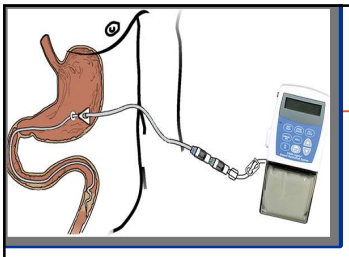
Avancerad Behandling: Pumpterapi

Per Odin, Professor, Head Division of Neurology, Lund University (Sweden)

1

Kontinuerlig dopaminerg stimulation för avancerad Parkinsonsjukdom

2



Pump-start: LCIG/LECIG

Att tänka på:

- Före start: Dagbok/PKG, L-dopa test, Neuropsykologi, rikligt med balanserad information
- PEG: Viktigt med erfaren gastroenterolog
- Monoterapi: I regel möjligt, men ibland fördelar med kombination, sätt ut DAg långsamt
- 16/24h terapi: Hos patienter med insomni: liberalt med 24h terapi
- Utbilda patient och anhöriga väl
- Efter utskrivning: Såväl firma som klinik bör vara lättillgängliga
- Täta kontakter i början av behandlingen

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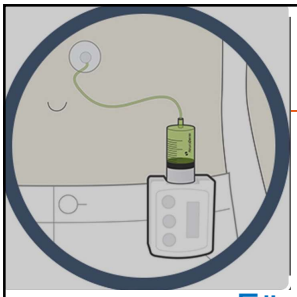

Pump-start: Apomorfin

Att tänka på:

- Före start: Dagbok/PKG, Apomorfintest, Neuropsykologi, rikligt med balanserad information
- Monoterapi: Ibland möjligt, men i regel fördelar med kombination, i första hand med låg dos l-dopa
- 16/24h terapi: Hos patienter med insomni: pröva gärna 24h terapi
- Byt infusionsställe minst 1 gång per dag
- Utbilda patient och anhöriga väl, särskilt avseende hudvård
- Efter utskrivning: Såväl firma som klinik bör vara lättillgängliga
- Täta kontakter i början av behandlingen

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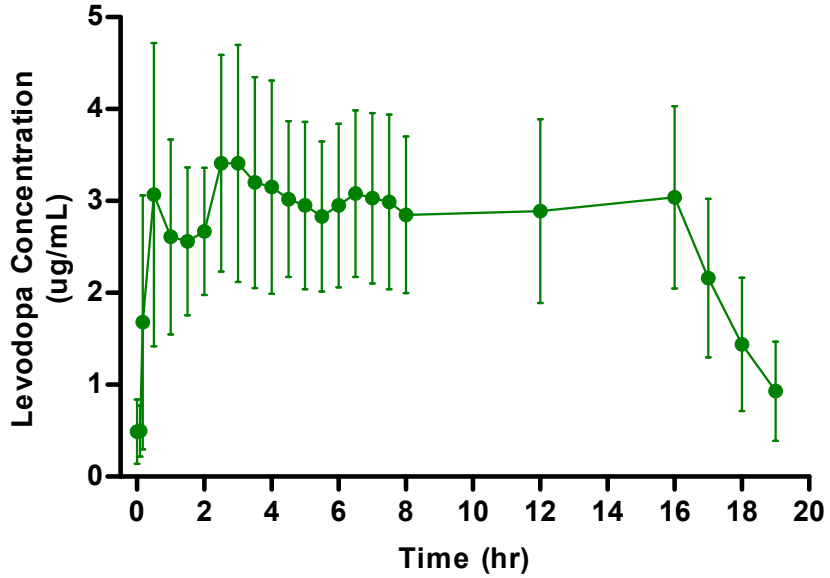
Profil av plasmakoncentrationen av levodopa över tid



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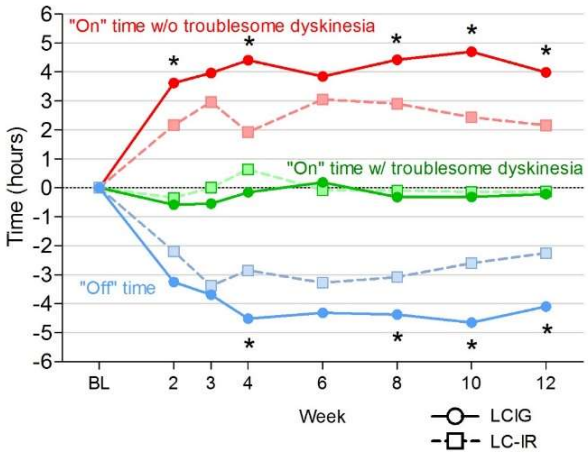
Nyholm D et al., 2013

5

Effekt på motoriska symtom

6

Förändring från baslinjen i ”off”- och ”on”-tid samt ”on”-tid med/utan besvärande dyskinesi



Skånes universitetssjukhus

Olanow CW et al., 2014

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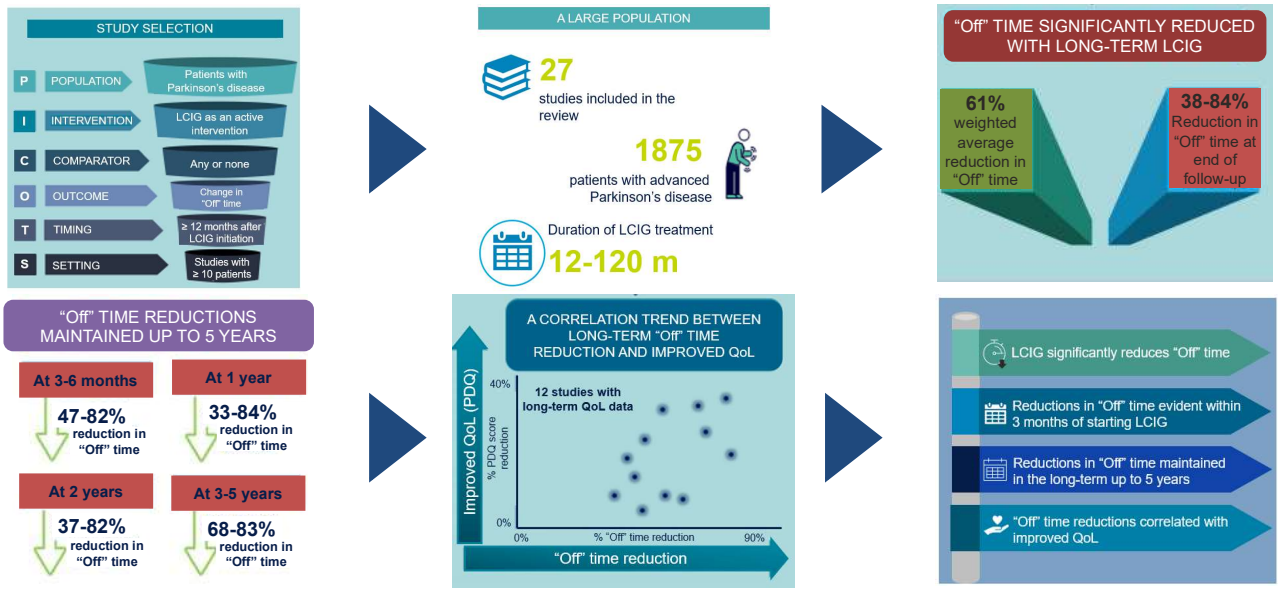
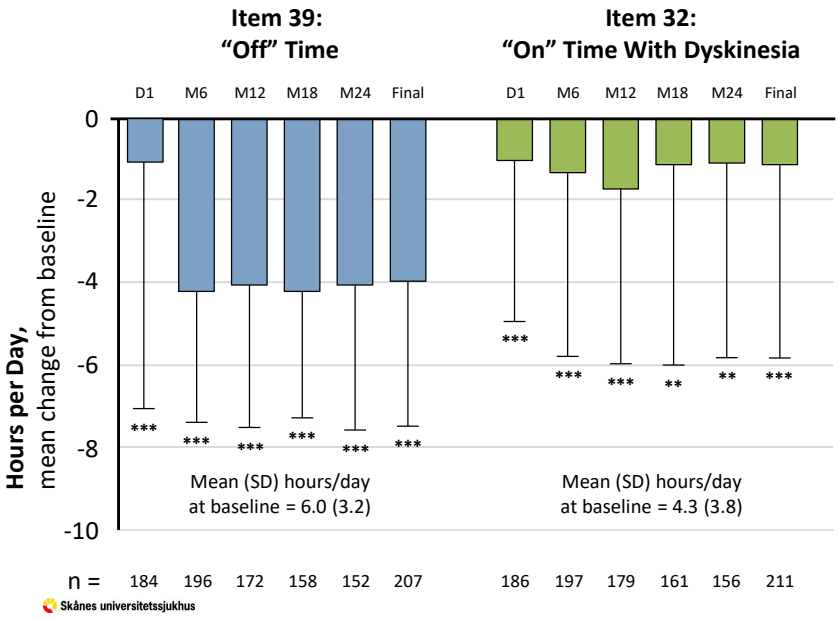


LCIG, levodopa carbidopa intestinal gel; QoL, quality of life

Antonini A, *et al. Adv Ther* 2021; **38**: 2854–2890.

