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Data Article

Data on the effect of Parkinson's disease multimodal complex treatment in a German University Hospital

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ABSTRACT

This article presents demographic and detailed clinical data from 159 patients with Parkinson's disease or atypical Parkinsonian syndromes treated in the Parkinson's disease multimodal complex treatment (PD-MCT) from 01.01.2019 until 31.12.2019 at the Department of Neurology of the University Hospital Jena, Germany. At baseline, the following variables were collected: age, sex, diagnosis, phenotype, disease duration, Hoehn and Yahr stage, Movement Disorder Society sponsored revision of the unified Parkinson's disease rating scale (MDS-UPDRS) part I-IV, levodopa equivalent daily dose (LEDD), Tinetti test, nonmotor symptoms questionnaire (NMSQ), Montreal Cognitive Assessment (MoCA), measures of depressive symptoms using the Hospital Anxiety and Depression Scale (HADS-D) and the Beck Depression Inventory (BDI-II), health-related quality of life assessed by the Short-Form Health Survey (SF-12), and the treatment duration according to the Operation and Procedure Classification System. To assess the short-term effect of PD-MCT, the MDS-UPDRS III, Tinetti test, and LEDD were collected again at discharge from hospital. One month after discharge, a first follow-up was conducted and patients rated their general condition. One year after discharge, a second follow-up was conducted and the SF-12 was collected. The dataset allows determination of the effect of PD-MCT and identification of predictors of a beneficial treatment. The dataset can be used by

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clinicians and academia for further research and as reference. The dataset can also be used in a large range of other topics where demographic and clinical parameters of the PD-MCT are relevant. The data presented herein is associated with the research article "Short- and Long-Term Effect of Parkinson's Disease Multimodal Complex Treatment" [1] and available on Mendeley Data [2].

Specifications Table

Subject	Clinical Neurology
Specific subject area	Movement disorders; Health services research
Type of data	Table
How the data were acquired	The data were obtained from 159 patients, who were admitted for PD-MCT at the Department of Neurology of the University Hospital Jena, Germany, from 01.01.2019 until 31.12.2019.
Data format	Raw and analyzed
Description of data collection	Baseline data collection was done during patients stay at hospital by self-report (demographic data, diagnosis, disease duration, MDS-UPDRS part IB, II, NMSQ, BDI-II, HADS-D, SF-12), interview (MDS-UPDRS part IA, IV, MoCA, LEDD), and standardized clinical examination (phenotype, Hoehn and Yahr stage, MDS-UPDRS part III, IV, Tinetti test). Follow-up data collections after one month and one year were conducted by telephone interview.
Data source location	Department of Neurology, Jena University Hospital, Jena, Germany
Data accessibility	Repository name: Mendeley Data Data identification No. 10.17632/ky9ky6wvd2.2 Direct URL to data: https://data.mendeley.com/datasets/ky9ky6wvd2/2
Related research article	Heimrich KG, Prell T. Short- and Long-Term Effect of Parkinson's Disease Multimodal Complex Treatment. Brain Sciences. 2021; 11(11):1460. https://doi.org/10.3390/brainsci11111460

Abbreviations: BDI-II: Beck Depression Inventory. HADS-D: Hospital Anxiety and Depression Scale. LEDD: Levodopa equivalent daily dose. MDS-UPDRS: Movement Disorder Society sponsored revision of the unified Parkinson's disease rating scale. MoCA: Montreal Cognitive Assessment. NMSQ: Nonmotor symptoms questionnaire. PD-MCT: Parkinson's disease multimodal complex treatment. SF-12: Short-Form Health Survey.

Value of the Data

- The data presented in this article provide information about demographic and detailed clinical data of patients with idiopathic Parkinson's disease or atypical Parkinsonian syndromes who were treated in a multidisciplinary inpatient setting.
- The data allows determination of the short- and long-term effect of the Parkinson's disease multimodal complex treatment.
- The data allows identification of patients characteristics that are predictive of a beneficial inpatient treatment, which aims to improve patients health.
- The data can be used by clinicians treating patients with idiopathic Parkinson's disease or atypical Parkinsonian syndromes and academia with interest in multidisciplinary care and health service research as reference and as basis for further multicenter evaluations.

