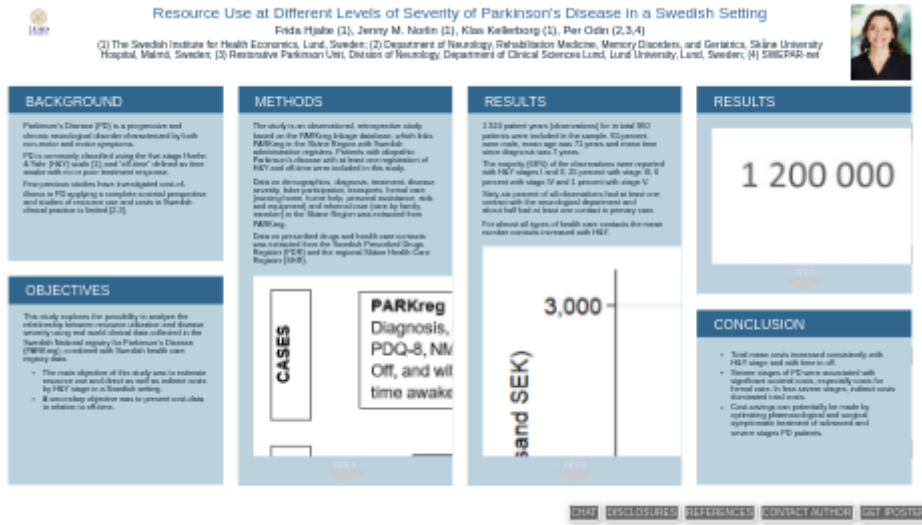


Resource Use at Different Levels of Severity of Parkinson's Disease in a Swedish Setting



Frida Hjalte (1), Jenny M. Norlin (1), Klas Kellerborg (1), Per Odin (2,3,4)

(1) The Swedish Institute for Health Economics, Lund, Sweden; (2) Department of Neurology, Rehabilitation Medicine, Memory Disorders, and Geriatrics, Skåne University Hospital, Malmö, Sweden; (3) Restorative Parkinson Unit, Division of Neurology, Department of Clinical Sciences Lund, Lund University, Lund, Sweden; (4) SWEPAR-net



PRESENTED AT:



BACKGROUND

Parkinson's Disease (PD) is a progressive and chronic neurological disorder characterized by both non-motor and motor symptoms.

PD is commonly classified using the five-stage Hoehn & Yahr (H&Y) scale [1], and "off-time" defined as time awake with no or poor treatment response.

Few previous studies have investigated cost-of-illness in PD applying a complete societal perspective and studies of resource use and costs in Swedish clinical practice is limited [2,3].

OBJECTIVES

This study explores the possibility to analyze the relationship between resource utilization and disease severity using real world clinical data collected in the Swedish National registry for Parkinson's Disease (PARKreg), combined with Swedish health care registry data.

- The main objective of this study was to estimate resource use and direct as well as indirect costs by H&Y stage in a Swedish setting.
- A secondary objective was to present cost-data in relation to off-time.

METHODS

The study is an observational, retrospective study based on the PARKreg linkage database, which links PARKreg in the Skåne Region with Swedish administrative registers. Patients with idiopathic Parkinson's disease with at least one registration of H&Y and off-time were included in this study.

Data on demographics, diagnosis, treatment, disease severity, labor participation, transports, formal care (nursing home, home help, personal assistance, aids and equipment) and informal care (care by family member) in the Skåne Region was extracted from PARKreg.

Data on prescribed drugs and health care contacts was extracted from the Swedish Prescribed Drugs Register (PDR) and the regional Skåne Health Care Register (SHR).