8

Slutliga långtidsresultat från GLORIA-registret



Genomsnittlig förändring från baslinjen av dagliga timmar i "off"-tid och "on"-tid med dyskinesi (modifierad UPDRS del IV)

Antonini A et al., 2017

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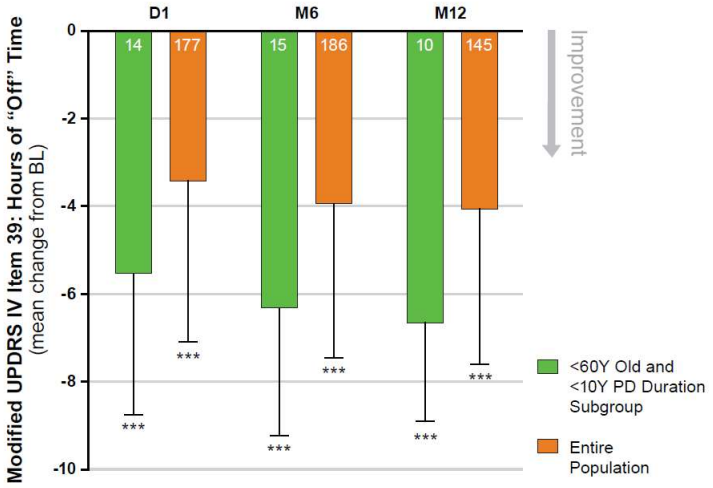
LORIA: post hoc-analys hos patienter i åldern <60 år och med en sjukdomsduration på <10 år

- **Genomsnittlig förändring från baslinjen av dagliga timmar "off" tid (UPDRS IV: modifierad punkt 39)**



Antonini A et al., 2018

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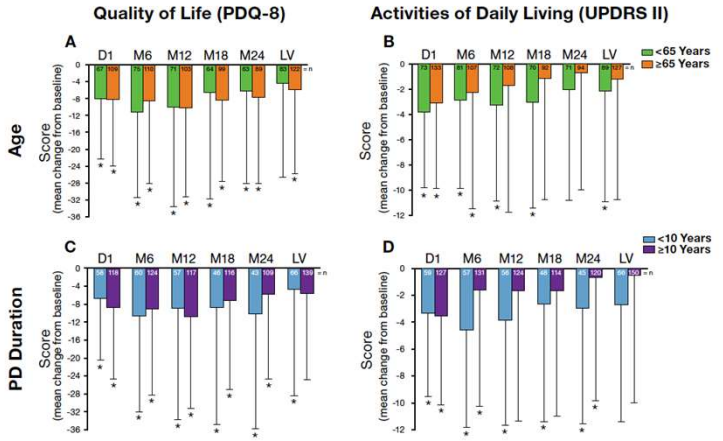
GLORIA: post hoc-analys hos patienter i åldern <60 år och med en sjukdomsduration på <10 år

- **Genomsnittlig förändring från baslinjen i totalpoäng för PDQ-8 och UPDRS II: undergrupper för ålder och varaktighet**



Error bars indicate standard deviation (SD). *P*-values from a paired t test indicate statistical significance compared to baseline at *P*<0.05 (*). D1 = discharge from hospital post-PEG-J placement; M = month; LV = last visit; PD = Parkinson's disease; PDQ-8 = Parkinson's' Disease Questionnaire 8-item; UPDRS = Unified Parkinson's Disease Rating Scale

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Antonini A et al., 2018

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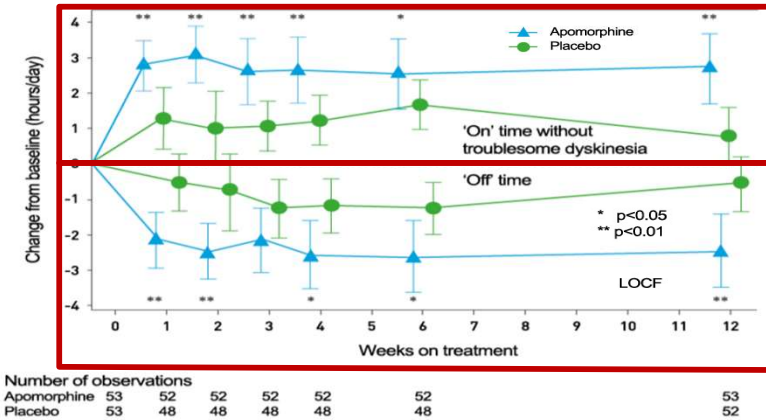
Toledo: Huvudsakliga resultat



Number of observations

Apomorphine	53	52	52	52	52	52		53
Placebo	53	48	48	48	48	48		52

ON time without troublesome dyskinesia: treatment difference: 1·97 hours [95% CI: 0.69, 3.24; p=0.0008]

Primary endpoint: absolute change in OFF time from baseline to Week 12 derived from patient diaries
OFF time treatment difference -1.89 hours (95% CI: -3.16, -0.62; p=0.0025)

Safety and tolerability	APO (n=54)	Placebo (n=53)
At least one treatment-emergent AE (TEAE)	50 (92.6%)	30 (56.6%)
Most common TEAE (≥10% of patients)		
Skin nodules at infusion site	24 (44.4%)	0
Nausea	12 (22.2%)	5 (9.4%)
Somnolence	12 (22.2%)	2 (3.8%)
Skin erythema at infusion site	9 (16.7%)	2 (3.8%)
Dyskinesia	8 (14.8%)	0
Headache	7 (13.0%)	2 (3.8%)
Insomnia	6 (11.1%)	1 (1.9%)
Serious AEs	5 (9.3%)	2 (3.8%)

Patient Global Impression of Change:
Favored apomorphine (p<0.0001)

Katzenschlager et al., 2018

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Effekt på dyskinesier

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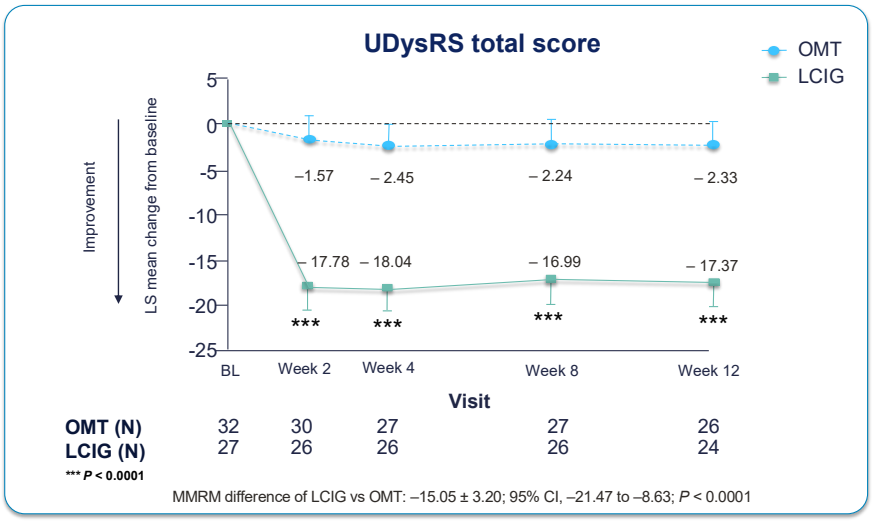
DYSCOVER-STUDIE: LCIG vs OMT-behandling minskade UDysRStotal-poängen signifikant redan vecka 2



The effect of LCIG on UDysRS total score was observed as early as week 2 and maintained to week 12

BL, baseline; LCIG, levodopa/carbidopa intestinal gel; LS, least squares; MMRM, mixed-effect model repeated measures; OMT, optimized medical treatment; UDysRS, Unified Dyskinesia Rating Scale; W, week.

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Freire-Alvarez E, *et al. Mov Disord* 2021; **36:**2615–2623.

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Effekt på icke-motoriska symtom

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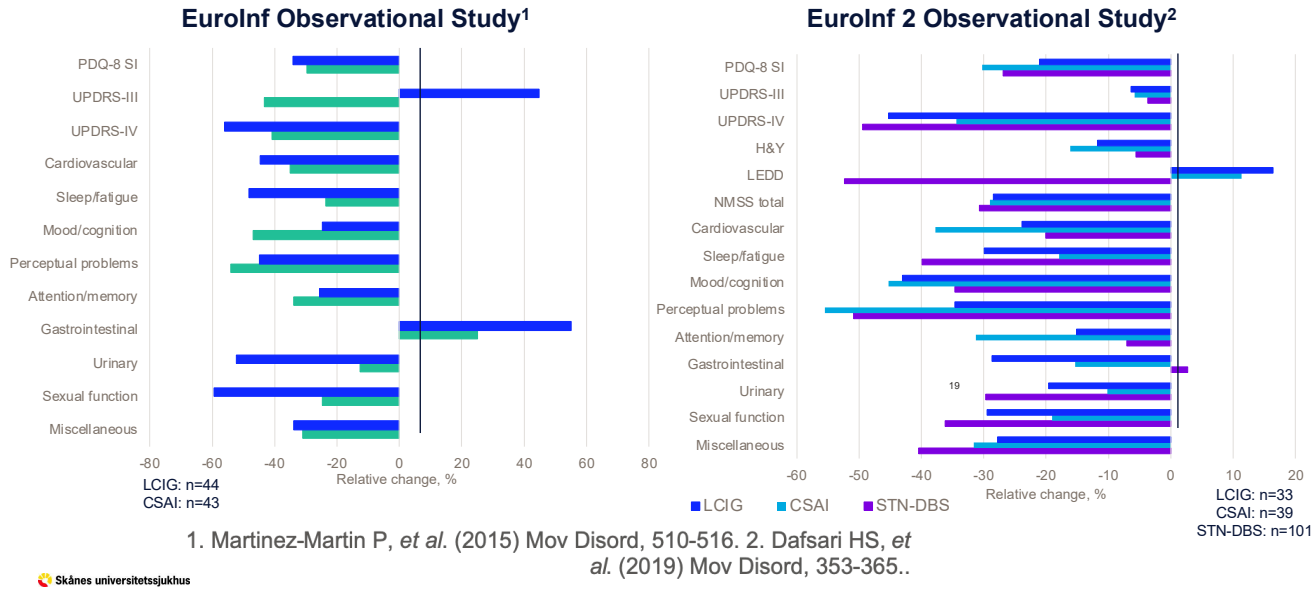
Eufoinf 2 studien



