

Scientific evidence and expert clinical opinion for medical intervention in early and late disease

Carl E Clarke

Introduction

Pharmacotherapy remains at the heart of the management of Parkinson's disease. Over the last few decades, much has been learnt about the newer anti-parkinsonian drugs during their development programmes. However, such information usually relates to placebo-controlled trials, with few data on comparisons with other active agents. Although clinicians feel that they can estimate which drug is better without such comparisons, this is based on experience not head-to-head class effect trials. Many more phase IV post-marketing studies are required to establish the optimum therapeutic regimen in Parkinson's disease.

In the meantime, recommendations for individual patients must be based on the best evidence available. Clinical evidence is usually classified using the hierarchies detailed in Tables 4.1 and 4.2. Wherever possible, this chapter documents the type of evidence on which statements are made so that the reader can gauge the strength of the recommendations being made. Some of these will necessarily be based on expert opinion only in view of the current lack of knowledge in certain areas.

Table 4.1 Categories of evidence for clinical decision-making

Ia	Evidence from systematic review of RCTs
Ib	Evidence from one or more RCT
IIa	Evidence from one or more controlled but non-randomised study
IIb	Evidence from one or more quasi-experimental study
III	Evidence from descriptive study(s) such as case-control study
IV	Evidence from expert committee reports or opinions or clinical experience of respected authorities

RCTs, randomised controlled trials.

Early Parkinson's disease

Levodopa

The dramatic therapeutic effect of levodopa in Parkinson's disease in the early 1970s and the desperate need of patients for such effective therapy meant that randomised

