CAT 1. Risk factors for falling in Parkinson’s

Appraised by Kevin Galbraith, September 2016
Update due 2019

Clinical question
Among people with Parkinson’s, what are the risk factors for falling?

Background
Among people with Parkinson’s, falls are both frequent and recurrent, with 45–68% falling annually, and two-thirds of these falling recurrently.1 The cost to the health service resulting from falls is considerable – it is more than tripled when a person with Parkinson’s sustains a broken hip.2 Clinicians need to efficiently screen patients for fall risk, to decide which of them merit more extensive assessment, and measures to prevent future falls. This CAT sought to identify the risk factors for falling among people with Parkinson’s.

Clinical bottom line
A consensus-based set of recommendations for assessment and management of falls in people with Parkinson’s has provided a comprehensive, useful list of risk factors for falls, generated on the basis of a sensitive, systematic literature search. It is likely that most of the important risk factors were included. The study is limited however, by a lack of systematic data extraction based on quality, a lack of quantification of risk, and potential subject bias. Further expert opinion should be sought regarding the utility of the recommendations in practice. Up-to-date systematic review level evidence is also required.

Search terms
(Parkinson Disease/ OR Parkinson$) AND (Accidental falls/ OR fall$) AND (Risk Factors/ OR risk factors).

Search strategy
Ovid Medline, and adapted for Cochrane Library, and CINAHL. All searches 2010 to August 2016, English language.

Evidence
From 148 articles, a relevant systematic review was sought, as this would likely represent the best available evidence. One such systematic review was found, but it focused specifically upon risk factors for postural instability.3 A more relevant study was located, providing consensus-based recommendations for assessing and managing falls in people with Parkinson’s.4 As the study was based on a systematic literature search, and sought a comprehensive multidisciplinary consensus, it was chosen for critical appraisal.

Summary

A systematic literature search was conducted, to identify risk factors for falling – both generic (age-related) and Parkinson’s-specific. Recommendations were drafted around 31 risk factors, and presented via a web-based tool to a group of 27 professionals from multiple disciplines, recruited from National Parkinson Foundation (NPF) centres. The recommendations were evaluated by the multidisciplinary group and comments submitted. Revised recommendations were reviewed by a 12-strong multidisciplinary Falls Task Group, selected for their expertise in balance, gait and falls in Parkinson’s. For each item, agreement between at least two-thirds of these experts was considered as consensus. Therapeutic interventions were scored on a 6–point scale, ranging from 0 (totally unimportant) to 5 (extremely important). Interventions with a mean evaluation score of >2 were included as final recommendations. It was recommended that all risk factors – except for visual impairment – should be managed by a multidisciplinary team. Generic risk factors should be managed by the general practitioner, geriatrician, neurologist and Parkinson’s specialist. Parkinson’s–specific risk factors should be managed by the neurologist, Parkinson’s specialist and physiotherapist.

The generic risk factors were increasing age, female gender, sedative medications, polypharmacy, postural hypotension, cardiac arrhythmia, arthrosis, incorrect use of an assistive device, anxiety, weakness due to inactivity, visual and ocular motor impairment, daily use of alcohol, environmental hazards, other comorbidities, depression and osteoporosis.

Parkinson’s–specific risk factors were fall history, greater disease severity, Parkinson’s medications, slow mobility, shuffling and small scaled gait, freezing of gait and festination, stooped posture (forward falls), postural instability, transfers, cognitive impairment, axial rigidity, dyskinesias, long-term adverse effects of DBS of the subthalamic nuclei and GPi, dual tasking and urinary incontinence.

It was recommended that clinicians assessing patients for falls first identify the specific fall type, and tailor screening and treatment accordingly. Routine evaluation of all risk factors was recommended only for high–risk patients without prior falls, or for patients with unexplained falls.

The following should be noted:

• This is not a systematic review. No attempt was made to select studies based on quality. This could mean that poor studies are given inappropriate consideration.

• A very sensitive search was conducted systematically however, using a wide and appropriate array of bibliographic databases. It is likely that all the important risk factors were included.

• The recommended approach of first identifying the specific fall type arguably lacks practical utility, as this could itself require lengthy assessment, possibly with specialised equipment that may not be widely available.

• The generation of recommendations depended upon the opinion of panelists. There is therefore susceptibility to subject bias.

• The proportion of panelists from each discipline was not controlled. This may also have led to bias in recommendations, through over or under-representation of a particular specialty's perspective.

• No odds ratios or relative risks were given for risk factors. Their relative importance cannot therefore be ascertained.

• Despite these limitations, the systematic and sensitive literature search, and the breadth of multidisciplinary opinion sought, contribute to a useful, comprehensive list of risk factors for consideration in the assessment of falls.

References


This Critically Appraised Topic, the others in the series, and the related clinical summary are the work of the Evidence-Based Practice Theme Working Group:
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