1. Martinez-Martin P, *et al.* (2015) Mov Disord, 510-516. 2. Dafsari HS, *et al.* (2019) Mov Disord, 353-365..

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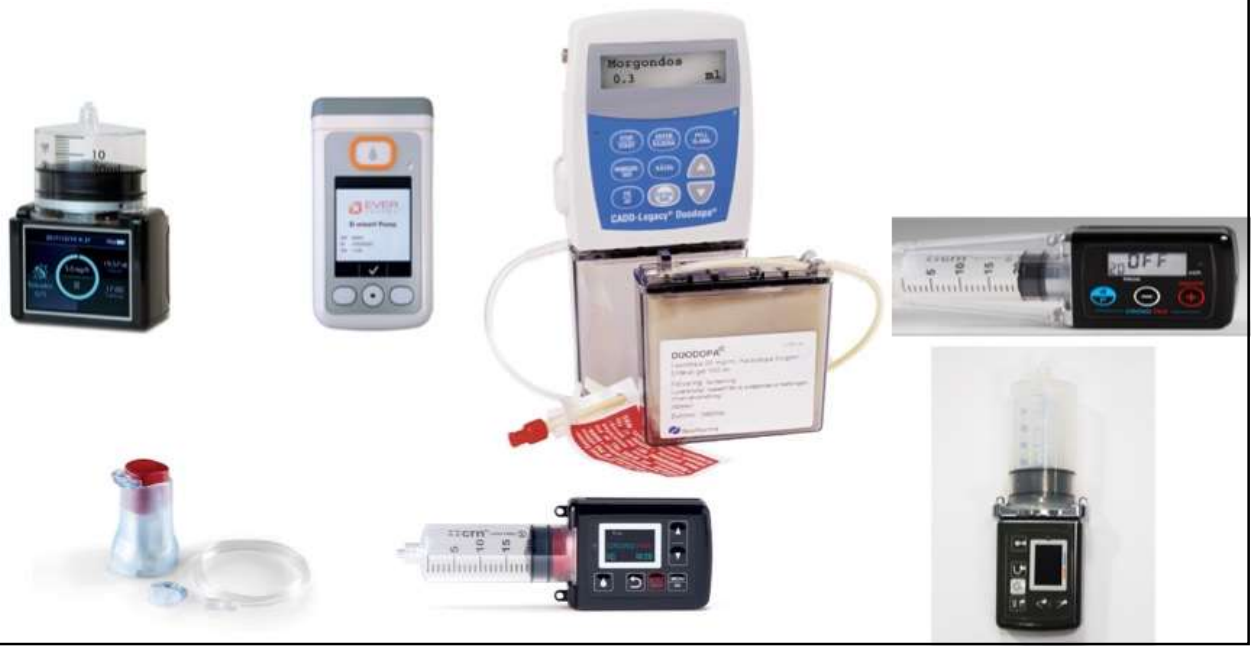
Effekter på hälsorelaterad livskvalitet



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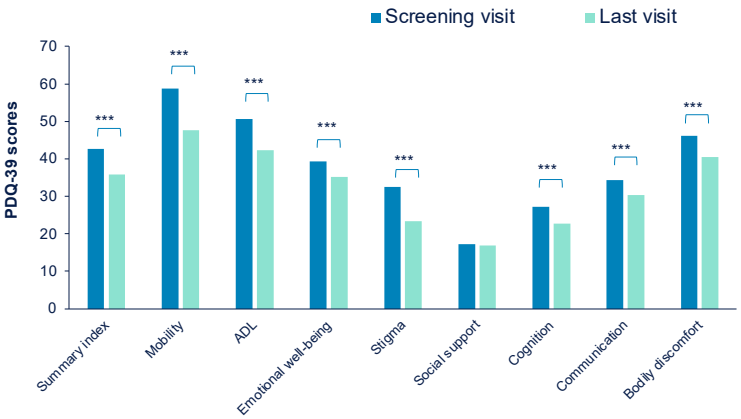
DAT kan avsevärt förbättra den individuella livskvaliteten

- **Large international, prospective, 54-week, open-label LCIG study**
  - Patients with PD and **severe motor fluctuations despite optimized therapy**
- **7 of 8 PDQ-39 domains** (except social support) showed statistically **significant mean improvements** in patients receiving **LCIG**



*** *P*<0.001; 1-sample t test.
PDQ-39, Parkinson's Disease Questionnaire-39; LCIG, levodopa-carbidopa intestinal gel.

Fernandez HH. *et al. Mov Discord* 2015; **30**: 500–509.

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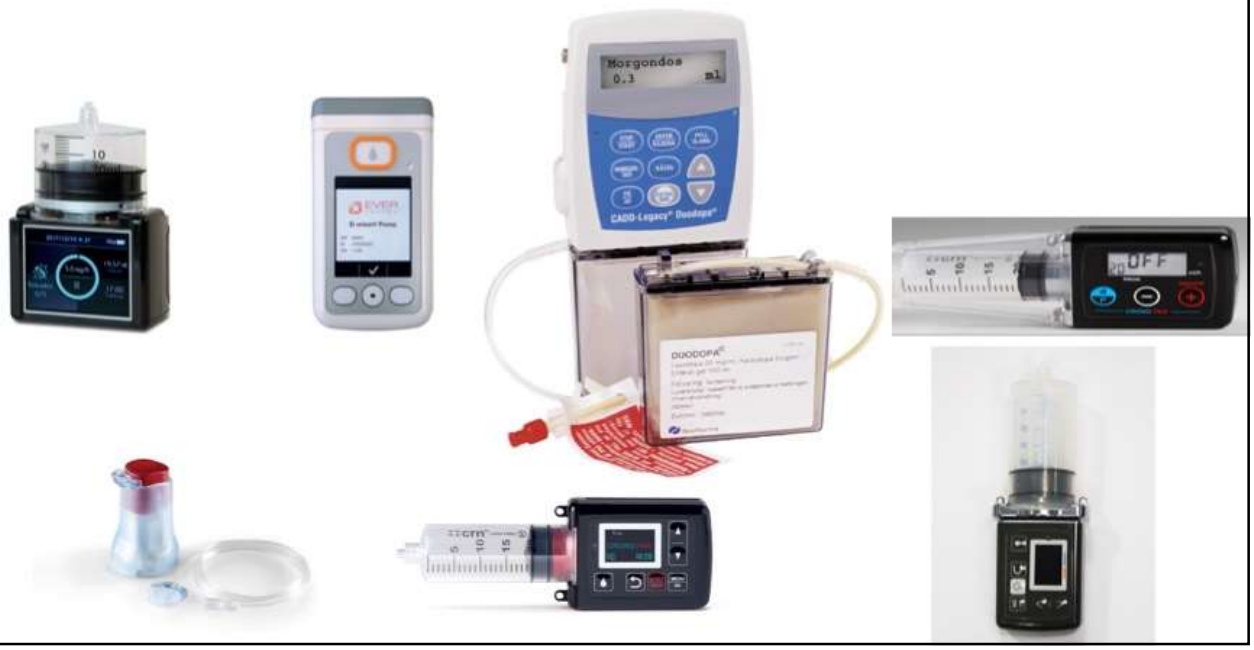
Biverkningar och komplikationer



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Navigate PD: Vilka är biverkningarna och komplikationerna för LCIG/LECIG

Surgical/device-related complications	
Complication of device insertion	21.4–56.6% [4,41,66]
Procedural pain	17.7–29.7% [4,41,66]
Post-operative wound infection	10.4–21.0[a]% [4,41,66]
Incision site erythema	9.4–18.9% [4,41,66]
Medical device site reaction	38.0[a]% [66]
Device dislocation	34.7[a]% [66]
Device occlusion	29.4[a]% [66]
Device-related infection	21.3[a]% [66]
Device connection issue	21.3[a]% [66]
Device breakage	11.9[a]% [66]
Unintentional removal of device by patient	10.6[a]% [66]
Device leakage	
Procedural site reaction	
Post procedural discharge	8.3–10.9[a]% [4,41,66]
Incision site pain	
Other	
Abdominal pain	30.7–34.2[a]% [41,66]
Flatulence	16.2% [4]
Constipation	13.5–21.6% [4,41]
Nausea	13.5–29.7% [4,41]
Excessive granulation tissue	13.5–18.2% [41,66]
Fall	10.9% [41]
Dyskinesia	10.9% [41]
Insomnia	10.8–10.9% [4,41]
Anxiety	10.4% [41]

Skånes universitetssjukhus

Odin P et al., 2015

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Navigate PD: Vilka är biverkningarna och komplikationerna för Apomorfinpump?