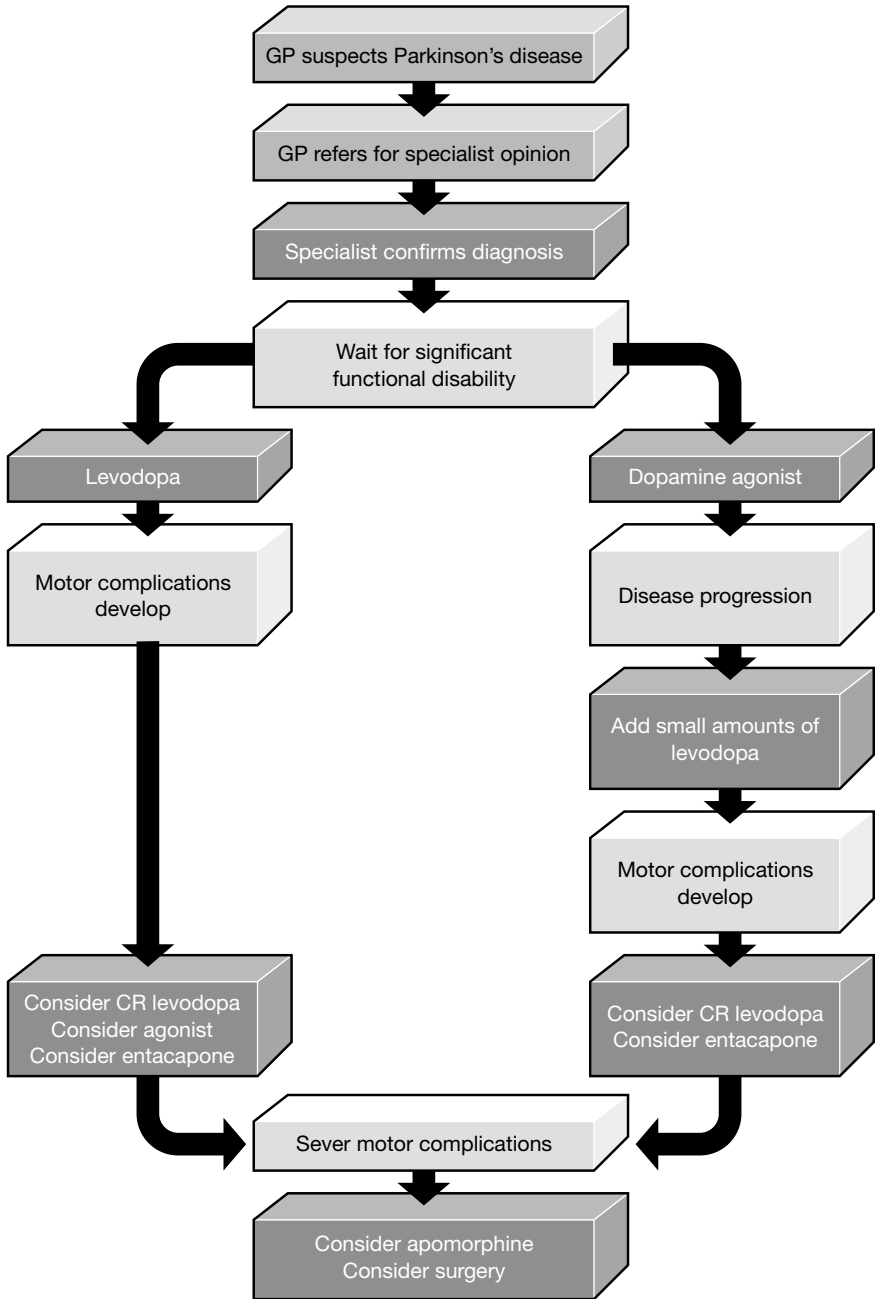


Figure 4.4 Treatment algorithm for Parkinson's disease based on guidelines prepared by a panel of UK-based opinion leaders. (Adapted from Bhatia *et al.* 1998.)

- Parkinson's Disease Society (1993). *Parkinson's disease and the nurse*. London: Parkinson's Disease Society 1999. Calne DB. Treatment of Parkinson's disease. *New England Journal of Medicine* **329**, 1021–1027
- Peto V, Jenkinson C, Fitzpatrick R, Greenhall R (1995). The development and validation of a short measure of functioning and well-being for individuals with Parkinson's disease. *Quality Life Research* **4**, 241–248.
- Peto V, Jenkinson C, Fitzpatrick R (2001). Determining minimally important differences for the PDQ-39 Parkinson's disease questionnaire. *Age and Ageing* **30**, 299–302
- Reynolds H, Wilson-Barnett, Richardson G (2000). Evaluation of the role of the Parkinson's disease nurse specialist. *Nursing Studies* **37**, 337–349
- Ridsdale L (1995). Community care for patients with idiopathic Parkinson's disease. *British Journal of General Practitioners* **394**, 226–227
- School of Nursing and Midwifery (2000). *Knowledge Based Practice for People with Parkinson's Disease and Their Carers*. Sheffield: School of Nursing and Midwifery, Northern General Hospital
- Schrag A, Ben-Shlomo Y, Quinn NP (2000). Cross sectional prevalence survey of idiopathic Parkinson's disease and Parkinsonism in London. *British Medical Journal* **321**, 21–22
- Thompson SG & Barber A (2000). How should cost data in pragmatic randomised trials be analysed? *British Medical Journal* **320**, 1197–1200
- Wade DT (1994). *Measurement in Neurological Rehabilitation*. Oxford: Oxford University Press
- Williams A (1995). *The Measurement and Validation of Health: A chronicle*. York: Centre for Health Economics, Discussion paper 136, University of York
- Wilson-Barnett J & Beech S (1994). Evaluating the clinical nurse specialist. A review. *International Journal of Nursing Studies* **31**, 561–571

Appendix

An area-under-the-curve method was used to combine global subjective well-being responses over the 2-year study period, e.g. patients at intersection (0,0) at baseline move 1 unit to the right on the x axis in year 1 of the study. Movement on the y axis is determined by the global subjective response: 'much better' stays on the axis (1,0), 'better' rises by 1 unit (1,1), 'same' rises by 2 units, 'worse' rises by 3 units and 'much worse' rises by 4 units. During year 2 of the study, patients move another unit along the x axis, with movement on the y axis once again dependent on global subjective response in the same manner as year 1. Patients who were much better in each successive year do not rise up the y axis but move from (0,0) to (2,0) on the axis; at the end of the intervention they have an area under the curve of 0 units. Patients who were 'much worse' in each year move from (0,0) to (2,8) and have an area under the curve of 8 units at the end of the intervention. Patients who get much better in year 1 but stay the same in year 2 of the study arrive at the same point (2,2) as someone staying the same and then getting much better, but the former patient has a lower score of 1 compared with the latter who has a score of 4 which reflects the earlier benefit.