Original article

Back problems in Parkinson's disease: an underestimated problem

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Abstract

Study design. – Cross-sectional survey.

Objectives. – To estimate the extent of back pain in Parkinson's disease (PD).

Summary of background data. – PD is a common and disabling condition during the course of which back pain may develop. In contrast, the literature on the epidemiology of back pain in PD is poor.

Methods. – Patients with PD, seen consecutively in a neurology clinic over a period of 4 months, were inquired about back pain through a self-questionnaire and compared to an age- and sex-matched control group of chronically ill patients.

Results. – The study involved 104 parkinsonians (mean age: 67.3 years) who had had PD for an average of 11.6 years, and 100 controls (mean age: 65.8 years) who had chronic heart disease or diabetes for an average of 14.2 years. Sixty-two parkinsonians and 23 controls reported back pain. The prevalence was 59.6% in the parkinsonian group and 23.0% in the control group ($P < 0.0001$). Pain severity was evaluated with a visual analogic scale and averaged 54 ± 23 mm in parkinsonians and 41 ± 19 mm in control ($P < 0.0001$).

Conclusions. – Chronic back pain is quite common in PD. It is responsible for a substantial functional impact and needs more attention to reduce disability of such patients.

1. Introduction

Back problems seem to be common in Parkinson's disease (PD). It is difficult, however, to discern whether this is a spurious association or not, chiefly because of the high incidence of both conditions. PD is the most common of the degenerative neurological disorders, affecting about 1.5% of the population over 65 years of age [1], and back problems represent the largest category of musculoskeletal disorders, particularly in older populations [2]. The incidence of back pain increases proportionately with age up to the sixth decade and then declines after 70 years of age [3,4]. The literature contains little information about the relation between back pain and PD. In a retrospective study involving 60 patients with PD, the cumulative prevalence of severe back pain was 68% [5]. The main objective of our cross-sectional study was to determine the incidence of back pain in parkinsonian patients seen at the hospital compared to controls. A further purpose was to evaluate the impact of back problems on parkinsonian patients, in terms of pain.

2. Methods

2.1. Cases

The patients were enrolled in a multidisciplinary neurology/rheumatology practice at the Federation of Neurology, Pitié-Salpêtrière Hospital during 4 months. The overall organization of the study is shown in Fig. 1. The first 104 patients, with idiopathic PD *and without exclusion criteria,* who came in for an assessment of their treatment during this period were recruited into the study. We compared those patients with a control survey age-matched chronically ill patient who came to the same hospital for chronic heart disease or diabetes con-
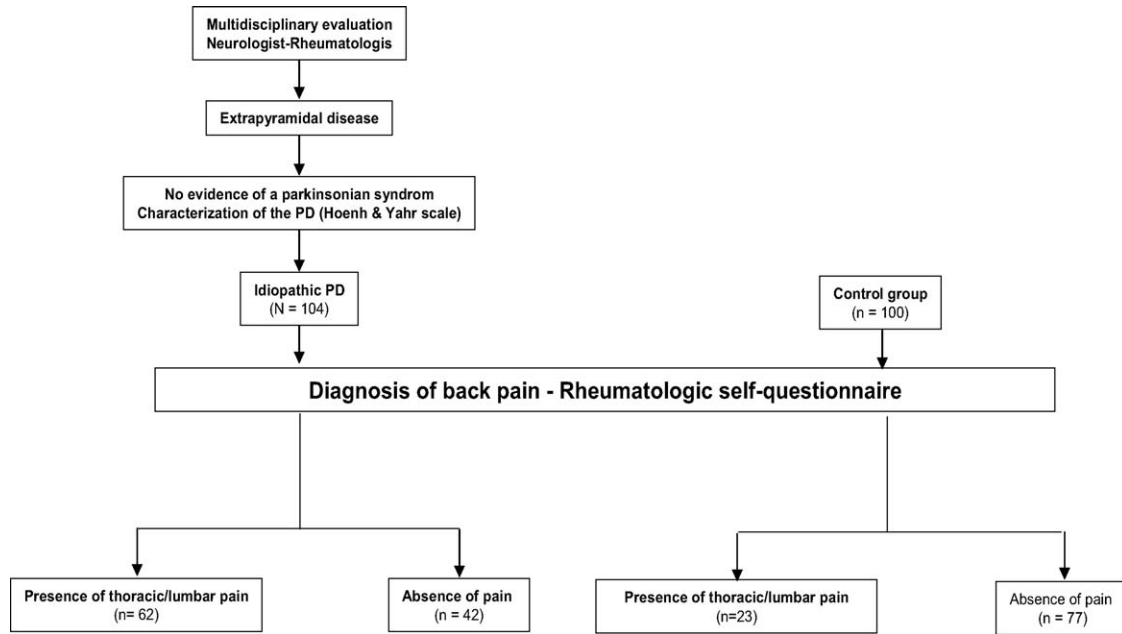
Fig. 1. Design of the study.