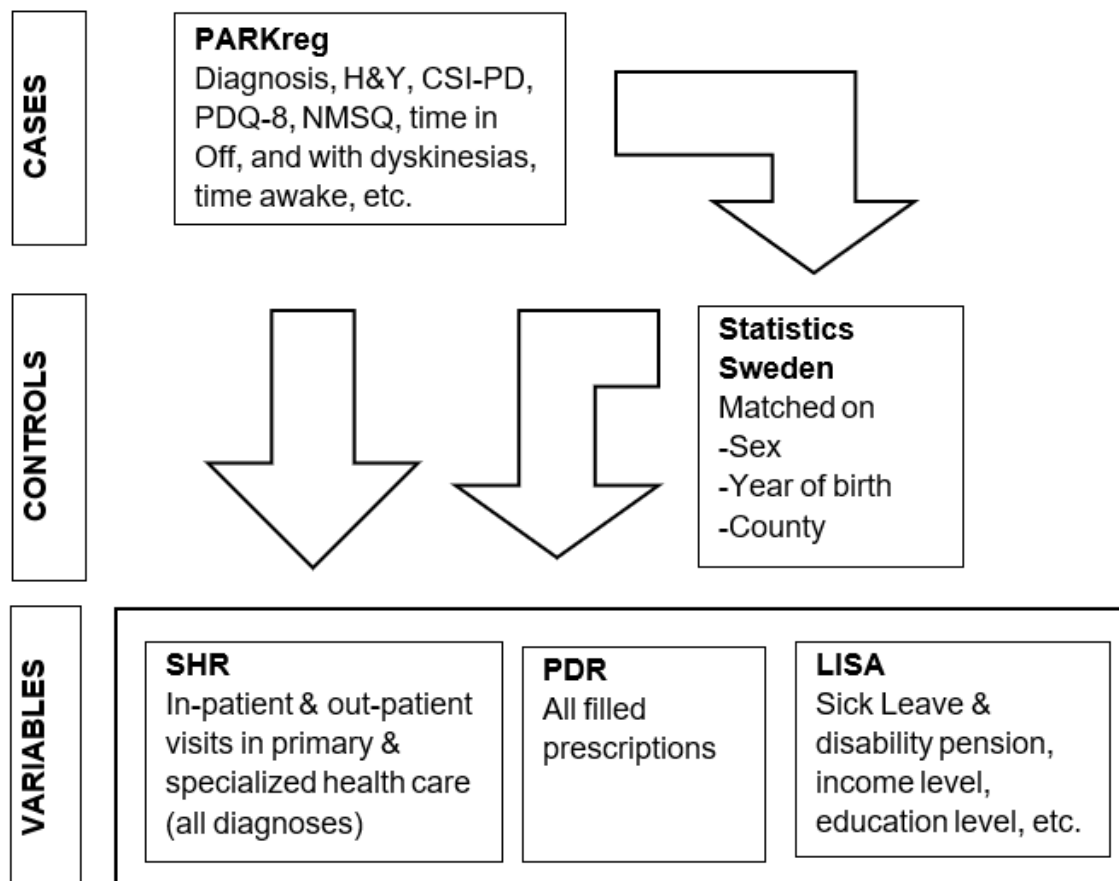


Figure 1. The PARKreg linkage database

Costs according to H&Y stage and off-time were calculated per patient-year.

Costs were divided into direct medical costs including health care contacts and drugs; direct non-medical costs including formal care, informal care and transportations; and indirect costs, i.e. production loss.

Unit costs were derived from regional price lists [4,5]

Productivity loss was estimated with the human capital approach, using age-and sex-specific mean annual income from work [6].

RESULTS

1 324 patient years (observations) for in total 960 patients were included in the sample. 65 percent were male, mean age was 71 years and mean time since diagnosis was 7 years.

The majority (68%) of the observations were reported with H&Y stages I and II, 25 percent with stage III, 6 percent with stage IV and 1 percent with stage V.

Sixty-six percent of all observations had at least one contact with the neurological department and about half had at least one contact in primary care.

For almost all types of health care contacts the mean number contacts increased with H&Y.