1. Data Description

The data presents information about demographic and detailed clinical data from 159 patients with Parkinson's disease or atypical Parkinsonian syndromes, who were treated as inpatients within the Parkinson's disease multimodal complex treatment (PD-MCT). This includes 134 patients with Parkinson's disease and 25 patients with atypical Parkinsonian syndromes (*diagnosis*: idiopathic Parkinson's disease "1", atypical Parkinsonian syndromes "2"). Patients were treated for 7–13 days (*treatment_duration* "0"), 14–20 days (*treatment_duration* "1"), and for at least 21 days (*treatment_duration* "2"). The majority of the patients were treated for 14–20 days (76.1%), 34 patients were treated for 7–13 days (21.4%), and four patients were treated for at least 21 days (2.5%). Patients age is given in groups (*age_group*: $<$ 55 years "1", 55–59 years "2", 60–64 years "3", 65–69 years "4", 70–74 years "5", 75–79 years "6", 80–84 years "7", 85–89 years "8", $\geq$ 90 years "9"). The majority of the patients were aged above 70 years (median *age_group* = 5). Sex is binary coded (male "0"; female "1"). Of 159 patients, 100 were male (62.9%) and 59 female (37.1%). The clinical *phenotype* was classified into akinetic-rigid ("1"), tremor-dominant ("2"), and not determined ("3"). The majority of patients had an akinetic-rigid phenotype (108, 67.9%), and 13 patients (8.2%) had a tremor-dominant phenotype. The time since disease onset (*disease_duration*) is given in years with a mean duration of 9 $\pm$ 6 years. According to the Hoehn and Yahr stage, the majority of patients had postural instability (Hoehn and Yahr $\geq$ 3). Mean total score of the Movement Disorder Society sponsored revision of the unified Parkinson's disease rating scale (MDS-UPDRS) of the patients was 74 $\pm$ 25 (*MDS-UPDRS_total)*. On average, patients had a levodopa equivalent daily dose (*LEDD*) of 796 $\pm$ 523 mg. Mean score of the *Tinetti* test was 18.4 $\pm$ 7.3 points. Patients had a mean of 12 non-motor symptoms revealed by the nonmotor symptoms questionnaire (*NMSQ*). According to the Montreal Cognitive Assessment (*MoCA*), 14 patients (8.8%) had normal cognition (MoCA $\geq$ 26), 61 patients (38.4%) showed mild cognitive impairment (MoCA 21–25), and 79 patients (49.7%) had dementia (MoCA $<$ 21). Assessment of the Hospital Anxiety and Depression Scale (HADS-D) revealed a mean score of 8.0 $\pm$ 4.5. Likewise, assessment of Beck Depression Inventory (BDI-II) revealed a mean score of 12.5 $\pm$ 7.9. At baseline, the physical (*SF12_physical*) and mental health score (*SF12_mental*) of health-related quality of life assessed by the Short-Form Health Survey (SF-12) were determined with standardized mean scores of 50 $\pm$ 10. Thereby, higher values correspond to a higher physical or mental health-related quality of life.

To assess the short-term effect of PD-MCT, the MDS-UPDRS part III (*MDS_UPDRS_III_dis*), Tinetti test (*Tinetti_dis*), and LEDD (*LEDD_dis*) were collected a second time at discharge.

One month after discharge, 95 patients rated their general condition (*feeling_month*: better "1", equal "2", worse "3"). Of 95 patients, 35 patients (36.8%) reported to feel better, while 31 patients (32.6%) reported to feel worse.

One year after discharge, 84 patients completed the SF-12 questionnaire and again, the physical (*SF12_physical_year*) and mental health score (*SF12_mental_year*) were determined.

