

Estimating Parkinson's disease Prevalence in Ireland

Executive Summary

Background

Neurological disorders are the leading source of disability globally. Parkinson's disease (PD) is the second most common neurodegenerative disease after Alzheimer's disease and is characterised by movement abnormalities, as well as non-motor symptoms such as dementia, depression, visual hallucinations, and autonomic dysfunction.

The prevalence of PD is the total number of people diagnosed and living with the condition in the population. Estimating the prevalence is crucial to identify and understand risk factors of PD, as well as allocating resources appropriately. We used multiple sources of data to create estimates of the current prevalence of PD in the Republic of Ireland.

Methods

Four different sources of data were used to estimate the prevalence of PD in the Republic of Ireland:

1. CSO data (applying PD UK rates)

- The prevalence and incidence rates used to estimate PD prevalence via CSO data were obtained from "The incidence and prevalence of Parkinson's in the UK: Results from the Clinical Practice Research Datalink Reference Report", which was published in 2017.

2. PCRS reimbursement data for anti-Parkinson's medications

- Total number of reimbursements for ATC-N04B across the ‘Long-Term Illness’ and ‘General Medical’ Schemes for 2020.

3. Systematic review of PD prevalence studies conducted in Europe since 2005.

Review of all studies estimating PD prevalence in Europe, published in English, between 2005 to 2020. We have split this estimation into 2 streams of this data, i.e.,

- 1) All studies meeting inclusion criteria (N=23);
- 2) ‘High-quality’ studies (N=9) only.

4. Healthy Ireland (2017) data

We requested anonymised data of the PD rates based on the Healthy Ireland Survey report (2017) and then applied this rate to CSO population data.

Results

The summary data of the prevalence estimates for each of the four data sources are outlined below. In sum, the data indicates the prevalence of PD is between 7,570 and 18,031.

Table 1: Summary of prevalence estimation data

ESTIMATING PARKINSON'S DISEASE PREVALENCE	
1. CSO data X PD UK rates	<u>7,570</u>
2. Primary Care Reimbursement Service data	12,675 (GMS) + 5,356 (LTI) = <u>18,031</u>
3a. Systematic Review data (all)	<u>17,557</u> (CI: 13,166-22,568);
3b. Systematic Review data (high quality)	<u>8,477</u> (CI (5,900-11,510))
4. Healthy Ireland data (2017)	<u>11,350</u>

Conclusion

This study aimed to estimate PD prevalence in the Republic of Ireland, via multiple data sources. Each of the data sources has limitations and potential sources of bias, limiting accuracy. The findings demonstrate that the available data is not sufficient to accurately estimate PD prevalence.

In order to ascertain a more accurate estimate of the prevalence of PD in the Republic of Ireland going forward, potential approaches include:

- 1) Conducting a gold-standard two-phase door-to-door prevalence study of PD
- 2) The development of a PD patient register.