo Nitrini