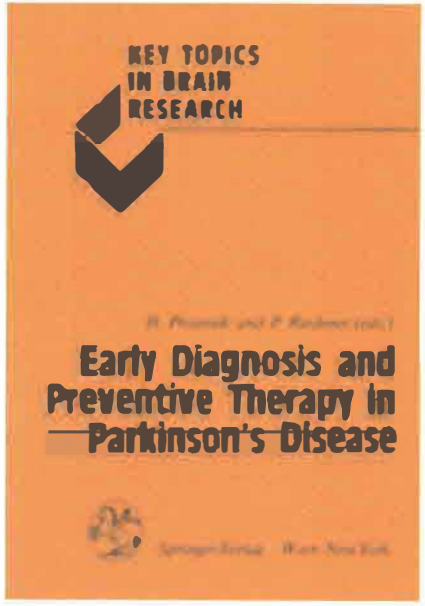

Early Diagnosis and Preventive Therapy in Parkinson's Disease

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Inhaltsverzeichnis (43 Kapitel)

The premorbid personality of patients with Parkinson's disease

An early sign of their disease?

W. Poewe, F. Gerstenbrand, E. Karamat, and B. Schmidhuber-Eiler

Department of Neurology, University of Innsbruck, Austria

Summary

A total of 85 patients with idiopathic Parkinson's disease have been tested for characteristic premorbid personality features. In three different studies with varying test methods patients consistently appeared more introverted, depressed, rigid and inflexible than age-matched controls. It is suggested that together with impairment of conceptual shift and mental slowing found in early stages of Parkinson's disease these premorbid personality traits might represent early signs of brain dopaminergic dysfunction.

Introduction

Undeterred by the lack of a reliable method permitting the retrospective assessment of permorbid personality traits neurologists and psychiatrists have since the beginning of this century been impressed with certain peculiar features in the personality of patients with Parkinson's disease being present long before the onset of their illness (Todes and Lees, 1985, for review). With remarkable consistence the patients' previous personality is reported to be dominated by traits of moral rigidity and inflexibility combined with a tendency towards depression and introversion. Many of the earlier authors have taken a psychodynamic view of their findings and have postulated a causal role of lifelong suppression of aggressive tendencies and emotional deprivation for the eventual development of Parkinson's disease (Cohen-Booth, 1935; Sands, 1942; Mitscherlich, 1960) and this view has more recently been emphasized by Todes

(1984). More in line with our current understanding of this illness others have argued that a characteristic premorbid parkinsonian personality might be an early clinical manifestation of the underlying dysfunction of brain dopaminergic systems (Poewe et al., 1983; Ward et al., 1983) and that it might be somehow related to the phenomenon of bradyphrenia later observed in patients (Rogers et al., 1987).

In this paper a summary of the authors' results in studies of premorbid characteristics in the personality of Parkinson patients will be given and discussed with respect to their possible significance as an early disease sign.

Patients and methods

A total of 85 patients with idiopathic Parkinson's disease have been studied in three separate investigations of premorbid personality traits. All were receiving chronic L-dopa treatment and the first series comprised 14 males and 14 females (mean age 67 years; mean duration of disease 9 years) who where tested by the Giessen test (GT) administered in a retrospective fashion to the patients and a close relative or companion (Poewe et al., 1983). The GT was selected as a personality inventory for this investigation because it provides for both a self and outside assessment of the patients personality features so that the bias of retrospective judgement could be kept as low as possible. This was supplemented by a second set of studies in 12 male and 12 female patients (mean age 65 years; mean duration of disease 7,5 years) where in addition to the Giessen test the Freiburg Personality inventory (FPI) was administered to assess both the patients' present personality status and—in a modified version—retrospectively also their previous personality. In both series the results could be compared to age specific standard values from control populations available for both the GT and the FPI and statistical significance was calculated by means of Student's t-test.

In our most recent ongoing study 38 patients (22 males, 16 females; mean age 61,4 years; mean duration of disease 5,2 years) and 17 age-matched healthy controls (11 males, 6 females; mean age 59 years) have so far been investigated. Tests included a mini mental state (MMS) examination and the WAIS to exclude demented patients or controls, the geriatric depression scale (GDS) and Cattell's 16 PF personality inventory. Statistical differences of scores between patients and controls were calculated using a one-way analysis of variance.