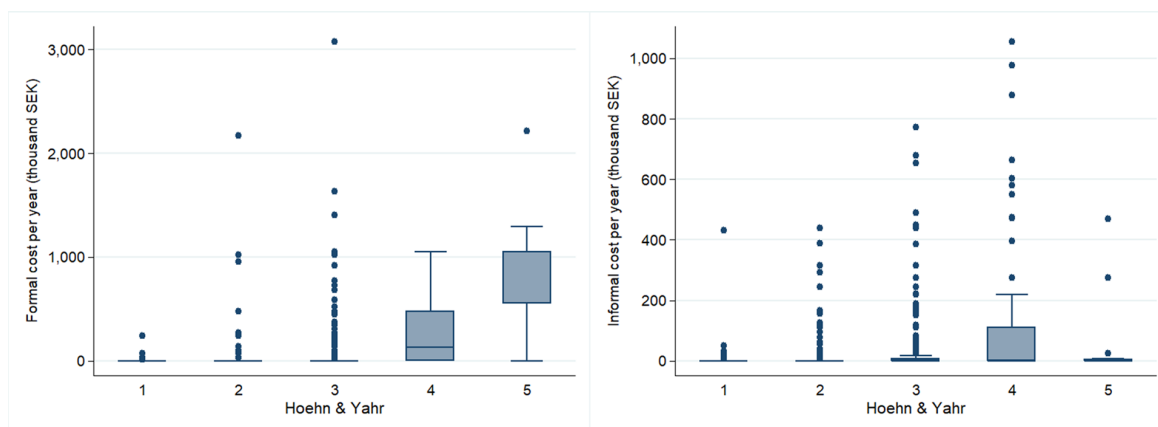


Figure 2. Total mean formal and informal care costs according to H&Y

Use of formal care increased consistently with H&Y stage, both in terms of proportion of observations and in mean number of hours/visits.

Informal care increased with disease severity, but was higher in H&Y IV than in H&Y V.

Less than 40 percent of the observations accounted for patient-years in working age, most of them being in H&Y stage I and II.