sultation. The diagnosis of PD was confirmed by a neurologist specializing in that disease (A.M.B.). The idiopathic nature of the PD was based on 1) the absence of any detectable cause for parkinsonian syndrome, specifically no history of taking neuroleptics, 2) the very slowly progressive onset and worsening of symptoms, 3) the asymmetric nature of the dysfunction, 4) the absence of non-parkinsonian neurological abnormalities, and 5) responsiveness to levodopa. Patients with secondary Parkinson's were excluded to ensure the homogeneity of the study population. *Patients who could not write or who had very limited higher function were excluded from the study.* The clinical symptoms of the disease (akinesia, rigidity, and tremor) and the stage of disability (Hoehn and Yahr scale) were recorded for all patients.

2.2. Controls

Age- and sex-matched chronically ill controls were identified in two other departments of the Pitié-Salpêtrière Hospital: 50 were out patients from the Department of Cardiology, and 50 from the Department of Diabetology. Subjects knowing to have PD were excluded.

2.3. Data

2.3.1. Diagnosis of back pain

The rheumatologic evaluation was conducted by an experienced rheumatologist (F.E.). Patients with idiopathic PD and selected controls were asked to complete a 10-min standardized self-questionnaire. The first question asked about thoracic or lumbar back pain at the time of the visit. If the response was positive, the subject was asked to specify 1) the location of the pain, by marking an "x" on a diagram of the spine (the cervical spine was deliberately excluded from the study because scapu-

lo-humeral muscle pain, common in PD, might mimic cervical spine pain); 2) how long the pain had been occurring (acute, ≤ 4 weeks; subacute, > 4 weeks and ≤ 12 weeks; chronic, > 12 weeks); 3) the frequency (constant, several days per month, several hours per month); 4) when the pain occurred (mechanical or inflammatory); 5) its severity, as measured by a visual analog scale (VAS 0–100 mm); and 6) situations that trigger and relieve the pain, chosen from a list of 15 items corresponding to movements of daily life.

2.3.2. Statistical analysis

Statistical analysis was performed with STATA™ 5.0 software (Stata Corp., College Station, TX, USA). The different variables were analyzed in parkinsonian patients with and without back pain. For the numerical variables, the comparison was based on 95% confidence intervals; for categorical variables, a chi-square test was used. Multivariate analysis used logistic regression for the factors associated with the presence of back pain and linear regression for the factors associated with the severity of pain on the VAS; for each regression, both full and stepwise models have been developed.

3. Results

The study included 104 idiopathic PD, 56 men and 48 women, with an average age of 67.3 ± 9.2 years (range, 45–84) (Table 1). PD was present for an average of 11 ± 6 years (range, 1–36). We included 100 controls, age- and sex-matched, mean age: 65.8 ± 10.5 (range, 42–89) (Table 1). Chronic heart disease or diabetes was present for an average of 14 ± 12 years (range, 1–50). Of these patients, 62 reported thoracic or lumbar pain, in the parkinsonian group, for a point prevalence of 59.6%, which was significantly higher than that observed in controls patients: twenty-three patients, for a point