8 different directions for 1 second to displace their centre-of-pressure (CoP) to match targets on a screen. Clinical measures comprised part III of the Unified Parkinson’s Disease Rating Scale (UPDRS). Results: Static sway area was reduced to 66 ± 5% (SEM) of untreated values with GPS. Dynamic task reaction time improved to 87 ± 14% of untreated values, while target hold achievement time and total task time remained unchanged. Target overshoot increased to 133 ± 15% and CoP wandering to 120 ± 22% of untreated values. Total UPDRS fell to 65 ± 9%, with reductions in rigidity and axial subscores, however, motor scores correlated poorly with static and dynamic balance measures.

Conclusion: GPS has differential effects on static and dynamic postural control with improvement in static sway but not in dynamic stability. The effects of GPS on postural control appear to be independent of its other effects on limb and axial function.

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Synergistic effect of Alzheimer and Lewy-body changes on dementia
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Objective: In order to clarify the relationship between Alzheimer and Lewy-body type changes in dementia.
Method: Serial 1395 autopsy cases from a geriatric hospital since 1995. The mean age was 80.6 with male to female ratio being 758:637. Parkinsonism and dementia were retrieved from the clinical records. Lewy body dementia (LBD) includes dementia with Lewy bodies (DLB) and Parkinson disease with dementia (PDD), presenting with Lewy body-related neuronal degeneration involving the peripheral autonomic, the nigro-striatal and the limbic/neocortical systems. The diagnosis of Alzheimer disease (AD) was based on Braak’s senile plaque (SP) Stage C and neurofibrillary tangle (NFT) stages equal to or above IV. Each case was classified into AD-LBD-, AD-LBD+, AD-LBD+ and AD-LBD- + Apolipoprotein E (Apo E) genotyping was determined in 1,114 from the 1,395 cases. Results: 120 cases (8.6%) were categorized into AD+LBD-, 45 (3.2%) AD+LBD+ and 16 (1.1%) AD+LBD+. The series included 28 (2.0%) PD cases, 16 (1.1%) of which showed dementia and was classified into one AD-LBD+ and 15 AD-LBD- cases. The male to female ratio in AD-LBD+, AD-LBD+ and AD-LBD- was 0.53, 0.78 and 1.1, respectively. AD-LBD+ with SP Stage C/NFT Stage 0-III covers 29% of all AD+LBD+, higher than 11% of AD-LBD+. The apoE frequency in AD-LBD+ AD+LBD+, AD+LBD-+ and AD-LBD- was 28%, 27%, 15% and 9.3%, respectively. Discussion and Conclusion: Our approach, avoiding confusion in the naming of AD, DLB and PDD, confirms a mutual aggravating effect of AD and LBD changes causing dementia.

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Tumor Necrosis Factor-alpha blocking in a experimental model of parkinsonism
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Background: Recent studies (Nagatsu et al., 2005) have found increased levels of proinflammatory cytokines, such as tumor necrosis factor (TNF)-alpha and interleukin (IL)-1 beta in the nigrostriatal region of postmortem brains of patients with sporadic Parkinson’s disease (PD). Additionally, PD patients have increased serum levels of TNF-alpha that correlate with manifestations of neurological symptoms (Grigova et al., 2003). Etanercept is a recombinant human TNF receptor fusion protein which blocks TNF-alpha, modulating inflammatory processes. The objective of this research was to assess if etanercept, protects against experimental parkinsonism. We postulate that blood-brain barrier is altered in this animal model of parkinsonism allowing subcutaneously given etanercept to reach therapeutic levels in the cerebrospinal fluid.

Method: Thirty male Wistar rats were divided into five groups: (1) control group; (2) sham operated group, which received 4 μL of vehicle injection into striatum of both sides; (3) caudate-putamen (CP) lesion group, which received bilateral injections of 32 μg of 6-OHDA/5 μL into striatum; (4) CP lesion group treated every 5 days with s.c. injections of 5 mg/kg body weight etanercept. After the second injection, rats were lesion into CP and (5) substantia nigra (SN) lesioned group, which received bilateral administration of 6-OHDA into SN. Since one month before the lesion to one month post-lesion, motor activity of rats was measured by infrared beams, using a Motor Activity Monitor Lethica LE811. Student t test was used to statistical analysis.

Results: Except during the six days post-lesion, there were no significant differences in the spontaneous motor activity among the groups.

Conclusion: The subcutaneous administration of etanercept did not protect against experimental parkinsonism, probably because it can not cross the blood-brain barrier. Currently we are carrying out experiment administering intraventricular etanercept to confirm our conclusions and assess therapeutic effects.

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Age at onset of Parkinson’s disease in women is associated with age at menopause

Method: We included women affected by PD according to validated criteria, with a Mini Mental State Evaluation score > 24. Cumulative length of pregnancies, age at menarche, age and type of menopause were investigated through a structured questionnaire. Linear and logistic regression analyses were used to estimate the association between the investigated variables and age at PD onset.

Results: We included 145 women affected by idiopathic PD. Linear regression analyses showed a significant association between age at PD onset and age at menopause (adjusted r square = 0.07; p = 0.002). A linear association approximating the statistical significance was also observed between PD age at onset and cumulative duration of pregnancies (p = 0.05). At Logistic regression analyses age at PD onset, dichotomised according to the median of its distribution (61 years), was only associated with age at menopause (OR 0.94; 95% CI 0.88-1.00; p = 0.06) approximating the statistical significance.

Conclusion: These results further support the hypothesis regarding the role of endogenous estrogens in the development of PD. Our data also indicate an association between hormonal stimuli during fertile life and age at PD onset.

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Investigation on potential effects of continuous administration of rosiglitazone on sleep architecture in rats
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