Table 3
The rate and frequency of the most common adverse events and complications associated with subcutaneous apomorphine.

	Relatively frequent (≥10%)	Infrequent (<10% to ≥5%)	Rare (<5%)
Administration/device-related complications			
Needle/injection-site pain	35.0% [35]		
Apomorphine-related complications			
Nodules	41–100.0% [23,32,36,65]		
Weight gain	60.0% [35]		
Neuropsychiatric AEs	36.4–44.0% [32,36]		
Daytime somnolence	31.0% [35]		
Nausea	4.0–18.2% [32,36]		
Orthostatic hypertension	16.0% [36]		
Mild sedation	13.6% [32]		
Coombs antiglobulin positive	12.5% [35]		
Hemolytic anemia		0.6–9.1% [35,23,32]	
Urinary urgency		8.0% [36]	
Abscess			1.6–4.0% [35,36]
Necrosis			0–4.0% [36,65]
Hyperlibidinous effect			4.0% [36]
Diarrhea			4.0% [36]

AE, adverse event.

Skånes universitetssjukhus

Odin P et al., 2015

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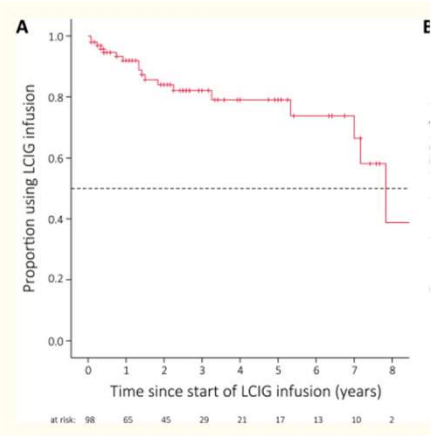
J Parkinsons Dis. 2020; 10(3): 935–944.
Published online 2020 Jul 28. Prepublished online 2020 Jul 15. doi: 10.3233/JPD-201978
PMCID: PMC7458507
PMID: 32675420

Predictors of Time to Discontinuation of Levodopa-Carbidopa Intestinal Gel Infusion: A Retrospective Cohort Study

Harmen R. Moes,[a,1,*] Jerney W.M.J. Groenendal-Laurensse,[b,1] Martje Drent,[a] Gerrit Tissingh,[b] and Teus van Laar[a]



Reasons for discontinuation of LCIG infusion and causes of death during treatment

Reason for discontinuation	*N*=18
Device-related side effects	5
Effect less than expected by patient	5
Switch to DBS	4
Effect less than expected by clinician	2
Switch to CAI	1
Drug-related side effects of LCIG	1
Cause of death	*N*=7
LCIG-related	0
Device-related	0
Other (not specified)	5
Unknown	2

98 patienter. Under en uppföljningstid på 2,6 år avbröt 8 LCIG och 7 avled. Genomsnittlig behandlingstid: 7,8 år

Moes et al., 2020

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Neurological Sciences (2019) 40:1917–1923
https://doi.org/10.1007/s10072-019-03920-5

ORIGINAL ARTICLE

Continuous subcutaneous apomorphine infusion in Parkinson's disease: causes of discontinuation and subsequent treatment strategies

Enrica Olivola[1] · Alfonso Fasano[2,3] · Sara Varanese[4] · Francesco Lena[1] · Marco Santilli[1] · Cinzia Femiano[1] · Diego Centonze[1,5] · Nicola Modugno[1]

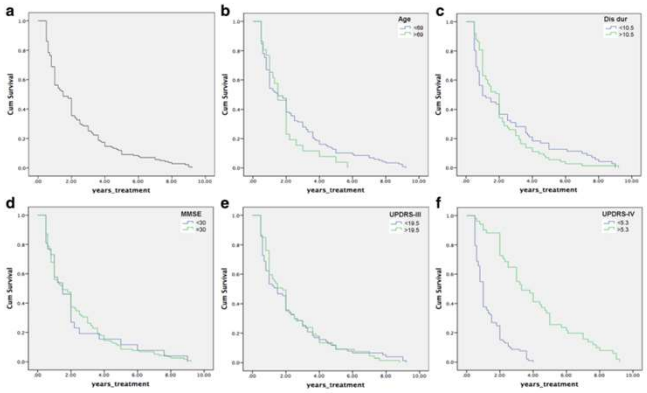
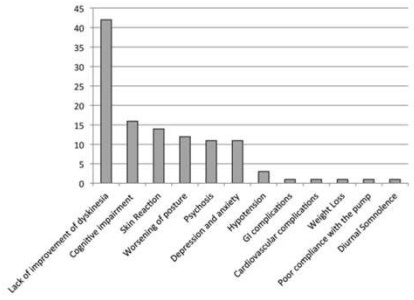


Fig. 1 Reasons for CSAI discontinuation



14 patienter som fått apomorfin i minst 6 månader

Olivola et al., 2019

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SoS nationella riktlinjer
Kostnad för avancerade behandlingar

- **Beräknade behandlingskostnader för ytterligare 500 patienter med avancerad vård under en 5-årsperiod**

	Additional no. of patients	Cost for advanced treatment (M SEK)	Cost of standard of care (M SEK)	Difference (M SEK)
Apomorphine Infusion Pump	95	159	156	3
DBS	225	264	374	-109
Duodopa®	180	395	303	92
Total	**500**	**818**	**833**	**-14**

Skånes universitetssjukhus

Swedish National Guidelines for Parkinson´s Disease.
The Board of Health and Welfare, 2016

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LECIG

Skånes universitetssjukhus

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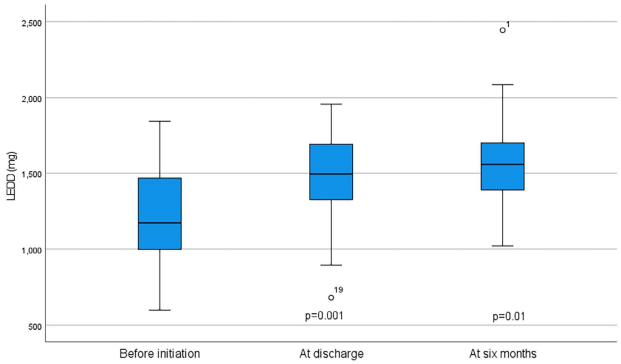
LECIG

Movement Disorders
CLINICAL PRACTICE

RESEARCH ARTICLE

Levodopa-Entacapone-Carbidopa Intestinal Gel Treatment in Advanced Parkinson's Disease: A Single-Center Study of 30 Patients

Vili Viljaharju, MD,[1,2,*] Tuomas Mertsalmi, MD, PhD,[1,2] K. Amande M. Pauls, MD, PhD,[1,2] Maija Koivu, MD,[1,2] Johanna Eerola-Rautio, MD, PhD,[1,2] Marianne Udd, MD, PhD,[3] and Eero Pekkonen, MD, PhD[1,2]



Viljaharju et al., 2023

Conclusions: LEDD seems to increase during the first months of LECIG treatment. When compared to studies on LCIG, safety profile of LECIG appears similar, but early discontinuation rate is higher than expected. However, long-term studies are lacking. Only clear advantage to LCIG appears to be the smaller LECIG pump size.

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LECIG

Received: 13 July 2024 | Accepted: 11 October 2024
DOI: 10.1111/ene.16535
ORIGINAL ARTICLE
european journal of neurology

Effectiveness and safety of levodopa–entacapone–carbidopa infusion in Parkinson disease: A real-world data study

Diego Santos-García[1,2,3,4] | Lydia López-Manzanares[5] | Inés Muro[5] | Pablo Lorenzo-

LUND UNIVERSITY

Multicenter, retrospektiv observationsstudie av patienter med avancerad PD som behandlats med LECIG.

Data Collection

V0 — V1 — V2

6 månaders behandling

64.4% initiated LECIG directly

35.6% switched from LCIG

Mean exposure to LECIG was 177.3 ± 110.5 days

73 PD Patients

Initial Patient Demographics

- Average age 70.1± 9.1 years
- 61.6% male 38.4% female
- Mean disease duration 14.4± 6.3 years
- V0, Mean OFF time 5.3± 2.9 hours
- 64.6% initiated directly
- 35.6% switched from levodopa-carbidopa intestinal gel (LCIG)

Skånes universitetssjukhus

Santos-Garcia et al., 2024

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LECIG

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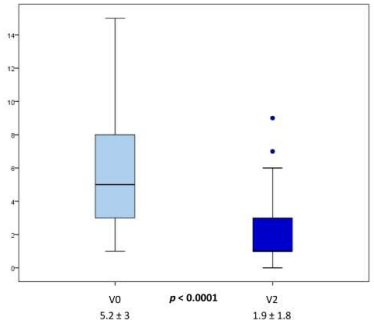
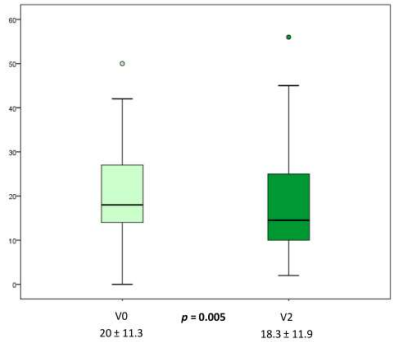
LUND UNIVERSITY

