

Levodopa Equivalent Daily doses in advanced Parkinson's Disease: gender and the anthropometric predictors

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Introduction

Males and females with Parkinson's Disease (PD) have several different clinical characteristics [1]: females have higher incidence of tremor and slower disease progression than males; instead, females received PD diagnosis later than males [1]. Males with PD are treated with higher levodopa doses than females [2], while other authors found similar Levodopa Equivalent daily Doses (LEDDs) between genders in accordance to body weight [3]. The Levodopa/Carbidopa Intestinal Gel (LCIG) infusion therapy is used to treat PD patients with motor fluctuation and/or dyskinesias. The aim of this study is to review, in a retrospective way, our cohort of PD patients selected for LCIG implant to investigate possible gender related differences of levodopa equivalent daily dose (LEDD), during the pre-implant oral therapy phase or during the chronic LCGI therapy phase.

Materials and Methods

Twenty-seven PD patients on LCIG therapy (mean age 64,17±8,31, disease duration 14.11±7.52), 15 females (mean age 67,27±10,18; disease duration 14.53±7.68) and 12 males (mean age 66,99±5,79, disease duration 13,58±7.62) were selected in this study (Tab. 1 and 2). In our cohort the mean LCIG therapy duration was 1,98±1,95 years. We compared patients' clinical characteristics, anthropometric indices (Body Mass Index – BMI; Body Surface Area – BSA) and LEDDs between females and males groups. Furthermore, we used the Pearson's correlation test to investigate relationship between patients' clinical features and LEDDs.

	Number (n)	Age at disease onset (y)	Disease duration (y)	BMI (Kg/m ²)	BSA - DuBois e DuBois (m ²)	LEDDs (mg)
Male	12	53.00±10.55	12,42±7.39	26,69±2.80	1.95±0.14	1172.40±416.91
Female	15	52.47±10.69	12,47±6,25	25.86±6.44	1.64±0.19	1068.46±392.83

Tab. 1: PD patients demographic features before LCIG therapy

	Number (n)	Age at LCIG start (y)	Time from LCIG start (y)	BMI (Kg/m ²)	BSA - DuBois e DuBois (m ²)	LEDDs (mg)
Male	12	64.92±5.68	1.58±0.81	26.30±2.82	1.93±0.14	1503.07±320.92
Female	15	64.53±9.35	2.31±2.51	25.55±2.82	1.64±0.22	1385.01±558.94

Tab. 2: PD patients demographic features today

Results

In our cohort, PD-LCIG males and females have similar age at disease onset, age at LCIG implant and disease duration. BSA showed significant difference between males and females (all p<0.01). No LEDDs gender related statistically significant difference was found during oral therapy phase (p=0.347) and during LCIG therapy phase (p=0.486) (Fig. 1). The Pearson's correlation test found no correlation between patients' LEDDs and patients' clinical features and anthropometric indices.

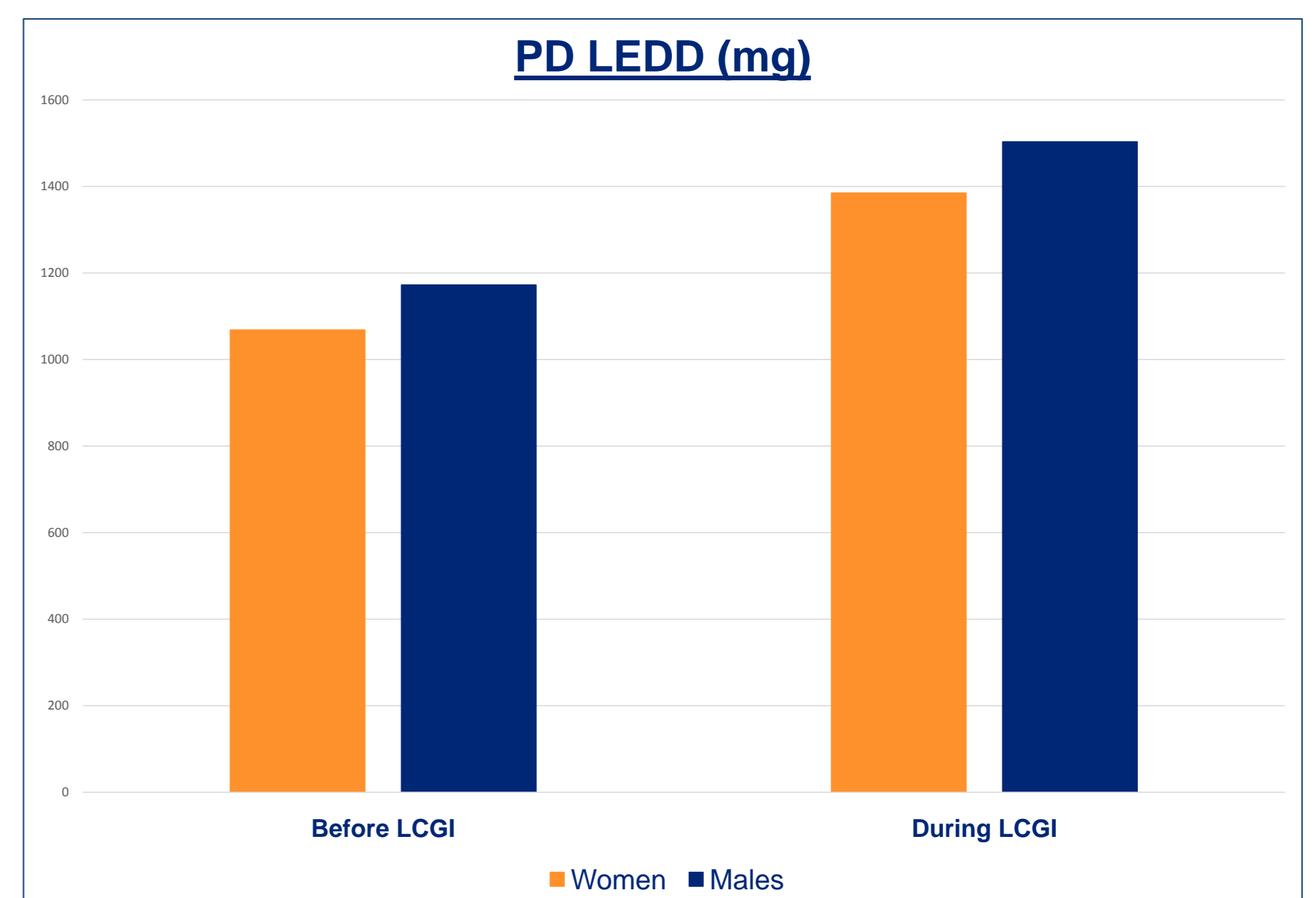


Fig. 1: PD patients LEDD before and during LCIG

Conclusions

In contrast to other drugs and advanced therapies which show anthropometric or gender dependency for total doses needed, our study showed that regardless from BSA, males and females PD patients, in advanced stage showed not statistically significant LEDDs difference, for both oral therapy and LCIG therapy. Therefore, this pilot and preliminary study shows that, the gender and the anthropometric indices are not good predictors of pharmacological therapy needed during the advanced stage of Parkinson's Disease. However, authors consider that further studies are needed to confirm this results.

Bibliography

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