Long-term Persistence and Monotherapy with Device-Aided Therapies: A Retrospective Analysis of an Israeli Cohort of Patients with Advanced Parkinson’s Disease

Supplementary Material

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**Supplementary Table S1** Additional patient baseline characteristics

| Characteristic                      | LCIG (n = 62) | DBS (n = 76) | CSAI (n = 23) | p value |
|-------------------------------------|---------------|--------------|---------------|---------|
| Hospitalization days<sup>a</sup>    |               |              |               |         |
| None                                | 1 (1.6)       | 52 (68.4)    | 14 (60.9)     |         |
| 1–4                                 | 28 (45.2)     | 18 (23.7)    | 3 (13.0)      |         |
| 5–9                                 | 15 (24.2)     | 4 (5.3)      | 4 (17.4)      |         |
| 10–14                               | 6 (9.7)       | 1 (1.3)      | 1 (4.3)       | < 0.001 |
| 15+                                 | 12 (19.4)     | 1 (1.3)      | 1 (4.3)       |         |
| Maximum hospitalization days        | 69            | 19           | 66            |         |
| Emergency department visits<sup>a</sup> |           |              |               |         |
| 0                                   | 31 (50.0)     | 59 (77.6)    | 14 (60.9)     |         |
| 1                                   | 20 (32.3)     | 12 (15.8)    | 9 (39.1)      |         |
| 2+                                  | 11 (17.7)     | 5 (6.6)      | 0             | 0.022   |
| Maximum ED visits                   | 4             | 3            | 1             |         |
| Outpatient visits<sup>a</sup>       |               |              |               |         |
| 1–19                                | 6 (9.7)       | 6 (7.9)      | 3 (13.0)      |         |
| 20–39                               | 18 (29.0)     | 37 (48.7)    | 2 (8.7)       |         |
| 40–59                               | 13 (21.0)     | 12 (15.8)    | 6 (26.1)      |         |
| 60–79                               | 11 (17.7)     | 13 (17.1)    | 7 (30.4)      | 0.044   |
| 80+                                 | 14 (22.6)     | 8 (10.5)     | 5 (21.7)      |         |
| Maximum visits                      | 225           | 115          | 198           |         |
| Ambulatory device use               |               |              |               |         |
| Cane                                | 3 (4.8)       | 4 (5.3)      | 0             |         |
| Walker                              | 6 (9.7)       | 1 (1.3)      | 1 (4.3)       | 0.033   |
| Wheelchair                          | 11 (17.7)     | 4 (5.3)      | 11 (47.8)     |         |
| Caregiver support                   |               |              |               |         |
| Spouse                              | 0             | 1 (1.3)      | 0             |         |
| Other family member                 | 2 (3.2)       | 0            | 1 (4.3)       | 0.384   |
| Foreign worker                      | 18 (29.0)     | 8 (10.5)     | 8 (34.8)      |         |
| Employment status<sup>b</sup>       |               |              |               |         |
| No                                  | 32 (51.6)     | 28 (36.8)    | 14 (60.9)     |         |
| Yes                                 | 4 (6.5)       | 9 (11.8)     | 0             | 0.066   |
| Missing<sup>c</sup>                 | 26 (41.9)     | 39 (51.3)    | 9 (39.1)      |         |
| ≥ 65 years<sup>d</sup>              | 40 (64.5)     | 41 (53.9)    | 17 (73.9)     | 0.172   |

CSAI/ continuous subcutaneous apomorphine infusion, DBS deep brain stimulation, ED emergency department, LCIG levodopa-carbidopa intestinal gel

<sup>a</sup>Includes the 12 months before initiation of DAT

<sup>b</sup>Defined as “work” or “no work” based on free text searching

<sup>c</sup>Missing data indicates employment status was not recorded in physician’s notes

<sup>d</sup>Patients aged older than 65 years at first DAT initiation

p values were calculated using chi-square test
**Supplementary Table S2** DAT continuation among patients with sufficient follow-up

| Months | LCIG       | CSAI       |
|--------|------------|------------|
| 12     | 50/56 (89.3) | 14/17 (82.4) |
| 24     | 29/34 (85.3) | 7/13 (53.8)  |
| 36     | 19/25 (76.0) | 4/8 (50.0)   |
| 48     | 16/19 (84.2) | 3/3 (100)    |
| 60     | 12/15 (80.0) | 1/1 (100)    |