OFF time reduction (n=66)



From V0 to V2, a significant reduction in OFF time was observed (5.2 ± 3 vs. 1.9 ± 1.8 h)

UPDRS-III ON (n=54)



The mean score in the UPDRS-III during the ON state was also lower at V2 than at V0 (18.3 ± 11.9 vs. 20 ± 11.3)

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Santos-Garcia et al., 2024

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LECIG

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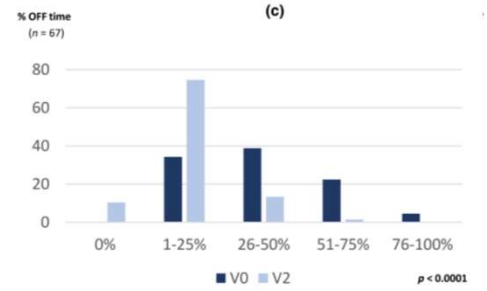
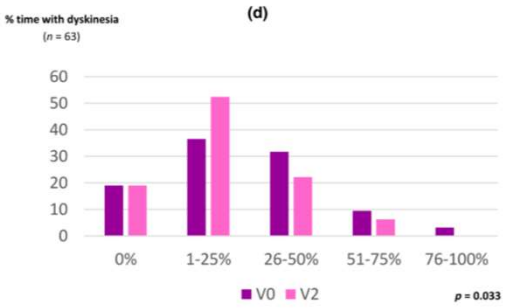
% OFF time (n=67)



% time with dyskinesia (n=63)



A decrease in the percentage of the day awake in the OFF state (n= 67, p< 0.0001) and with dyskinesia (n= 63, p= 0.033) was observed.

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LECIG

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ORIGINAL ARTICLE
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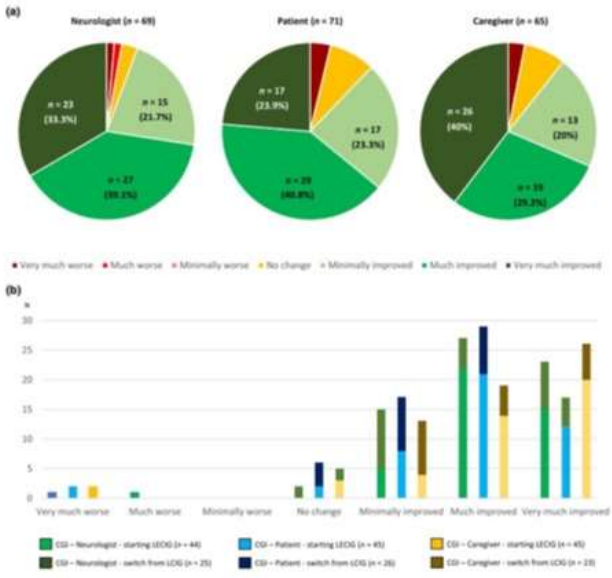

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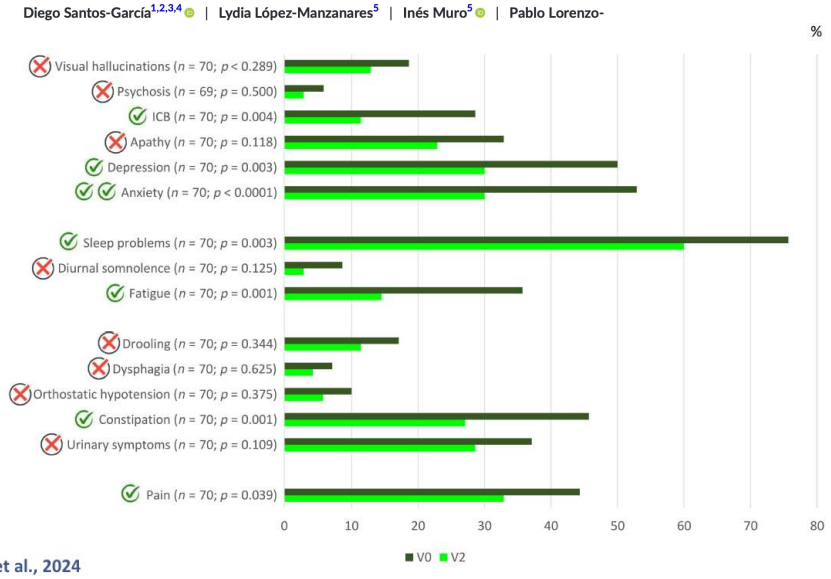
Percentage of patients suffering from different disabling nonmotor symptoms at V2 versus V0



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Effectiveness and safety of levodopa–entacapone–carbidopa infusion in Parkinson disease: A real-world data study

Diego Santos-García[1,2,3,4] | Lydia López-Manzanares[5] | Inés Muro[5] | Pablo Lorenzo-

AEs collected by the neurologist in patients receiving LECIG from V1 (initiation LECIG) to V2 (follow-up visit; 177.3 ± 110.5 days, range = 7–476).

Adverse Event (AE)	n (number of patients)
Total AEs	54
Patients with at least one AE	36
Patients with at least one AE related to LECIG and/or the device	34
Patients with at least one AE leading to discontinuation	5
Deaths	1

AE leading to discontinuation
Serious stoma infection (n=1)
Acute urinary retention with urological complication (n=1)
Psychosis (n=1)
Dyskinesia (n=1)
Ischemic colitis (n=1)

Due to severe stoma infection and acute renal failure during hospitalization.

Plasma Levels

Homocysteine
- A significant change was detected from V0 to V2 in the plasma levels of homocysteine (12.8 ± 4.0 mmol/L at V2 vs. 14.9 ± 4.6 mmol/L at V0, n= 15, p= 0.048)

B1 Vitamins
- No significant change was detected

B6 Vitamins
- No significant change was detected

B12 Vitamins
- No significant change was detected

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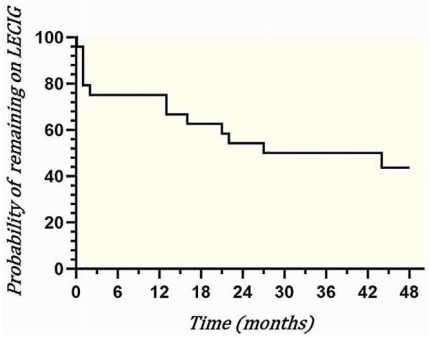
Santos-Garcia et al., 2024

LECIG

Movement Disorders
CLINICAL PRACTICE
BRIEF REPORT

A 4-Year Follow-Up of Levodopa-Entacapone-Carbidopa Intestinal Gel Treatment in Parkinson's Disease

Mezin Öthman, MD* and Dag Nyholm, MD, PhD



Öthman et al., 2024

Conclusions: LECIG infusion is a viable treatment option for PD patients with motor fluctuations, for up to 4 years in our cohort.

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Uppdatering om infusionsbaserade behandlingar: Subkutan infusion av levodopa

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Foslevodopa/Foscarbidopa (Produodopa) Översikt

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Vyafuser™ pump CE-mark evaluation ongoing.

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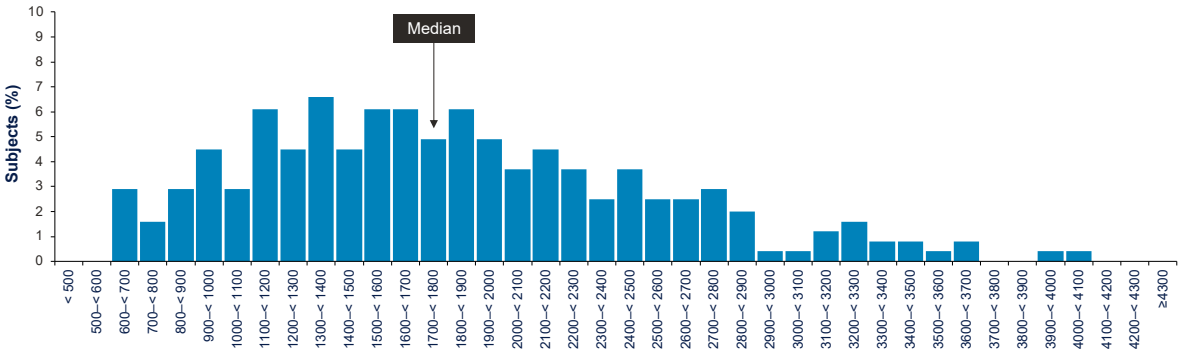
Study M15-741:

Dosing



N	Minimum	10%	25%	Median	75%	90%	Maximum
244	600–< 700	900–< 1000	1200–< 1300	1700–< 1800	2200–< 2300	2700–< 2800	4000–< 4100

- The median modal total daily dose was between 1700 and 1800 mg LD equivalents/day
- The infusion rates most frequently prescribed ranged from approximately 0.30 mL/hr to 0.60 mL/hr, which deliver approximately 1200 to 2400 mg of LD equivalents per day

Modal (most frequent) daily dose, expressed in 100 mg intervals of LD equivalents, was obtained for each subject and was calculated from the actual infusion rates used in subjects and the duration of infusion.
LD, levodopa.

AbbVie. Data on File (741).

