Double hit theory for the development of Vascular Parkinsonism

Herbert Alejandro Manosalva Alzate
University of Toronto, Canada

Objectives: One decoding the components of the network involved in the genesis of Vascular Parkinsonism (VasP) in a Tertiary Care Stroke Prevention Clinic (SPC). After screening for potential patients with VasP (using the Tanner Questionnaire and the FMAS score1) during 12 consecutive months in a SPC (240 candidates) we found 46 patients with potential Parkinsonism (TQ>4). Patients were examined clinically to detect a hypokinetic rigid syndrome, and the FMAS score was used to find candidates with VasP (8/46). The location of the lesions was studied in the two groups using the neuroimaging tests (CT scan and/or Brain MRI) and its pattern. The anatomical networks for this syndrome have been suggested in different studies mainly affecting the basal ganglia structures, thalamus, and frontal lobes. Two frequent patterns were found: one with basal ganglia lesions and frontal lobe lesions, and the other one involving the thalamus and frontal lobes. But only the pattern involving the Lenticular nucleus (BG) and frontal lobes were significantly associated with the group of VasP (X2 Fisher exact test p<0.0005 Odds ratio CI 95% (9.6-108)); whereas the pattern thalamus – frontal lobes was not significantly different between the two groups (X2 Fisher exact test p=0.828 Odds ratio CI 95% (0.5-2.8)). In conclusion patients with double lesion pattern located at the BG (Lenticular nucleus) and frontal lobes were found to have VasP. A two strategic location hit is presumed to be required to develop this condition. What neurotransmitters and neuroimmunological changes may occur in this network that could explain the onset of Parkinsonism may require further investigation. It is presumed that changes in Dopamine neuroreceptors and neuro immunomodulatory molecules may play a role in its pathogenesis. Further studies would be required in the future to confirm these findings.

Biography
Herbert Alejandro Manosalva Alzate has completed his medical and neurology degree at the National University of Colombia. He worked in the Netherlands Antilles for 8 years, and due to his passion for neurosciences, he moved to Canada, where he completed his Fellowship in Movement Disorders & Medical Genetics applied to the field of movement disorders and neurology at the University of Alberta. Due to his research interest in Vascular Parkinsonism, he published a study in a novel form of screening patients with this condition in the Stroke prevention clinic. He completed at the same university his second Fellowship in cerebrovascular diseases before he moved to the University of Toronto in Ontario at the Sunnybrook Hospital. He is currently planning a study for patients with central retinal artery occlusion, the condition that has no current effective treatment.

guiamesr@yahoo.co.uk