Gait Analysis and Pattern Cognition in Parkinson's Disease

Marianna Amboni[a,b], Paolo Barone[c], Luigi Iuppariello[c], Ilaria Lista[a], Alessandro Iavarone[a], Giuseppe Sorrentino[a,b]
[a]*University of Naples Parthenope, Naples, Italy*
[b]*Istituto Diagnosi e Cura Hermitage-Capodimonte, Naples, Italy*
[c]*Neurodegenerative Diseases Center, University of Salerno, Salerno, Italy*
[d]*Department of Biomedical Electronic Engineering, University of Naples Federico II, Naples, Italy*
[e]*Neurological and Stroke Unit, CTO Hospital, AORN Ospedale dei Colli, Naples, Italy*

Background: The relationship between cognition and gait in Parkinson's disease (PD) has received increase attention, however the specific connection between gait features and cognition is still not fully understood.

Aim: To find association between gait parameters and specific cognitive profiles in patients with PD.

Methods: Using motion analysis system, forty three PD patients during gait in normal conditions at on state were studied. We evaluated the following gait parameters: 1) step length; 2) stance phase; 3) swing phase; 4) single support/double support time ratio; 5) cadence; 6) velocity; 7) step length variability; 8) swing time variability. In order to reduce the larger number of gait variables to a smaller number of elements, a factor analysis was performed. Furthermore, we assessed all patients with an extensive neuropsychological battery and correlated the composite scores of three main cognitive domains, namely episodic memory, executive and visuospatial domains with the gait factors scores.

Results: Factor analysis revealed two independent factors, namely "pace" and "stability". The "pace" factor was not correlated with cognitive or clinical variables. The "stability" factor was strongly and directly correlated with visuospatial domain.

Conclusions: Visuospatial impairment was strongly associated with the development of instability and the progression of disease.

Genetic Risk Factors in Neurodegenerative Diseases

Maria Anfossi[a], Livia Bernardi[a], M. Elena Conidi[a], Maura Gallo[a], Paola Piscopo[b], Nicoletta Smirne[a], Francesca Frangipane[a], Rosanna Colao[a], Gianfranco Puccio[a], Alice Adduci[a,b], Lorenzo Malvezzi-Campeggi[a], Giuseppina Talarico[b], Giuseppe Bruno[a], Alessandra Clodomiro[a], Chiara Cupidi[a], Maria Mirabelli[a], Sabrina A.M. Curcio[a], Ornella De Vito[a], Raffaele Di Lorenzo[a], Giusi Torchia[a], Franca Vasso[a], Raffaele Maletta[a], Nicola Vanacore[b], M. Rita Piras[d], Annamaria Confaloni[b], Amalia C. Bruni[a]
[a]*Centro Regionale di Neurogenetica, ASP CZ, Lamezia Terme, Italy*
[b]*Istituto Superiore di Sanità, Rome, Italy*
[c]*Università di Roma Sapienza, Rome, Italy*
[d]*Università degli Studi, Sassari, Italy*

Background: The risk of developing Alzheimer's disease (AD) and frontotemporal dementia (FTD) could be associated to SNPs in specific genes.

Aim: To define a specific profile of risk for AD and FTD.

Population and methods: SNPs of APOE, Cyp46A1, ABCA1, PRNP, TOMM40, GAB2, NOS3 genes analyzed in 322 AD patients, 102 FTD patients and 366 controls. Statistics performed by χ^2 test.

Results: The APOE ε4 allele frequency was significantly different ($p=0.000$) in AD (22.1%) and FTD (18.6%) subjects than controls (7.8%) with an OR of 3.36 and 2.71, respectively. Genotypic frequency of the GAB2 gene in FTD patients was different than controls ($p<0.006$), with a frequency of TT genotype of 10% in subjects FTD vs. 2.8% in controls, and a T allele frequency was of 27% vs. 19% in controls ($p=0.02$), with an OR of 1.52. Patients with TT and ε4 had an increased risk of developing FTD (OR7.28).

Conclusions: The association between APOE ε4 allele with AD and FTD is once again confirmed. T allele homozygosity of the GAB2 gene associated to ε4 increases the risk of developing FTD but further studies are needed to understand the role of this gene in the biochemical mechanisms underlying neurodegeneration.

Two Cases of Early Onset FTLD Due to the Chromosome 9 Hexanucleotide Repeats

Andrea Arighi, Daniela Galimberti, Francesca Jacini, Giorgio G. Fumagalli, Laura Ghezzi, Anna M. Pietroboni, Milena De Riz, Chiara Fenoglio, Maria Serpente, Elisa Ridolfi, Nereo Bresolin, Elio Scarpini
Department of Neurological Sciences, University of Milan, Fondazione Cà Granda, IRCCS Ospedale Policlinico, Milan, Italy

VII Congresso Sindem

Italian Association for the study of Dementia linked to the Italian Neurological Society (SIN)

Naples, Palazzo Pacanowsky – Università degli Studi di Napoli "Parthenope"
March 22–24, 2012

PROCEEDINGS

Comitato Scientifico

Vincenzo Bonavita
Carlo Caltagirone
Claudio Mariani
Alessandro Padovani
Elio Scarpini
Sandro Sorbi

SINdem