Introduction

Parkinson’s disease (PD) is the second most common neurodegenerative disorder after Alzheimer’s disease and its prevalence will continue to grow as the population ages, doubling its number by 2030. In Spain, the prevalence is estimated at 1.7%, giving a total of 69,571 patients. The economic impact of the disease is enormous. In 2011, the annual European Cost was estimated at €13.9 billion, and it is known to increase with the progression of the disease. Longitudinal costs variations in relation to disease severity or symptoms has not been addressed in the literature, information much needed for estimating how medical spending occurs throughout the natural history of the disease.

Objective

To describe the medical and non-medical direct costs of PD in relation to the total direct cost and its variation with disease severity during 4 years of follow-up.

Methods

A descriptive, observational, longitudinal study in PD patients belonging to the ELEP study (2007-2010).

Data on disease severity and use of resources were collected for three consecutive months, yearly, for 4 years. Direct medical (funded medical equipment, medications and medical assistance) and direct non-medical costs (alternative care, home assistance, non-funded medical equipment and medications) for 4 years depending on severity by Hoehn and Yahr (HY) were described (Figure 1). Costs were estimated by multiplying costs obtained from the database Oblikue (http://www.oblikue.com) and pharmacy costs from the BotPlus Web (https://botplusweb.portafarma.com) by the number of resources used, updated to Spanish €, 2012.

Figure 1. Included data on disease severity and use of resources

Results

- 198 patients were included. Average age: 63±11 years, 50% male, mean PD duration of 8±6 years. Mild (HY-I) and moderate (HY-II) PD varied from 76% and 21% to 64% and 29%, respectively during follow-up (Figure 2).

Figure 2. Number of patients by disease severity during 4 year follow up period

<table>
<thead>
<tr>
<th>HY 0</th>
<th>HY I</th>
<th>HY II</th>
<th>HY III</th>
<th>HY IV</th>
<th>HY V</th>
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<td>75</td>
<td>168</td>
<td>92</td>
<td>106</td>
<td>109</td>
<td>88</td>
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- Total direct cost was higher in severe stages, being in year 4, €1,477.32 HY I (95%: 219.55-2,735.10) and €3,606.66 HY IV (95%: 893.97-6,319.35) compared to year 1, €1,093.32 HY I (95%: 624.99-1,561.65) to €2,656.27 HY IV (95%: 53.14-5,365.68) (Figure 3). Given the small number of subjects in HY IV, stage, they were considered outliers and not included in the analysis.

Figure 3. Total direct cost during 4 year follow up

- Direct medical costs ranged from €886.62 (95%: 475.13-1,298.11) HY I and €2,376.30 HY IV (95%: -53.12-4,805.73) in year 1 to €909.96 HY I (95%: 942.43-1,327.49) and €2,768.49 HY IV (95%: 321.45-5,502.76) at year 4 (Figure 4).

Figure 4. Direct medical costs during 4 year follow up

- Direct non-medical cost variation were determined by PD temporal evolution, increasing between year 1 and 4 within each stage, €723.47 to €4,255.20 HY I and €653.27 to €1,676.35 HY IV (Figure 5).

Figure 5. Direct non medical costs during 4 year follow up

Conclusions

The economic burden of PD rises with duration and severity of the disease, progressively increasing the direct, medical and non-medical costs. Besides to improve patients’ HRQoL, therapies aimed at controlling the symptoms severity will favor a more efficient management of the disease.

References