PROVERBS COMPLETION IN PARKINSON DISEASE: ARE BASAL GANGLIA IMPLIED IN VERBAL AUTOMATISMS?

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Clinically, it seems widely accepted that basal ganglia are involved in language automatisms, like proverbs completion and recitation of verbal series (months, multiplication tables, alphabet,...). From their studies on arithmetic abilities, Dehaene and Cohen (1995) suggested that subcortical structures (lenticular nucleus and thalamus) should be especially implied in the retrieval of all verbal automatisms, both multiplicative facts and non arithmetical series. In the present study, the abilities of patients with Parkinson disease (PD, n=30) were compared to those of healthy controls (HC, n=20) in a task of sentences completion. This test compasses 40 sentences corresponding to proverbs, lyrics, titles of stories, novels and songs. All items were selected to be very famous and relatively independant from cultural level. The responses and the time to respond were recorded. The two groups did not differed on age (PD: mean age: 63 years, SD=7; HC: 62 years, SD=10; Mann-Whitney, U=267, p>.05) and cultural level ((PD: mean level: 10 years, SD=3; HC: 10 years, SD=3; Mann-Whitney, U=240, p>.05). PD were cognitively impaired, with a Mattis score and a MMS score significantly lower than those of HC (PD: mean Mattis score: 135/144, SD=6.5; HC: 141, SD=1; Mann-Whitney, U=67, p=.0001; PD: mean MMS score: 26/30, SD=2.7; HC: 29, SD=1; Mann-Whitney, U=56.5, p< .0001). However, for the verbal automatisms, no statistical difference was obtained between the groups, neither for the correct responses, nor for the delay to respond. These results do not support the involvement of basal ganglia in the retrieval of verbal automatisms.