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Study M15-741:

Safety översikt

AE category, n (%)	All subjects N = 244
Any TEAE	230 (94.3)
Any serious TEAE	63 (25.8)
Any TEAE leading to death	3 (1.2)
Any TEAE leading to study drug discontinuation	64 (26.2)
Any severe TEAE	63 (25.8)
Any TEAE considered related to study drug	224 (91.8)
Any TEAE associated with product complaints	181 (74.2)

- After 12 months, the majority of TEAEs were non-serious and mild-to-moderate in severity
- The most common AEs of special interest were related to the infusion site
- Majority of infusion site AEs were non-serious, were mild-to-moderate in severity, and resolved with or without treatment
- Skin tolerability was assessed using the Infusion Site Evaluation Scale (notable skin reaction: numeric grade of 5, 6, or 7 and a letter grade of D, E, F, or G): 10.2% of subjects had at least 1 observation of numeric grade ≥ 5 and a letter grade ≥ D

TEAE preferred terms, n (%)	All subjects N = 244
Infusion site erythema	127 (52.0)
Infusion site nodule	70 (28.7)
Infusion site cellulitis	56 (23.0)
Infusion site edema	47 (19.3)
Hallucination	42 (17.2)
Fall	41 (16.8)
Infusion site pain	38 (15.6)
Infusion site reaction	30 (12.3)
Anxiety	29 (11.9)
Infusion site abscess	27 (11.1)
Dizziness	25 (10.2)

Adverse events of special interest, n (%)	All subjects N = 244
Infusion site-related non-infection reactions	200 (82.0)
Infusion site-related infections	86 (35.2)
Falls and associated injuries	74 (30.3)
Hallucinations/psychosis	61 (25.0)
Weight loss	27 (11.1)
Somnolence	12 (4.9)
Polyneuropathy (narrow search)	8 (3.3)

AE, adverse event; TEAE, treatment-emergent adverse event.

Aldred J, *et al. Neurol Ther* 2023; **12**:1937–1958 (incl. suppl.).

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Nyckeln till framgång: god hudvård

- The majority of infusion site adverse events are **non-serious and mild to moderate** in severity

The **most common adverse events** of special interest were **related to the infusion site**

Infusion site **erythema** is the most frequently reported adverse event (51.2% of patients after 12 months of treatment)

Risk of treatment discontinuation due to infusion site reaction can be reduced by **training strategies** like education on management of skin reactions and Home Health Nurse support

Infusion site erythema	127 (52.0)
Infusion site nodule	70 (28.7)
Infusion site cellulitis	56 (23.0)
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Dizziness	25 (10.2)

LDp/CDp, foslevodopa/foscarbidopa.

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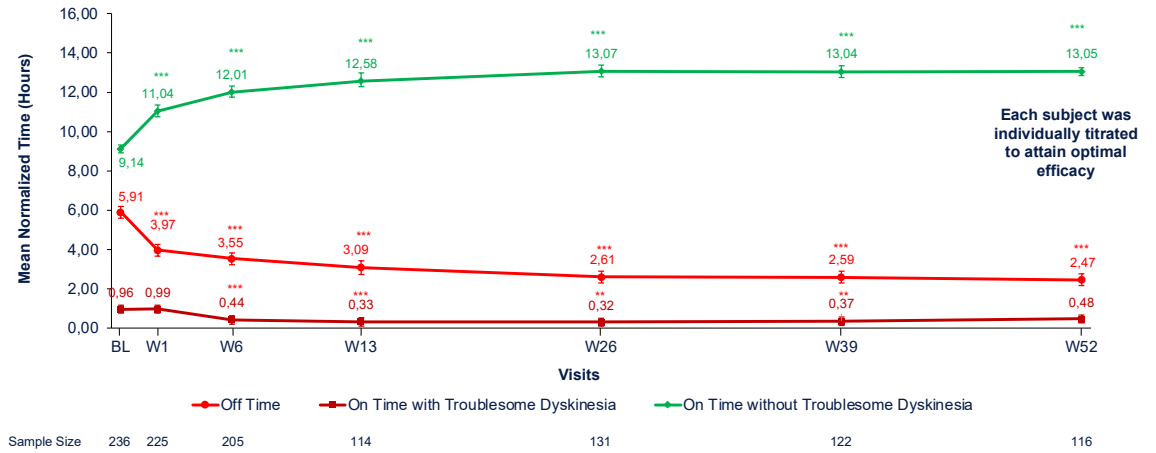
Study M15-741

Effektivitet: Genomsnittlig daglig normaliserad ”Off”-tid, ”On”-tid med besvärande dyskinesi, och ”on”-tid utan besvärande dyskinesi



* P-value <=0.05; ** P-value <=0.01; ***P-value <=0.001.
Note: BL = Baseline; W1 = Week 1; W6 = Week 6; W13 = Week 13; W26 = Week 26; W39 = Week 39; W52 = Week 52.

Aldred J, et al. Continuous Subcutaneous Foslevodopa/Foscarbidopa in Parkinson's Disease: Safety and Efficacy Results From a 12-Month, Single-Arm, Open-Label, Phase 3 Study. Neurol Ther. 2023 Aug 26. doi: 10.1007/s40120-023-00533-1. Online ahead of print.

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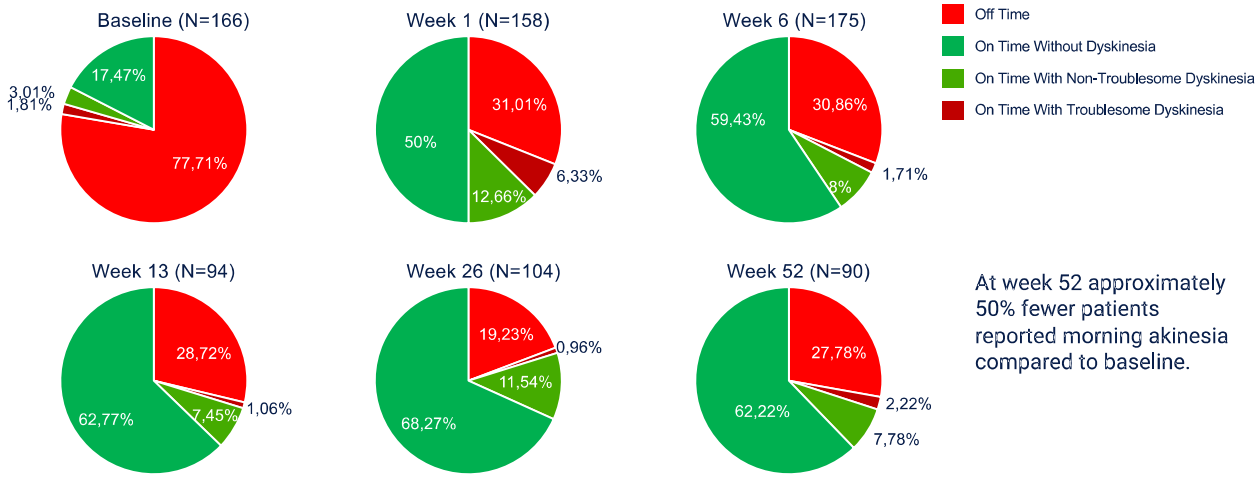
Study M15-741

Effektivitet:

Procentandel av försökspersonerna med morgonakinesi (vaknar i OFF-läge)



At week 52 approximately 50% fewer patients reported morning akinesia compared to baseline.

Aldred J, et al. Continuous Subcutaneous Foslevodopa/Foscarbidopa in Parkinson's Disease: Safety and Efficacy Results From a 12-Month, Single-Arm, Open-Label, Phase 3 Study. Neurol Ther. 2023 Aug 26. doi: 10.1007/s40120-023-00533-1. Online ahead of print.

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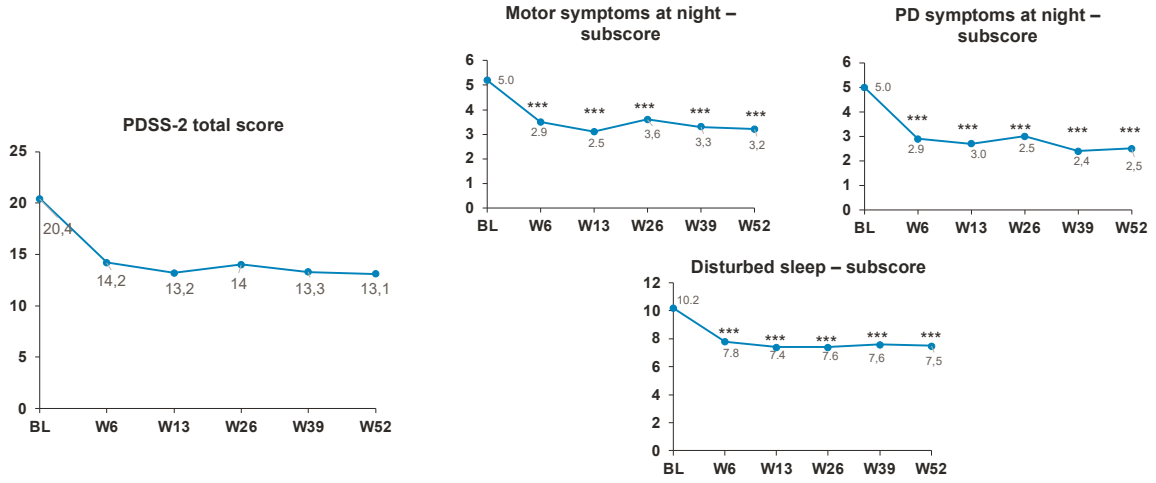
Study M15-741

Effektivitet:

Sömnkvalitet mätt med PDSS-2 och livskvalitet mätt med PDQ-39



*** $P < 0.001$, P-value reflects change from baseline.
BL, baseline; PDSS-2, Parkinson's Disease Sleep Scale; W, week.

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Aldred J, et al. Continuous Subcutaneous Foslevodopa/Foscarbidopa in Parkinson's Disease: Safety and Efficacy Results From a 12-Month, Single-Arm, Open-Label, Phase 3 Study. Neurol Ther. 2023 Aug 26. doi: 10.1007/s40120-023-00533-1. Online ahead of print.

