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Commentary Open Access

Parkinson's disease is Subtly Distinguishable from Vascular Parkinsonism as shown by their Variable Ranges of Sensitivity to Dopaminergic Therapy

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Commentary

Cerebrovascular Disease (CVD) has been found widely in population, even in patients with Parkinson's Disease (PD) who are defined - according to current criteria-idiopathic PD began in younger ages (for example 45-65 years age range). In fact it is remarkable even if neglected that physicians detect as a common finding a high cerebrovascular lesion burden in older patients apparently as nonspecific feature due to age and independent of the PD disease itself. This data are generally ignored by clinicians and researchers according to the classic criterion based on response to drug (dopaminergic therapy) to give elements of certainty about the diagnosis of PD; then they declassify clinical cases not responding to drug therapy to Vascular Parkinsonism (VP), assuming that the latter is not or poorly sensitive to dopaminergic therapy. The author hypothesizes that vascular defect would produce, with an unknown mechanism, a pre-synaptic damage which would explain the greater frequency of vascular damage in patients with PD compared to other diseases related to movement disorders.

In previous publications [1], statistical significance was observed in the global incidence of both localized and diffuse cerebrovascular damage in patients with certain diagnosis of PD. This not tiny significance showed an increasing trend with enlarging number of the PD population considered in a retrospective study [2]. At the same time, the efficacy of dopaminergic therapy was also observed in an increasing number of patients with the coexistence of a relevant cerebrovascular lesional burden together the fitting clinical features of CVD. Note that in most those cases at least in a certain phase of the taking care charge, it was plausible the doubt that the probable diagnoses was VP. A statistical analysis between a group of 68 patients with PD and a group of 16 patients with VP showed that the difference in efficacy of dopaminergic drugs was not significant.

The comparison was carried out with Chi-Square Test (Table 1). The drugs used in the two groups were L-Dopa and DA.

	rf yes	no rfs	Marginal Row Totals
PD	62 (59.9) [0.07]	6 (8.1) [0.54]	68
VP	12 (14.1) [0.31]	4 (1.9) [2.3]	16
Marginal Column Totals	74	10	84 (Grand Total)

Table 1: The chi-square statistic is 3.2318. The p-value is .72221. The result is not significant at $p<0.05$.

This result suggests two items: 1) it does not seem possible to make a drastic distinction between Parkinson's disease and vascular parkinsonism; 2) stable dopaminergic therapy should be adopted more extensively with the aim to include patients diagnosed as vascular parkinsonism who can benefit of it in contrast with the opinion usually accepted that there should be a minimal and short response. Since the two groups of patients showed extrapyramidal parkinsonian symptoms responsive to dopaminergic therapy with a time lapse of more than 12 months, the statistical comparison was made between these two groups of patients with definite PD diagnosis-and therefore with a good expectation for response to dopaminergic therapy-and the group of patients defined as "Brain Vasculopathic Ones" expected as "poor responders". The results obtained were astonishing as evidenced by Table 1.

In fact it is possible to observe that p-value is not lower than 0.05 ($p=0.072221$) i.e. there is no significance in the difference as concerning the efficacy of pharmacological therapy between the two groups; therefore it is deduced that dopaminergic therapy is globally useful both in Idiopathic Parkinson's disease as in the vascular Parkinsonism disease (Table 1).

Conclusion

The result obtained is strongly suggestive of a possible homogeneity in therapy adoption both in PD and VP. This commentary is confirmed also by the opposite observation commonly detected by neurologists that in some cases diagnosed PD patients are poorly or shortly responsive to dopaminergic therapy, apparently inexplicably in presence of a positive DAT-Scan. More investigations need to be carried on to eventually investigate the result exhibited in this clinical study and to assess an evidence based statistical significance.

Therefore from these observations it was drawn the conclusion that: 1) vascular damage plays a role in the pathogenesis of idiopathic PD; 2) there is no clear distinction, at least in relevant degree, between idiopathic PD and VP but it can be hypothesized that there is a spectrum of Parkinson-like affections extending between two extremes; these are ranging from the maximum response to drug therapy to the absence of response, as a continuum determined by the union of risk factors and individual variables (epigenetic determinant features, specific localization of vascular damage). Therefore it may be necessary to review the behavioural patterns of drug use in the presence of extra-pyramidal signs and symptoms attributable to PD or VP [3-5].

In our clinical practice several cases of Parkinson's disease occurred near an acute cerebro-vascular event; moreover very often we detected clinical cases with pyramidal signs and symptoms associated with PD

that at cerebral magnetic resonance (MRI) or TC-Scan showed a pattern of vascular lesions with various localizations.

The lesions were both multiple non-specific (not necessarily affecting nigro-striatal system) and single classical lesions in the distribution of the middle or posterior cerebral artery; for example, in a clinical case [3] the presence of a micro-vascular and multi-infarct encephalopathy was observed with prevalent distribution in the hemisphere opposite to the side of onset of parkinsonian symptoms highly responsive to dopaminergic therapy. Moreover evident pyramidal signs were observed, such as hyperreflexia, spastic hypertonus and Babinskj's sign on the same side, the latter last clinical signs being strongly indicative of cerebrovascular disease. In other cases a vascular defect would produce, with an unknown mechanism, a pre-synaptic damage which would explain the greater frequency of vascular damage in patients with PD compared to other diseases related to movement disorders.

References

1. Zarola F (2017) Comparison in efficacy of dopaminergic therapy between a group of Parkinson's disease patients and a group of patients with Vascular Parkinsonism. Sens Syst J 1: 10.
2. Zarola F (2017) Incidence of vascular brain damage in a population with Parkinson Disease: a clinical statistic study in comparison with a control group of patients afferent to neurological movement disorder out-patients clinic. Acta Biomed 88: 95-96.
3. Zarola F (2018) Vascular Parkinsonism sensitive to Rotigotine therapy is found in aged patients: a clinical case description. Acta Biomed 89: 99-100.
4. Miguel-Puga A, Villafuerte G, Salas-Pacheco J, Arias-Carrión O (2017) Therapeutic Interventions for Vascular Parkinsonism: A Systematic Review and Meta-analysis. Front Neurol 8: 481.
5. Mostile G, Nicoletti A, Zappia M (2018) Vascular Parkinsonism: Still Looking for a Diagnosis. Front Neurol 9: 411.