DOI.10.7860/JCDR/2026/90232.23810 Abstract No.: 40

Physiotherapeutic Interventions in Stiff Person Syndrome: A Narrative Review of Case-based Evidence

SANJANA KHANNA[1], AGAM SURI[2], ANKITA SHARMA[3]

ABSTRACT

Stiff-Person Syndrome (SPS) is a rare autoimmune neurological disorder characterised by progressive rigidity of axial and proximal limb muscles, with painful, stimulus-sensitive spasms, largely due to impaired GABAergic inhibition and frequently associated with anti-GAD antibodies. SPS predominantly affects axial muscles, including the paraspinal and abdominal regions, leading to reduced joint range of motion, gait disturbances, and marked limitations in performing Activities of Daily Living (ADLs), often accompanied by anxiety and phobic disorders, and worsening disability. Early recognition with specialised diagnosis criteria and integration of physiotherapy within multidisciplinary care are essential, as targeted interventions including physiotherapy can reduce stiffness and spasms, improve mobility and balance, and enhance functional independence. This narrative review aims to synthesise and describe the role of physiotherapeutic interventions in SPS over the last two decades. This review is focussed on the effect of physiotherapy interventions on muscle rigidity, balance and functional independence. A narrative review design was adopted to examine the role of physiotherapeutic interventions in SPS. Published literature was searched and identified from electronic databases, including PubMed, Cochrane, Scopus, and Embase, over two decades (2005-2025). The combinations of terms related to 'Stiff-Person Syndrome' and 'physiotherapy' or 'physical therapy' were used. The case reports with physiotherapy interventions without restrictions on age, sex and disease duration were included. Data were extracted qualitatively for patient characteristics, diagnostic criteria, physiotherapy assessment findings, intervention protocols, adjunctive treatments, and reported clinical and functional outcomes. Interventions were subsequently grouped into categories targeting symptom relief (e.g., stiffness and spasms) and functional restoration (e.g., mobility and activities of daily living), and findings were synthesised descriptively due to heterogeneity and low study level. Eleven case studies were available with physiotherapeutic interventions and were associated with a reduction in muscle rigidity and stimulus-sensitive spasms, along with improved joint range of motion. The interventions used in the case reports were stretching, relaxation techniques, hydrotherapy, balance and coordination training, and manual therapy after tailored according to the needs of the patient. Overall, the patients showed improvement in mobility and ADLs. The improvement seen in the reduction in fear and anxiety is limited. Physiotherapeutic interventions may reduce rigidity and spasms and enhance muscle function and promote greater independence in ADLs in individuals with SPS; based on existing case-based literature. Severe cases may progress to Progressive Encephalomyelitis with Rigidity and Myoclonus (PERM), underscoring the importance of early recognition. Limited evidence precludes definitive conclusions regarding long-term prognosis, emphasising the need for further research.

Keywords: Muscle rigidity, Muscle spasms, Physiotherapy.

PARTICULARS OF CONTRIBUTORS:
1. Undergraduate Student, Department of Physiotherapy, Amity Institute of Health Allied Sciences, Amity University, Noida, Uttar Pradesh, India.
2. Undergraduate Student, Department of Physiotherapy, Amity Institute of Health Allied Sciences, Amity University, Noida, Uttar Pradesh, India.
3. Associate Professor, Department of Physiotherapy, Amity Institute of Health Allied Sciences, Amity University, Noida, Uttar Pradesh, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Sanjana Khanna,
Undergraduate Student, Department of Physiotherapy, Amity Institute of Health Allied Sciences, Amity University, Noida-201313, Uttar Pradesh, India.
Email: sanjana.khanna@s.amity.edu