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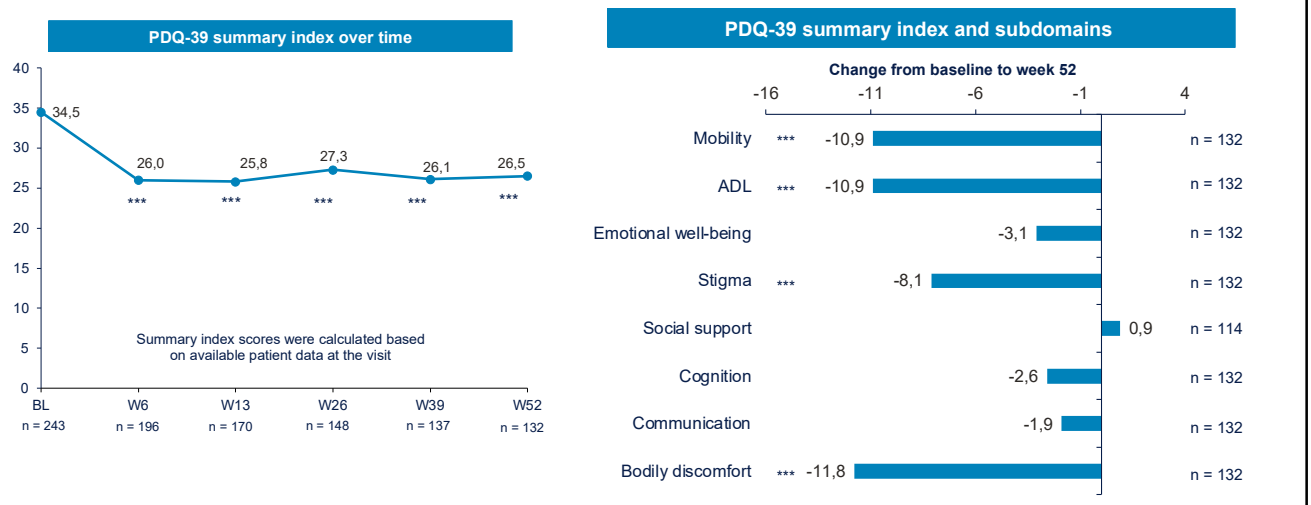
Study M15-741

Effektivitet:

Sömnkvalitet mätt med PDSS-2 och livskvalitet mätt med PDQ-39



$P < 0.05$; ** $P < 0.01$; *** $P < 0.0001$.
ADL, activities of daily living; BL, baseline; PDQ-39, 39-Item Parkinson's Disease Questionnaire; W, week.

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Aldred J, et al. Continuous Subcutaneous Foslevodopa/Foscarbidopa in Parkinson's Disease: Safety and Efficacy Results From a 12-Month, Single-Arm, Open-Label, Phase 3 Study. Neurol Ther. 2023 Aug 26. doi: 10.1007/s40120-023-00533-1. Online ahead of print.

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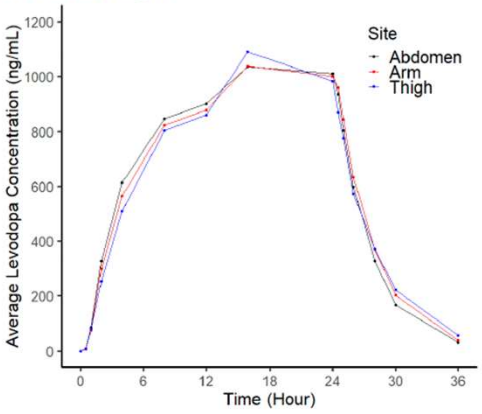
Resultat

Figure 2. Comparison of Mean Levodopa PK Profile following SC Infusion to Abdomen, Arm and Thigh



- LD and CD PK parameters following ABBV-951 infusion at different SC infusion sites are presented in Table 1.

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Rosebraugh et al., 2022

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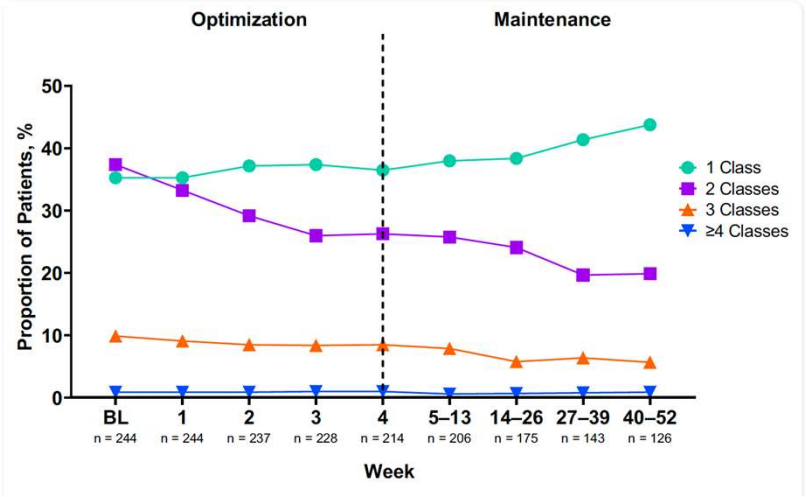
Resultat

Concomitant Medication Classes Other Than LD-Containing Medications and COMT Inhibitors

The proportion of patients using 2 or more classes of concomitant medications decreased through week 52, and a stable proportion of patients (above 25%) were treated with foslevodopa/foscarbidopa monotherapy during the maintenance period



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Santos Garcia et al., 2022

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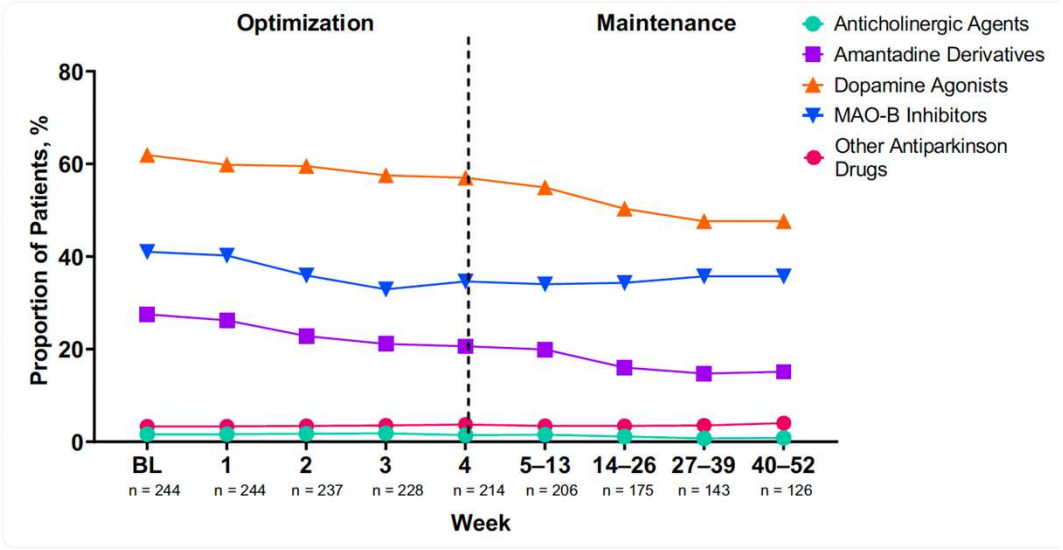
Resultat



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Santos Garcia et al., 2022

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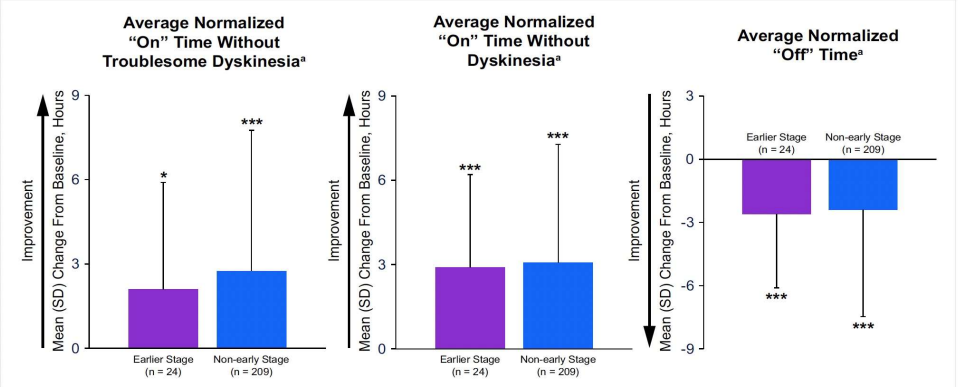
Avancerade PD-terapier: Tidig användning hos unga patienter - Foslevodopa/Foscarbidopa