2. Experimental Design, Materials and Methods

Data from 159 patients were collected (consecutive sampling) during their stay on the neurological ward for PD-MCT at the Department of Neurology of the University Hospital Jena, Germany, from 01.01.2019 until 31.12.2019. Patients were admitted, if they had Parkinson's disease or atypical Parkinsonian syndromes. The study was approved by the local ethics committee. Written informed consent was obtained from all subjects prior to participation. PD-MCT was performed in accordance with the requirements of the Operation and Procedure Classification System as an official coding system for medical procedures in Germany. Patients were treated for 7–13 days (OPS8-97d.0), 14–20 days (OPS8-97d.1), or for at least 21 days (OPS8-97d.2). Patients were assigned to each group based on the duration of the treatment at discharge.

Baseline data were collected at the beginning of PD-MCT by self-report (demographic data, diagnosis, disease duration, MDS-UPDRS part IB, II, NMSQ, BDI-II, HADS-D, SF-12), interview (MDS-UPDRS part IA, IV, MoCA, LEDD), and clinical examination (phenotype, Hoehn and Yahr stage, MDS-UPDRS part III, IV, Tinetti test). Follow-up data collection after one month was conducted by telephone interview. Up to three attempts were made to reach the patient. Patients should rate their general condition and were asked, if they feel better, equal or worse compared to their stay at hospital. After one year, follow-up data collection was done through a telephone interview. Again, up to three attempts were made to reach the patient. Within this telephone interview, the SF-12 questionnaire was assessed.

Overall, the assessments and their interpretations were carried out according to the official recommendations (phenotype [3], Hoehn and Yahr [4], MDS-UPDRS part I-IV [5], LEDD [6], Tinetti test [7], NMSQ [8], MoCA [9], HADS-D [10], BDI-II [11], and SF-12 [12]).

The Hoehn and Yahr stage can range from one to five, and higher values indicate higher disease severity. Furthermore, disease severity, motor and non-motor symptoms were assessed using the MDS-UPDRS part I-IV [5]. Each part is based on several items, and each item has five rating options from zero (normal) to four (severe). Part I describes the non-motor experiences of daily living (13 items). Thereby, IA concerns a number of behaviours assessed by the investigator with pertinent information from the patient, and IB is completed by the patient. Part II describes motor experiences of daily living (13 items) and is as well completed by the patient. Part III describes a standardized motor examination (18 items) and is completed by the investigator. Part IV describes motor complications based on both patient-derived information and the clinical observation of the investigator (six items). The MDS-UPDRS total score is the sum score of part I-IV. The phenotype of the patient was determined in accordance to the predominant clinical motor sign. Therefore, the *Schiess* classification [3] was used, and adapted to the MDS-UPDRS. Consequently, patients were classified as akinetic-rigid, tremor-dominant, and not determined. LEDD was calculated and assessed metrically in mg [6]. Additionally, functional motor performance was assessed using the Tinetti test [7]. The score is ranging from 0 to 28 points, and a higher score refers to a better functional motor performance.

Non-motor symptoms of the patients were assessed using the NMSQ [8], MoCA [9], and measures of depressive symptoms (HADS-D [10], BDI-II [11]). Each score is calculated as sum score. Thereby, the score of the NMSQ refers to the number of non-motor symptoms reported by the patient and can range from zero to 30 [8]. Based on the MoCA, cognitive function can be assessed (MoCA $\geq$ 26: normal cognition; MoCA 21–25: mild cognitive impairment; MoCA $<$ 21: dementia) [9]. Depressive symptoms were assessed using the HADS-D [10] and/or the BDI-II [11]. Because of structural changes in our neuropsychology section, initial patients were assessed using the HADS-D, and for subsequent patients the BDI-II was used. Health-related quality of life was assessed using the SF-12, which allows the determination of the physical and mental health score [12,13]. Higher values correspond to a higher physical or mental health-related quality of life.

Finally, collected data were summarized, anonymized and tabulated. Patients age is given in groups to ensure anonymization of the data.

Ethics Statements

The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Ethics Committee of the Jena University Hospital (protocol code 4572-10/15). Informed consent was obtained from all participants prior to participation.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

CRediT Author Statement

Konstantin G. Heimrich: Methodology, Validation, Formal analysis, Investigation, Data curation, Visualization, Writing – original draft, Funding acquisition; **Tino Prell:** Conceptualization, Validation, Data curation, Writing – review & editing, Supervision, Project administration, Funding acquisition.

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