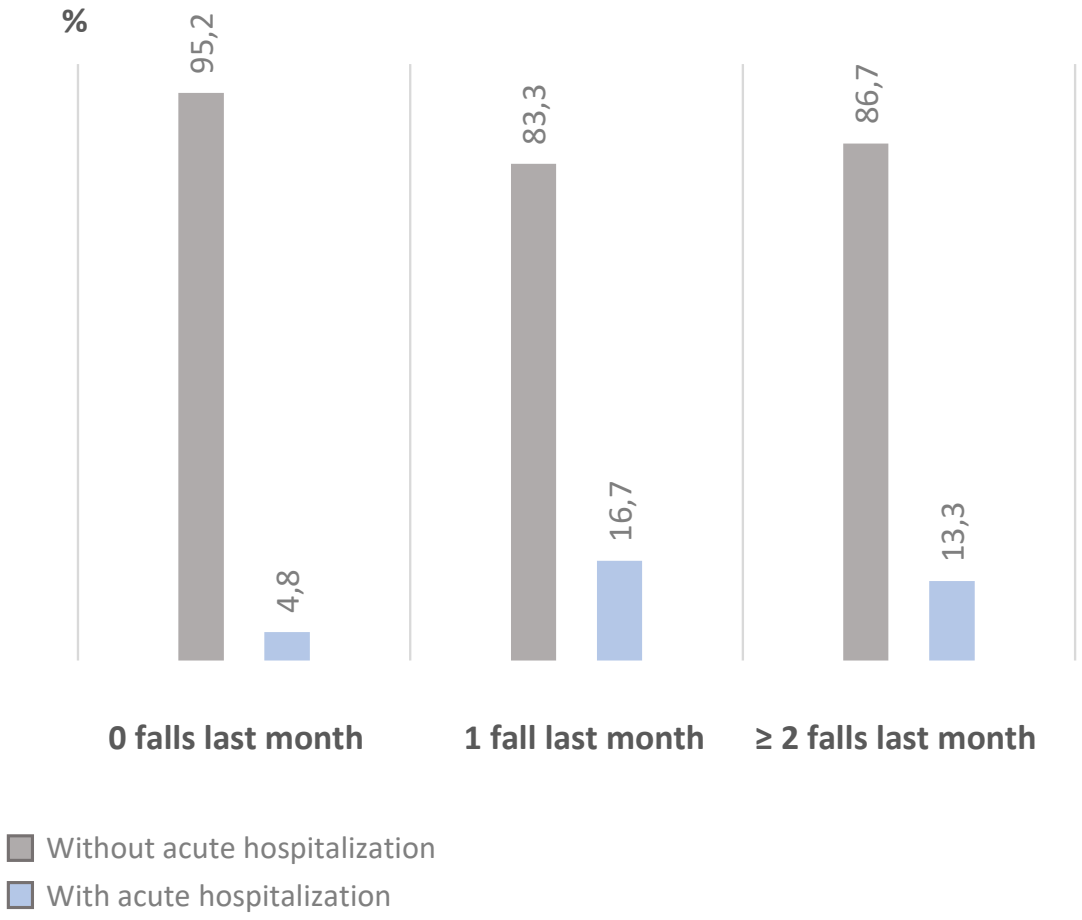
Supplementary Material

Falls Predict Acute Hospitalization in Parkinson's Disease

Supplementary Figure 1. Frequency of hospital admissions during the 1-year follow-up in patients regarding having falls or not on the month before the baseline visit (p=0.005).



Supplementary Table 1. Factor included in the model as potential predictors of acute hospitalization.