RESULTS

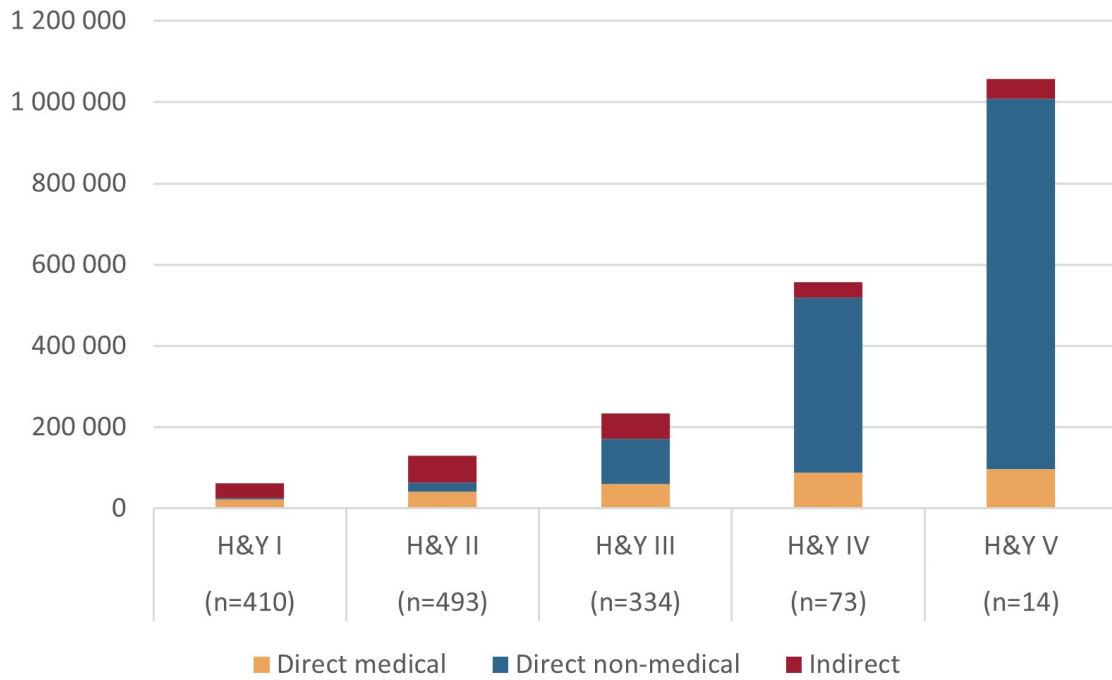


Figure 3. Total mean costs per patient-year according to Hoehn & Yahr stage

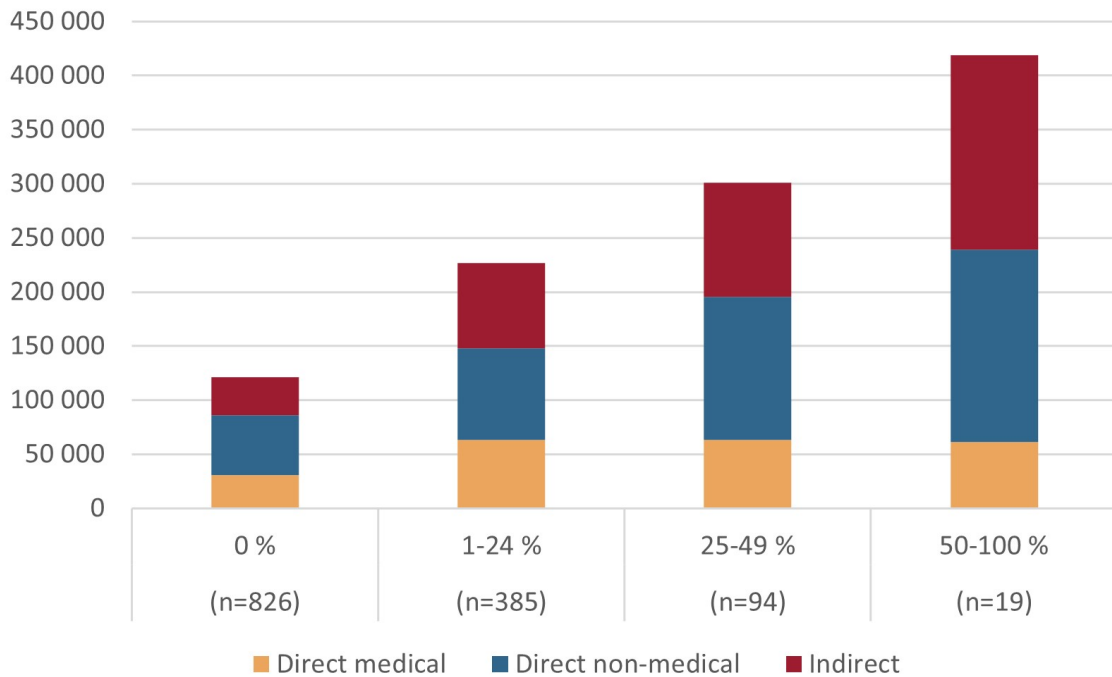


Figure 4. Total mean costs per patient-year according to off-time

Total average cost per patient-year was SEK 168 982, of which indirect costs accounted for 33 percent, formal care for 30 percent, drugs for 13 percent, health care contacts for 12 percent, informal care for 11 percent and transports for less than 1 percent.

CONCLUSION

- Total mean costs increased consistently with H&Y stage and with time in off.
- Severe stages of PD were associated with significant societal costs, especially costs for formal care. In less severe stages, indirect costs dominated total costs.
- Cost-savings can potentially be made by optimizing pharmacological and surgical symptomatic treatment of advanced and severe stages PD patients.

DISCLOSURES

Funding

The research has received financial support from AbbVie, Medtronic and Nordic Infucare (Air Liquide Healthcare). The sponsors had no access to data. The authors had full independence regarding data management, study design, interpretation, and analysis.

Conflict of interest

PO has received honoraria for lectures and expert advice from AbbVie, Bial, Britannia, Global Kinetics, Lobsor, Nordic Infucare, PD Neurotechnology and Zambon.

FH, KK and JMN are employees at the Swedish Institute for Health Economics (IHE), which provides consulting services for a broad range of health care stakeholders, including national authorities, healthcare providers, branch organizations, and manufacturers.

REFERENCES

1. Hoehn, M.M. and M.D. Yahr, Parkinsonism: onset, progression and mortality. *Neurology*, 1967. 17(5): p. 427-42.
2. von Campenhausen, S., et al., Costs of illness and care in Parkinson's disease: an evaluation in six countries. *Eur Neuropsychopharmacol*, 2011. 21(2): p. 180-91.
3. Hagell, P., et al., Resource use and costs in a Swedish cohort of patients with Parkinson's disease. *Mov Disord*, 2002. 17(6): p. 1213-1220.
4. Southern Healthcare Region, Regionala priser och ersättningar för södra sjukvårdsregionen 2019. 2019.
5. Swedish Association of Local Authorities and Regions, Kostnad per brukare - vård och omsorg om äldre och personer md funktionsnedsättning 2014. 2014.
6. Statistiska Centralbyrån. Genomsnittlig månadslön 2019, kronor efter sektor, Yrke (SSYK 2012), kön, ålder och år. [cited 2020-03-09; Available from: http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__AM__AM0110__AM0110A/LonYrkeAlder4A/].