Figure 4. Improvement From Baseline to Final Available Visit in Motor Fluctuations in Patients With an Earlier Stage and a Non-Early Stage of aPD Treated With LDP/CDP CSCI in the Open-label Trial



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*Early stage here defined as aged ≤65 years, Hoehn and Yahr stage score ≤2 ["On" state], and time since motor fluctuations ≤3 years

Antonini et al., 2023

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Pump-start: Foslevodopa/foskarbidopa

Att tänka på:

Före start: Dagbok/PKG, L-dopatest, Neuropsykologi, rikligt med balanserad information

- Monoterapi: I regel möjligt, men i regel fördelar med kombination
- 16/24h terapi: 24 h terapi regel, men 16 h kan övervägas
- Infusionsdos: Nytitrering kan bli nödvändig hos vissa patienter
- Vid behovsdos: Överväg Madopark Quick eller Apomorfinpenna
- Byt infusionsställe minst 1 gång per dag
- Utbilda patient och anhöriga väl, särskilt avseende hudvård; hygien!
- Efter utskrivning: Såväl firma som klinik bör vara lättillgängliga
- Täta kontakter i början av behandlingen

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5-2-1 kriterierna – Delphi consensus

Skånes universitetssjukhus

Antonini et al. *Curr Med Res Opin* 2018; 34:2063-2073

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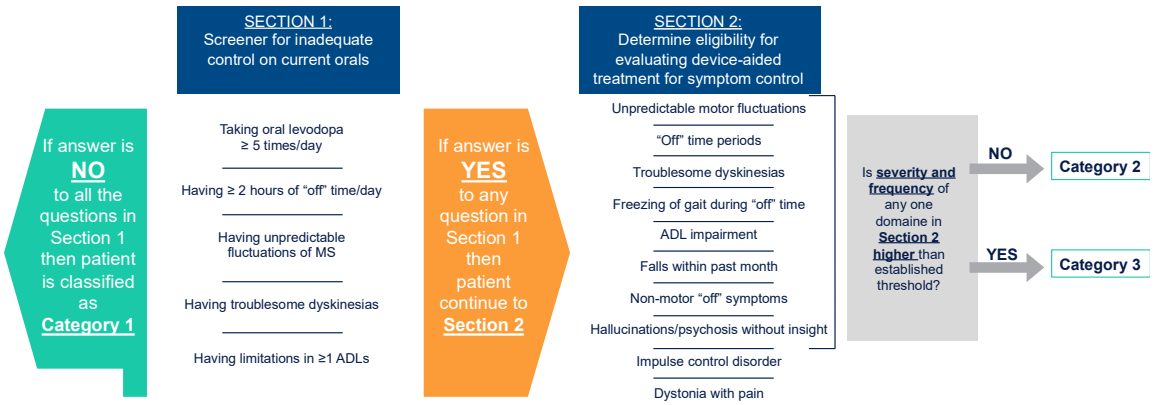
Manage-PD



www.managepd.eu

Antlonini et al., 2018

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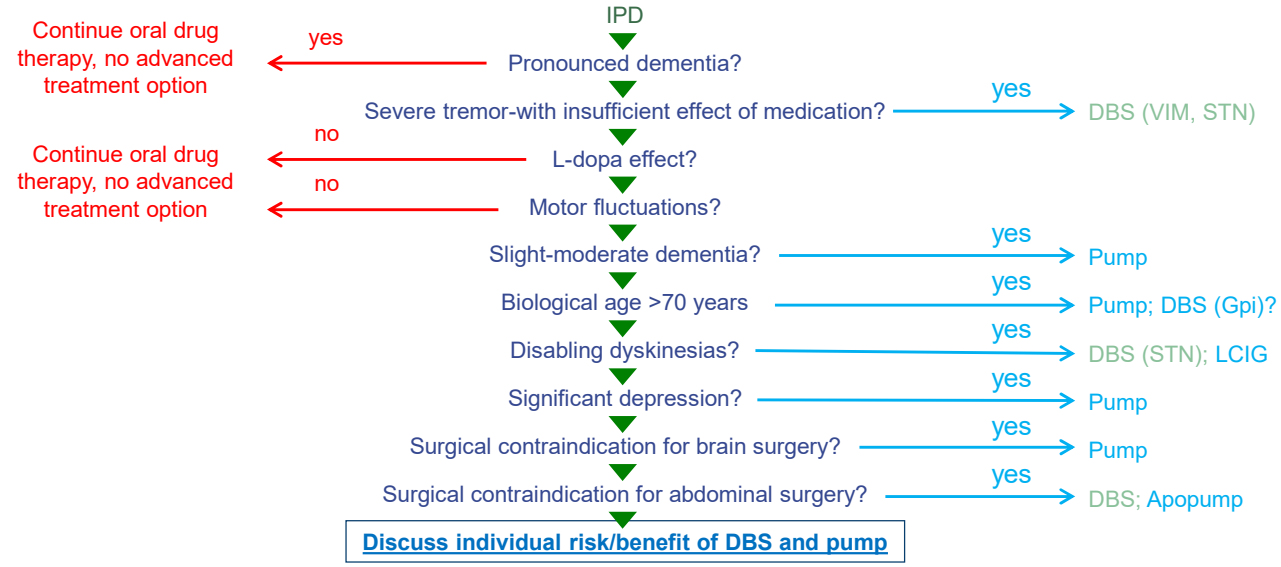
Vilka faktorer skulle kunna tala för att välja en avancerad behandling framför en annan?



Skånes universitetssjukhus

Cenci MA et al. *CNS & Neurological Disorders - Drug Targets* 2011; 10:670-684

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Navigate PD: Faktorer som påverkar beslut om att använda en apparatstödd terapi framför en annan

Symptom	CSAI	STN-DBS	LCIG	
Dyskinesias	+	++	+	*
Slight ongoing hallucinations	+/–	+/–	+/–	*
Drug-related hallucinations and/or delusions in patient history	+/–	+	+	*
Marked ongoing hallucinations/psychosis (delirium)	–	–	+/–	
Impulse control disorders	–	+	+	
Drug-related daytime somnolence	–	+/–	+/–	
Maintenance insomnia	+	+	+	
Mild cognitive impairment	+/–	+/–	+	

++	Presence of symptom **strongly supports** decision to select
+	Presence of symptom **supports** decision to select
+/–	Presence of symptom **requires further investigation**
–	Presence of symptom **discourages** decision to select

*A different role for Produodopa?

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Odin P et al., 2015

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Navigate PD: Faktorer som påverkar beslut om att använda en apparatstödd terapi framför en annan

Symptom	CSAI	STN-DBS	LCIG
Dementia	–	–	+/–
Pronounced therapy-refractory depression	+	–	+
Non-motor fluctuations (eg, anxiety, pain, clouded thinking, apathy)	+	+	+
Dysphagia	+/–	–	+/–
Dysarthria	+	–	+
L-DOPA-unresponsive postural and gait problems, falls	+/–	–	+/–
Restless legs	+	+/–	+
Orthostatic hypotension	–	+/–	+/–

++	Presence of symptom **strongly supports** decision to select
+	Presence of symptom **supports** decision to select
+/–	Presence of symptom **requires further investigation**
–	Presence of symptom **discourages** decision to select

Odin P, Chaudhuri KR, *et al*. (2015) Parkinsonism Relat Disord, 1133-1144.

*A different role for Produodopa?

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Odin P et al., 2015

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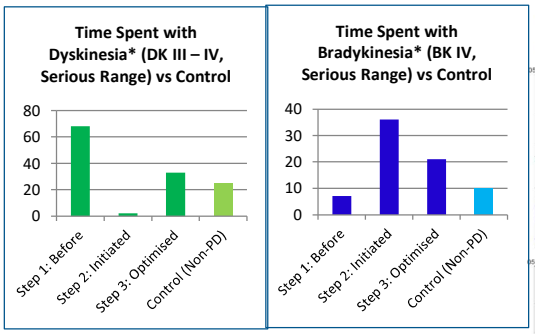
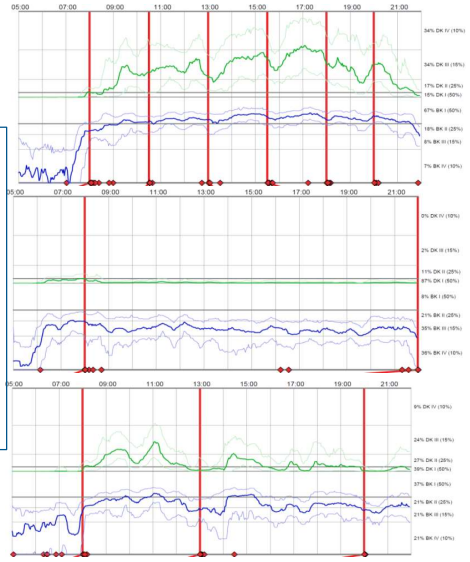
Monitorering av motoriska symtom som grund för optimering av pumpens effekt





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http://www.globalkineticscorporation.com

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Sammanfattning

-Vid avancerad PD finns det betydande bevis för att pumpbaserade behandlingar kan förbättra:

- -Motoriska symtom
- -Icke-motoriska symptom
- -Hälsorelaterad livskvalitet

-Selektion av patient och val av terapi av avgörande betydelse

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Stort Tack för er uppmärksamhet!

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