To assess premorbid character and behavioural features patients and controls underwent a one-hour semi-standardized interview by an experienced psychologist (E.K.) designed to cover as extensively as possible biographical data, premorbid habits, hobbies, family life, professional career and social activities. These interviews were repeated with a close relative or companion of the patient or control person (mostly spouses) to obtain their

version of the proband's premorbid biography and character. The interviews were stenographically recorded and subsequently evaluated independently by the interviewer and a second psychologist blind to the diagnosis and unaware of the background of the study. For evaluation of the interview material seven "bipolar" scales were defined ("introverted/depressed vs. outgoing/happy"; "workoholic vs. easy going"; "pedantic vs. generous"; "rigid vs. flexible"; "loner vs. sociable"; "smoker vs. non-smoker"; "teetotaller vs. keen on alcohol") and ratings were done by scoring one on either pole if the respective traits were prominent in the material or zero when there was no obvious trend into either direction.

Results

The results of our first study have been previously published (Poewe et al., 1983). The most striking trends towards a deviation from score values of a control population were found in scales 3 ("control") and 4 ("basic mood") of the GT. Parkinsonians appeared to have been overcontrolled in their premorbid personalities, which in this test is defined by features as "talented in dealing with money", "overorderly", "overambitious", "timid", "overly self-reflective", "swallowing anger", "dependent". These trends were evident both on self- and foreign-assessment.

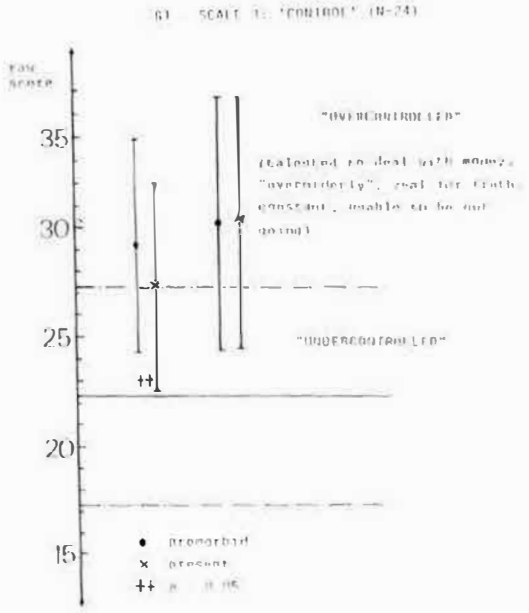

Fig. 1

Table 1. Percent of patients and controls scoring as normal, mildly or severly depressed on the GDS

Score	Controls (N = 17)	Patients (N = 33)
≤ 10 (normal)	88.2% (N = 15)	31.6% (N = 12)
11–15 (mildly depressed)	5.9% (N = 1)	31.6% (N = 12)
≥ 16 (severely depressed)	5.9% (N = 1)	36.8% (N = 14)

Table 2. Results of assessment of present personality of patients and controls by Cattell's 16 PF

Factor	Mean scores (± std. deviation)	
	Patients (N = 33)	Controls (N = 17)
N	5.4 (± 1.9)[a]	3.9 (± 1.6)
O	6.5 (± 1.6)[a]	4.9 (± 2.7)
Q4	5.1 (± 2.0)[b]	4.1 (± 1.5)
QII	5.1 (± 1.6)[a]	6.3 (± 2.3)

[a] $p \leq 0.01$, [b] $p = 0.015$, one way analysis of variance

Factor N: Forthright, natural, genuine (low scores) vs. Shrewd, calculating, socially alert (high scores)
Factor O: Unperturbed, confident, secure (low scores) vs. Apprehensive, self reproaching, worrying (high scores)
Factor Q4: Relaxed, tranquil, unfrustrated (low scores) vs. Tense, driven, restless, overwrought (high scores)
Factor QII: Low adjustment, skeptical, cautious (low scores) vs. high adjustment, confident, low anxiety (high scores)

