Comparison in efficacy of dopaminergic therapy between a group of Parkinson's disease patients and a group of patients with vascular parkinsonism.

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Nowadays it is a common experience in general in medical practice and more for neurologists that there is an increasing incidence of signs of cerebral vascular minimal damage detected by radiologic investigations performed occasionally or not in the common population diffusely in age range, even involving young people.

Therefore we decided to observe if there could be any statistic linkage between vascular disease and Parkinson Disease. In a previous study a first step consisted in showing a statistical significant incidence of cerebral vasculopathy in a group of patients affected by Parkinson Disease [1].

The present study was conducted focusing on the evaluation of motor and non-motor symptoms related to Parkinson's disease (PD) treated with dopaminergic therapy (L-Dopa, Dopamine Agonist (DA) to validate the treatment even in those patients with extrapyramidal symptoms that are commonly diagnosed as Vascular Parkinsonism (VP) [2].

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. 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. Moreover there is the opinion in clinicians that the dopaminergic therapy causes in vascular parkinsonism's patients more frequently side events like impulse control disorder [3], hallucinations, somnolence, opposite to short term or not-existing positive result.

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 the group 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 [4].

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

	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)

Note that the two populations have a different ratio of 5:1 in the number of subjects, a sign that the selection of patients with VP was made with very accurate and restrictive criteria (sudden onset of motor symptoms after stroke, light diffuse tremor in presence of a severe vascular brain damage to the brain tomography). Moreover the Chi-Test is built in order to correct the statistical weight due to the difference in number between the two populations. Therefore the result 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.

References

1. Zarola F. 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 outpatient's clinic. Acta Bio Medica Atenei Parmensis. 2017 Apr 28; 88(1):95-6.
2. Rizos A, Sauerbier A, Antonini A, et al. EUROPAR and the IPMDS Non-Motor-PD-Study Group, A European multicentre survey of impulse control behaviours in Parkinson's disease patients treated with short-and long-acting dopamine agonists. Eur J Neurol. 2016; 23:1255-61.
3. Defebvre L, Krystkowiak P. Movement disorders and stroke. Revue neurologique. 2016 Sep 30; 172(8):483-7.
4. Dickson DW. Neuropathology of Parkinson disease. Parkinsonism & Related Disorders; 2017 Aug.

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