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THE IMPACT OF RECURRENT STROKE ON PATIENT OUTCOMES AND DISABILITY.

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Abstract: Recurrent strokes are associated with higher mortality, greater disability, and poorer functional outcomes compared to first-ever strokes. The major predictors of recurrence include uncontrolled arterial hypertension, atrial fibrillation, diabetes mellitus, smoking, dyslipidemia, and inadequate secondary prevention. Recurrences worsen cognitive function, reduce the effectiveness of rehabilitation, and increase the economic burden of the disease. Timely optimization of modifiable risk factors and strict secondary prevention reduce the risk of recurrence and related disability.

Keywords: ischemic stroke; recurrent stroke; stroke recurrence; disability; functional outcome; risk factors; secondary prevention; neurorehabilitation; cognitive impairment.

Introduction

Ischemic stroke remains one of the leading causes of mortality and long-term disability worldwide, creating a significant medical, social, and economic burden on healthcare systems. Despite advances in early diagnostics, the introduction of thrombolytic therapy, and improvements in neurorehabilitation and preventive strategies, the rate of recurrent stroke remains high. According to epidemiological studies, the risk of recurrent ischemic stroke during the first year after the initial episode reaches 8–12%, and within the subsequent five years increases to 20% or more, which is associated both with the progression of vascular pathology and with insufficient effectiveness of secondary prevention measures.

Recurrent strokes are typically characterized by more severe clinical manifestations, reduced recovery potential, and a significantly more pronounced neurological deficit. They lead to persistent motor, cognitive, and speech impairments, substantially diminishing the quality of life of patients and their families. Moreover, stroke recurrence is a key contributor to the progression of disability, increasing the need for prolonged rehabilitation, social support, and caregiving, thereby imposing additional economic costs on society.

Of particular importance is the study of factors influencing outcomes of recurrent strokes, as well as the assessment of disability severity and the effectiveness of therapeutic and rehabilitation interventions. The analysis of these indicators is essential for optimizing preventive strategies, developing individualized follow-up programs, and improving the efficacy of rehabilitation in patients with recurrent stroke.

Thus, the study of the impact of recurrent ischemic strokes on functional outcomes and disability levels is a highly relevant issue in modern clinical neurology and has significant practical value for improving medical care and reducing the overall burden of the disease.

Recurrence Rate and Time Frame.

The risk of recurrence is highest in the early period after the initial stroke (within the first months to one year) but remains elevated in the long term. The one-year recurrence rate in different cohorts generally ranges from 8–12%, and the five-year rate reaches 15–20%, depending on population characteristics and the quality of secondary prevention.

The subtype of stroke influences recurrence risk: cardioembolic strokes are often associated with a higher likelihood of recurrence and mortality compared to atherothrombotic and strokes of undetermined etiology.

Risk Factors for Stroke Recurrence

The most consistently reported risk factors include uncontrolled arterial hypertension, atrial fibrillation (AF), diabetes mellitus, atherosclerotic disease of major vessels, smoking, obesity/physical inactivity, and non-adherence to antiplatelet or anticoagulant therapy. Behavioral and social factors (low adherence to treatment, lack of rehabilitation, poor diet, sedentary lifestyle) also increase the risk of recurrence.

Impact of Recurrent Strokes on Outcomes and Disability

1. Mortality Recurrent strokes are associated with higher mortality compared to first-ever strokes, as shown in both historical and contemporary cohort studies.

2. Functional Outcomes (mRS, FIM) Recurrent strokes more frequently lead to severe disability (higher mRS scores) and increase the proportion of patients with significant impairment. Some studies indicate that survivors of recurrent strokes demonstrate lower potential for functional recovery, although clinical improvement is possible with adequate rehabilitation. Differences in the extent of functional improvement between groups depend on the baseline severity of deficits, timing of rehabilitation initiation, and availability of caregivers/support.

3. Cognitive and Psychological Consequences Post-stroke cognitive dysfunction increases the risk of recurrence, while recurrent strokes exacerbate cognitive impairment and the risk of dementia. This creates a vicious cycle: cognitive deficits reduce treatment adherence and self-management of risk factors.

4. Socioeconomic Consequences Recurrences prolong hospital stays, increase the need for long-term care, and raise overall healthcare costs; quality of life for patients and their families is significantly reduced. Contemporary cost analyses often correlate expenses with mRS scores.

Rehabilitation after Recurrent Stroke

Patients experiencing recurrence benefit from intensive multidisciplinary rehabilitation; however, their functional gains are often lower compared to patients after a first-ever stroke. Nevertheless, studies emphasize that refusal of rehabilitation results in the worst outcomes, so recurrent stroke should not be a reason to withhold recovery interventions.

Preventive Strategies and Their Effectiveness

Effective secondary prevention (blood pressure control, anticoagulation in AF, antiplatelet therapy in non-cardioembolic strokes, statins, lifestyle modification) reduces the risk of recurrence and indirectly decreases subsequent disability. Emphasis should be placed on treatment adherence and access to preventive care services.

Knowledge Gaps and Directions for Future Research

There is a lack of contemporary prospective data in low- and middle-income countries on how socioeconomic factors influence stroke recurrence and disability.

More comparative studies of rehabilitation protocols specifically for patients with recurrent strokes are needed (including intensity, timing, and composition of multidisciplinary teams).

The role of cognitive interventions and adherence-support programs in reducing recurrence risk requires randomized trials.

Practical Recommendations (Based on Review)

1. Strict control of modifiable risk factors (especially blood pressure and AF) and ensuring adherence to secondary prevention are key to reducing recurrences and associated disability.

2. All patients after a recurrent stroke should receive comprehensive multidisciplinary rehabilitation; withholding rehabilitation is a missed opportunity to reduce disability.

3. Special attention should be given to cognitive rehabilitation and patient/family support to improve adherence to treatment and healthy lifestyle behaviors.

Conclusion. Recurrent ischemic strokes significantly worsen prognosis and increase the likelihood of persistent disability and mortality. The best outcomes are achieved through a comprehensive approach: early optimization of secondary prevention, active rehabilitation, and targeted management of cognitive and behavioral risk factors. Additional prospective studies on modern rehabilitation strategies and adherence-enhancing programs are needed to reduce the burden of recurrent strokes.

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