SENSORY SYMPTOMS IN ADVANCED PARKINSON DISEASE: THE EFFECT OF INTREJEJUNAL LEVODOPA CARBIDOPA INFUSION

R. Balestrino, A. Romagnolo, F. Dematteis, C. Artusi, E. Montanaro, M. Rizzone, M. Zibetti, L. Lopiano

Department of Neuroscience, University of Turin, Torino, Italy

BACKGROUND

Even though Parkinson Disease (PD) is classified as a movement disorder, recent literature stressed on the importance of non-motor symptoms. In particular, pain and sensory symptoms (SS) are frequent in PD patients and have a severe impact on quality of life (1). The association between pain and motor or neuropsychological aspects of PD and the extent to which pain is relieved by levodopa or deep brain stimulation (DBS) are still not completely understood (2,3).

OBJECTIVES

The aim of this study was to assess the relationship between SS and motor/neuropsychological outcome in patients with advanced PD treated with intrejejunal Levodopa/carbidopa infusion (LCIG).

METHODS

Assessments were performed before LCIG and after 6 months. SS were assessed using UPDRS II item 17, while UPDRS subscales were used to assess motor outcome, motor complications, activities of daily living (ADLs); severity of PD was assessed using the Hoen and Yahr score, depression using the UPDRS I item 3. Multiple linear regression analyses were performed to identify correlations between SS and clinical/demographic variables (gender, age of onset, PD duration, age at DBS Total UPDRSI,II,III,IV, UPDRS I item 3, Hoen and Yahr score), both at baseline and at follow up

RESULTS

Out of 93 patients, complete baseline and follow-up data were available for 76 patients.

BASELINE

CORRELATIONS

There was a positive correlation between age at Duodopa (CC=0,24, p=0.04), and UPDRS III total score at baseline (CC=0,56, p<0.001). there was no correlation with depression as measured by the UPDRS ITEM 3 or age at onset, duration of PD, Total UPDR I, II and IV at baseline.

REGRESSION

A linear regression with “UPDRS17 at baseline” as dependent variable that took account of demographic features (gender, aget of onset, PD duration, age at Duodopa) and clinical features (Total UPDRSI,II,III,IV, UPDRS ITEM 3, Hoen and Yahr score) at baseline was èerformed among patients who had sensory symptoms at baseline (UPDRS17>0); the only determining factor was : UPDRS III (p=0.004, beta 0,75). R squared was 0.61.

6 MONTHS FOLLOW UP

SIGNIFICANT CHANGES: After 6 months follow up, there was a significant change in UPDRS II (pre 16,71, at 6 m 10.02; p<0.001) and IV (pre 8.13, at 6m 5.13; p=0.001) total score. There was a significant modification in sensory symptoms when this was analysed in patients who showed UPDRS17>0 at baseline (pre=1.29, at 6m =0.35; p=0.002) .

REGRESSION

When a linear regression analysis with “Variations in sensory symptoms after 6 months” as dependent variable was carried out taking into account demographic features (gender, aget of onset, PD duration, age at duodopa) and clinical features (Total UPDRSI,II,III,IV and UPDRS item 3 difference after 6 month year), the only determing factor was TOTAL UPDRS III difference ater 6 months (beta= 1,96, p=0.042). R squared was 0.81. (Table 1)

Table 1 : regression analysis

DEPENDENT VARIABLE: Variations in sensory symptoms after 6 months

Model	B	SD	Beta	t	Sig.
(Costant)	19,055	8,667		2,199	,079
AGE AT ONSET	-,243	,103	-2,179	-2,354	,065
PD DURATION	-,406	,222	-1,979	-1,827	,127
D UPDRSIV_6m	,388	,254	,953	1,529	,187
D UPDRSIII_6m	**-,148**	**,055**	**-1,962**	**-2,713**	**,042**
D UPDRSI_6m	,176	,125	,814	1,414	,217
D UPDRSII_6m	-,015	,052	-,109	-,295	,779
D UPDRS3_6m	-1,374	,801	-1,448	-1,715	,147

CONCLUSIONS

According with previous literature we found no association between sensory symptoms and non-motor symptoms, while we found a significant correlation between motor outcome and sensory symptoms. We also found a correlation betwenn sensory symptoms and age at baseline, even though this result must be considered with caution since it might reflect the increased prevalce of Non-PD sensory symptoms in an elderly population.The relevance of this parameters to sensory symptoms was confirmed in a linear regression analysis. We found no differences between males and females. We found a significant improvement in sensory symptoms in PD patients who underwent STN-DBS. We found that the improvement in motor outcome was the most relevant factors in determing this change. We didn't find any relationships between sensory symptoms improvement and non-motor symptoms improvement.

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