Table 3. Evaluation of semi-standarized interviews into premorbid behaviour and personality (percent of probands scoring on item)

	introverted depressed	workoholic	pedantic	rigid	loner	non-smoker	"teeto-taller"
Patients (N = 33)	49% (48/50)	71.5% (50/85)	75% (74/75)	50% (42/58)	47.5% (45/50)	66.5% (61/72)	28% (27/29)
Controls (N = 17)	17.5% (11/24)	55.5% (41/70)	29.5% (24/35)	14.5% (12/17)	17,5% (11/24)	49,5% (41/58)	29.5% (24/35)

Percentages given as means of two ratings with individual ratings in brackets (for explanation see text)

In the second study with the GT very similar results were obtained and the mean scores and their standard deviations are depicted in Fig. 1 for scale 3 of this test. In contrast to our first series patients and their relatives/companions this time went through a retrospective as well as the original version of the GT. While there was again a marked deviation from normal controls towards a rigid and overcontrolled type of personality in all modes of assessment there was a significant difference in the patients' self-assessment of their previous and present personality in that they appeared less rigid in their present as compared to their premorbid state (see Fig. 1). In the FPI patients' scores showed overall less differences from the standard scores of a control population but there were remarkable trends towards a difference in scales 3 (depression), 4 (arousal), 7 (dominance) and 8 (inhibition), where Parkinsonians appeared more depressed, tranquil, less dominant and more tense both in their actual and previous personalities.

In the third set of studies there were no statistically significant differences between patients and controls in the WAIS or MMS scores, but patients were significantly more depressed on the GDS (Table 1). Statistically significant differences between patients and normal controls were also evident in several of the primary and second-order personality factors of Cattell's 16 PF and they are summarized in Table 2. Overall patients appeared more socially alert, apprehensive, worrying, tense, anxious and introverted.

Evaluation of the interview material relating to the patients' and healthy controls' premorbid habits and character yielded the results summarized in Table 3. Both raters found a considerably greater percentage of patients to score on the items of "introverted/depressed", "workoholic", "pedantic", "rigid", "loner" and "non-smoker".

Discussion

In three different studies with several methodological approaches a total of 85 patients with idiopathic Parkinson's disease have shown a consistent premorbid personality pattern characterized by features of depression, introversion, rigidity and inflexibility. There is a remarkable accordance between these findings and those reported in the literature since the beginning of the century (Todes and Lees, 1985). Similar observations have also been made in a recent twin study of Parkinson's disease where in a mutual premorbid personality assessment between twins the parkinsonians generally appeared less outgoing and more introverted and depressed than their healthy

co-twins (Ward et al., 1983). This consistence among the findings of a number of reports lends support to their possible significance despite the reservations one must have towards retrospective assessment of personality features. There is also evidence that the well documented tendency of Parkinsonians to have been premorbid non-smokers does not reflect an unknown protective factor against the disease associated with cigarette smoking but may rather be an expression of the patients' premorbid character (Poewe et al., 1983; Golbe et al., 1986).

It seems possible that the reported peculiaritis in the premorbid character of patients are linked to certain psychological abnormalities found in early and untreated stages of the disease. These include difficulties of conceptual shift as expressed in a significantly greater tendency towards perseverative errors in the Wisconsin Card Sorting Test when compared to age-matched controls (Lees and Smith, 1983) as well as slowing of mental processing time similar to that of depressives in a digit symbol substitution task (Rogers et al., 1987). Such psychometric findings have been linked to the degeneration of dopaminergic meso-cortico-limbic projections in Parkinson's disease (Agid et al., 1984), so that a speculative interpretation of premorbid personality changes in this illness could view them as an early manifestation of dopaminergic dysfunction.

Further studies of the premorbid personality changes in Parkinson's disease are clearly needed and should include control groups of other chronically disabling diseases to test the specifity of the postulated parkinsonian personality. It might also be worthwhile to examine introverted and withdrawn depressive patients by positron emission tomography to clarify whether such psychic states are associated with functional alterations of brain dopaminergic systems.

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Correspondence: Dr. W. Poewe, Department of Neurology, University of Innsbruck, Anichstrasse 35, A-6020 Innsbruck, Austria.