Data are presented as n/N (%) for patients with available follow-up time of 12, 24, 36, 48, and 60 months.  
*CSAI* continuous subcutaneous apomorphine infusion, *DAT* device-aided therapy, *LCIG* levodopa-carbidopa intestinal gel
## Supplementary Table S3  Adverse events

| AEs, n (%)                                      | LCIG (n = 62) | DBS (n = 76) | CSAI (n = 23) |
|-----------------------------------------------|---------------|--------------|---------------|
| Location of PEG-J / electrode problems        | 5 (8.1)       | 5 (6.7)      | 0             |
| Technical difficulties                        | 3 (4.8)       | 3 (4.0)      | 4 (17.4)      |
| Redness/infections around PEG-J/implant       | 14 (22.6)     | 4 (5.3)      | 0             |
| Symptoms worsen                               | 1 (1.6)       | 4 (5.3)      | 0             |
| Deaths                                        | 22 (35.5)     | 6 (7.9)      | 9 (39.1)      |
| Age at death, median (IQR), years             | 75.5 (69.8–80.6) | 80 (74.4–80.1) | 82.6 (76.2–85.7) |

Adverse events were extracted from free text. Deaths are reported in the database and did not require a free text search.

AEs adverse events, CSAI continuous subcutaneous apomorphine infusion, DAT device-aided therapy, DBS deep-brain stimulation, LCIG levodopa-carbidopa intestinal gel, PEG-J percutaneous endoscopic transgastric jejunostomy
### Supplementary Table S4  Annualized healthcare visit costs, USD$

|                      | LCIG (n = 62) | DBS (n = 76) | CSAI (n = 23) | p value |
|----------------------|---------------|--------------|---------------|---------|
| **Median healthcare**|               |              |               |         |
| **visit costs**      |               |              |               |         |
| (IQR)                | (594–15,266)  | (2106–6382)  | (3392–13,959) |         |
| **Baseline**         | 9491          | 4113         | 6378          | < 0.001 |
|                      | (594–15,266)  | (2106–6382)  | (3392–13,959) |         |
| **12 Months**        | 8146          | 7677         | 8277          |         |
|                      | (4164–18,481) | (6114–13,776)| (5107–17,791)| < 0.001 |
| **Last DAT**         | 5778          | 4320         | 8696          |         |
| **measurement**      | (3191–15,196) | (2122–7213)  | (5096–14,693)|         |

Healthcare visit costs are annualized over the preceding 12 months from the given time point. 

$p$ value was calculated using generalized linear mixed models with gamma distribution with log-link.

- *CSAI* continuous subcutaneous apomorphine infusion, *DAT* device-aided therapy, *DBS* deep brain stimulation, *IQR* interquartile range, *LCIG* levodopa-carbidopa intestinal gel, *USD$ United States dollars
- *Baseline* = 12 months before treatment initiation
- *12 months* = 12 months after treatment initiation
- *Last DAT measurement* = 12 months before the last DAT visit
Supplementary Fig. S1 Daily levodopa equivalent dose. Data includes LEDD additional to DAT. Data does not include levodopa delivered via LCIG or apomorphine delivered via CSAI as it was not possible to estimate administered dose from prescription data. Therefore, absolute LEDDs cannot be accurately compared between different therapies, but can be compared at different time points for each respective therapy. *p* values were calculated using one-way ANOVA. ANOVA analysis of variance, CSAI continuous subcutaneous apomorphine infusion, DAT device-aided therapy, DBS deep brain stimulation, LCIG levodopa-carbidopa intestinal gel, LEDD levodopa equivalent daily dose.
Supplementary Fig. S2 Annualized healthcare visits. *p* values were calculated using chi-square test.

CSAI: continuous subcutaneous apomorphine infusion, DAT: device-aided therapy, DBS: deep brain stimulation, ED: emergency department, LCIG: levodopa-carbidopa intestinal gel.