Principal Potential predictors of acute hospitalization	**Covariates included in the model for adjustment**
UPDRS-III-OFF. The hypothesis was that a higher UPDRS-III score indicating a worse motor status increases the risk of acute hospitalization. Specifically, a UPDRS-III score > 20 indicating moderate or severe motor affectation, was considered. **UPDRS-IV.** The hypothesis was that a higher UPDRS-IV score indicating more severe motor complications increases the risk of acute hospitalization. Specifically, motor complications and dyskinesia regarding the UPDRS-IV item-42 and UPDRS-IV item-35, respectively, were considered. **NMSS.** The hypothesis was that a higher NMSS total score indicating a greater NMS burden increases the risk of acute hospitalization. Specifically, severe (NMSS total score > 41-70) and very severe NMS burden (NMSS total score > 70) were considered [18]. **BDI-II.** The hypothesis was that a higher BDI-II total score indicating a worse mood increases the risk of acute hospitalization. Specifically, major depression regarding the DSM-IV criteria [16], was considered. **PD-CRS.** The hypothesis was that a lower PD-CRS total score indicating a worse cognitive function increases the risk of acute hospitalization. Specifically, a score ≤ 84 indicating cognitive impairment [19], was considered. **NPI.** The hypothesis was that a higher NPI score indicating more severe neuropsychiatric symptoms increases the risk of acute hospitalization. **Falls.** The hypothesis was that having falls increases the risk of acute hospitalization due to the risk of complications (fractures, etc.). **Dysphagia.** The hypothesis was that having dysphagia increases the risk of acute hospitalization due to the risk of complications (bronchoaspiration, etc.). **ADLS.** The hypothesis was that a lower ADLS indicating a greater disability increases the risk of acute hospitalization due to the risk of complications (falls, etc.). Specifically, functional dependency [21] was considered.	**Age.** The hypothesis was that older age increases the risk of acute hospitalization. **Gender** **Disease duration.** The hypothesis is that longer disease duration increases the risk of acute hospitalization due to a more clinical affectation with more complications. **LEDD [22].** The hypothesis is that higher LEDD increases the risk of acute hospitalization due to a more clinical affectation with more complications and longer disease duration. **Total number of non-antiparkinsonian drugs.** It was considered as a marker of comorbidity [23]. The hypothesis was that a higher number of non-antiparkinsonian drugs increases the risk of acute hospitalization due to a more clinical affectation with more complications.

ADLS, Activities of Daily Living Scale; BDI-II, Beck Depression Inventory II; LEED, Levodopa equivalent daily dose; NMSS, Non-Motor Symptoms Scale; NPI, Neuropsychiatric Inventory; PD-CRS, Parkinson's Disease Cognitive Rating Scale; UPDRS, Unified Parkinson's Disease Rating Scale.

Supplementary Table 2. Non-motor symptoms and quality of life in PD patients with and without acute hospitalization during the year after the baseline visit (n=605).

	All sample (N=605)	Without acute hospitalization (N=570)	With acute hospitalization (N=35)	p
NMSS total score	44.8 ± 36.7	41.9 ± 35	66.1 ± 42.8	**<0.0001**
- Cardiovascular	5.8 ± 10.3	5.7 ± 10.2	7.3 ± 12.3	0.892
- Sleep / fatigue	16.5 ± 16.2	16 ± 16.1	23.9 ± 17.1	**0.003**
- Mood / apathy	11.5 ± 16.2	11 ± 15.9	19.1 ± 18.8	**0.003**
- Perceptual symptoms	3.2 ± 9	2.9 ± 8.7	7.8 ± 12.9	**0.001**
- Attention / memory	9.8 ± 13.9	9.4 ± 13.8	15.9 ± 16.2	**0.001**
- Gastrointestinal symptoms	9.6 ± 13.1	9.3 ± 12.9	14.4 ± 15.2	**0.041**
- Urinary symptoms	21.7 ± 22.4	21.4 ± 22.5	27.1 ± 20.6	**0.040**
- Sexual dysfunction	19.2 ± 26	18.9 ± 25.9	24.4 ± 27.1	0.152
- Miscellaneous	15.2 ± 15.6	14.9 ± 15.4	19.9 ± 17.7	0.106
PDQ-39SI	17.2 ± 14.1	15.9 ± 13.3	26.6 ± 16	**<0.0001**
- Mobility	16.8 ± 19.5	16.2 ± 19.1	27.5 ± 23.2	**0.001**
- Activities of daily living	18.4 ± 18.9	17.5 ± 17.8	31.8 ± 27.9	**0.002**
- Emotional well-being	21.6 ± 20.1	20.9 ± 19.9	31.9 ± 21.5	**0.002**
- Stigma	13.8 ± 20	13.5 ± 19.9	18.2 ± 21.1	0.153
- Social support	8.3 ± 16.6	7.9 ± 16.3	12.9 ± 21.1	0.259
- Cognition	19.2 ± 17.8	18.6 ± 17.5	28.9 ± 19.6	**0.001**
- Communication	10.2 ± 15.3	9.7 ± 19	19 ± 16.9	**<0.0001**
- Pain and discomfort	27.1 ± 23.1	26.8 ± 23.1	32.1 ± 23.3	0.133

The results represent mean ± SD. Mann-Whitney-Wilcoxon test were applied for comparissons between Non acute hospitalization (N=570) and Acute unplanned Hospitalization (N=35) patients. NMSS, Non-Motor Symptoms Scale; PDQ-39SI, 39-item Parkinson's Disease Quality of Life Questionnaire Summary Index.