

A Scoping Review on the Diagnosis and Management of Vascular Parkinsonism

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BACKGROUND

- Vascular parkinsonism (VP) is a form of secondary parkinsonism resulting from cerebrovascular disease.
- This relatively uncommon presentation of parkinsonism in primary care practice often leads to missed or delayed diagnosis.

OBJECTIVE

To identify the diagnostic criteria and management approaches for VP as reported in literature.

METHODS

- Scoping review
- Search in Ovid MEDLINE, EMBASE, CINAHL, Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, Web of Science up to September 2, 2025.
- Title-abstract and full-text screening by two independent reviewers
- Data extraction by one reviewer, verified by another reviewer.
- Inclusion: English; Diagnostic criteria; management

RESULTS

We screened 2861 citations. 57 articles specified 19 different diagnostic criteria; 21 articles specified management approaches.

Of the 20 diagnostic criteria, the most commonly cited was Zijlmans criteria (2004) which included parkinsonism, cerebrovascular disease, and a relationship between the two. The latest proposed criteria were by Rektor (2018) which specified categories of findings (i.e., obligatory findings, supportive findings, non-supportive findings) and three types of VP (i.e., acute/subacute post-stroke VP, insidious VP, and mixed neurodegenerative parkinsonism and cerebrovascular disease).

The management approaches had the following themes: (1) Imaging may be helpful but not specific; (2) Levodopa may not be helpful; (3) Control of cardiovascular risk factors and co-morbidities is recommended; (4) Multidisciplinary management is suggested.

Zijlmans' Criteria (2004; Link)

1. Parkinsonism
 - Bradykinesia
 - At least one of the following: rest tremor, muscular rigidity, postural instability
 2. Cerebrovascular disease with evidence from brain imaging (CT or MRI) or focal signs and symptoms consistent with stroke
 3. Relationship between above: acute or delayed progressive onset; or insidious onset
- Exclusion criteria: head injury, encephalitis, neuroleptic treatment at onset of symptoms, cerebral tumor, hydrocephalus (on CT or MRI), other explanation for parkinsonism



Rektor's Diagnostic Approach (2018; Link)



	Acute or Subacute Post-stroke VP	Insidious VP	Mixed Neurodegenerative Parkinsonism & CVD
Obligatory	• Acute/subacute parkinsonism (typically asymmetric) • Imaging: stroke in the nigrostriatal pathway	• Progressive (insidious or stepwise) • Mixed shuffling or ataxic gait • Postural instability • Imaging evidence of CV small vessel disease	• Meet criteria for Probable neurodegenerative parkinsonism (PD, DLB, PSP, MSA, CBS, non-tau FTD parkinsonism) • Imaging evidence of CVD
Supportive	• Levodopa responsiveness • Imaging consistent with stroke (see article)	• Freezing gait • Pyramidal signs • Cognitive decline • Urinary urgency or incontinence • Pseudobulbar symptoms • No significant levodopa responsiveness	• Specific imaging findings (see article)

CV, cerebrovascular; +/-, more likely present; -/+, more likely absent

CONCLUSION

Awareness of VP and its diagnostic criteria and management approaches will be helpful in primary care.