

Inpatient Physiotherapy Management of Quadriparesis Following Ischemic Stroke: A Case Report

Jessika Mawarani¹, Meutiah Mutmainnah A.², Sri Wahyuni³

^{1,2}Program of Physiotherapy Professional Education, Faculty of Nursing, Hasanuddin University, Makassar, South Sulawesi, Indonesia

³Medical Rehabilitation Department, Dadi Regional Special Hospital of South Sulawesi Province, Makassar, Indonesia

Corresponding author:

Name: Jessika Mawarani

E-mail: jessikamawarani@gmail.com

Received 16 August 2026; Revised 24 August 2026; Accepted 31 August 2026; Published 30 September 2026.

©2026 The Authors. Published by the Physiotherapy Study Program, Faculty of Medicine, Udayana University, in collaboration with the Indonesian Physiotherapy Association (Ikatan Fisioterapi Indonesia). This is an open-access article distributed under the terms of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Abstract

Background: Ischemic stroke can cause severe motor impairment, including quadriparesis, with substantial limitations in mobility and activities of daily living. Reports of individualized physiotherapy management in patients with severe poststroke impairment remain limited.

Objective: To describe the physiotherapy assessment, intervention, and short-term outcomes of an inpatient with quadriparesis following ischemic stroke.

Methods: A 79-year-old woman with quadriparesis following ischemic stroke received two inpatient physiotherapy sessions on 13 and 15 April 2026. Interventions included therapeutic communication, deep breathing exercise, Manual Muscle Belly Tonus Stimulation, shoulder approximation, passive range of motion, active assisted range of motion, quadriceps setting exercise, and infrared rays during the second session. Pain, muscle strength, muscle tone, and functional dependence were assessed using the Numeric Rating Scale, Manual Muscle Testing, Ashworth Scale, and Barthel Index.

Results: Pain remained 0 at rest, during movement, and on pressure. Left sided muscle strength changed from 0/5 to 1/5, while right sided strength was 1/5 initially, with no separate follow up value available. The Ashworth Scale changed from 0 to 1, indicating a slight increase in muscle tone. The Barthel Index remained 0, indicating persistent total dependence in activities of daily living.

Conclusion: Short term changes were observed in left sided muscle strength and muscle tone, whereas pain and functional dependence remained unchanged. The findings are descriptive and cannot establish treatment effectiveness or causal attribution.

Keywords

Ischemic Stroke; Quadriparesis; Physiotherapy; Muscle Strength; Activities of Daily Living; Case Report

Introduction

Stroke remains a major cause of mortality and long-term disability worldwide. Ischemic stroke occurs when cerebral blood flow is interrupted, resulting in focal neurological injury whose clinical manifestations depend on the location and extent of brain involvement. Motor impairments following ischemic stroke may include muscle weakness, altered muscle tone, impaired voluntary movement, reduced postural control, and restricted mobility, which may subsequently limit independence in activities of daily living.¹ The severity and distribution of these impairments vary among individuals and may substantially influence the priorities of inpatient rehabilitation.²

When neurological impairment affects all four extremities, quadriparesis can result in profound limitations in voluntary movement and functional mobility. Physiotherapy assessment in this context requires identification of impairments in body functions, activity limitations, and relevant contextual factors to establish treatment priorities that are appropriate to the patient's clinical condition.² The assessment should therefore consider not only muscle strength but also muscle tone, pain, joint mobility, movement capacity, and functional dependence.² This comprehensive approach is particularly important in patients with severe neurological deficits who have limited ability to participate independently in movement and self-care activities.

Early inpatient rehabilitation may incorporate positioning, respiratory exercises when indicated, maintenance of joint mobility, facilitation of voluntary movement, and therapeutic exercise according to the patient's neurological status and tolerance.² However, the selection and combination of interventions should be individualized according to the problems identified during assessment rather than interpreted as a standardized treatment protocol.² In patients with profound motor impairment, immediate physiotherapy priorities may include maintaining available range of motion, facilitating muscle activation, supporting movement initiation, and addressing factors that may influence participation in therapy. The clinical reasoning underlying the selection of individual interventions is therefore relevant when documenting physiotherapy management in a complex inpatient case.

In the present case, the patient's principal physiotherapy problems included severe weakness and limited voluntary movement involving all four extremities, impaired coordination and balance, and complete dependence in activities of daily living. Therapeutic communication and deep breathing exercise were incorporated to support communication and reduce physiological manifestations associated with anxiety. Manual Muscle Belly Tonus Stimulation and shoulder approximation were used to provide sensory or proprioceptive input in relation to muscle weakness and impaired motor activation. Passive range of motion exercise was directed toward maintaining available joint mobility, whereas active assisted range of motion exercise and quadriceps setting exercise were incorporated to facilitate active muscle participation and quadriceps activation. Infrared rays were added during the second session as a documented adjunct intended to provide local thermal preparation before therapeutic exercise. Because these interventions were administered as an integrated package, the contribution of any individual component to the observed clinical changes cannot be determined.

Although stroke rehabilitation has been widely described, detailed case documentation remains valuable when severe neurological impairment requires individualized physiotherapy management over a limited inpatient treatment period. In particular,

transparent reporting can clarify the relationship between the patient's clinical findings, physiotherapy problem list, intervention selection, treatment sequence, and short-term outcomes. The CARE guidelines emphasize comprehensive reporting of patient information, clinical findings, diagnostic assessment, therapeutic interventions, follow up, and outcomes in case reports.^{3,4} Such documentation is especially important when some clinical information, diagnostic findings, treatment parameters, or longer term follow up data are unavailable.

The present case report therefore focuses on the documented clinical management of a patient with quadripareisis following ischemic stroke rather than on determining the effectiveness of a specific physiotherapy modality. The report describes the initial physiotherapy assessment, physiotherapy diagnosis using the International Classification of Functioning, Disability and Health framework, clinical rationale for the intervention package, and short-term changes in pain, muscle strength, muscle tone, and functional dependence. The case also explicitly identifies information that could not be verified from the available documentation, including detailed radiological findings, post discharge follows up, and certain intervention parameters. Given the single case design, two treatment sessions, absence of a comparison condition, and short observation period, the findings are interpreted descriptively and are not intended to establish causality or generalize treatment effects. Accordingly, this case report aimed to describe the assessment, individualized inpatient physiotherapy management, and short-term clinical outcomes of a patient with quadripareisis following ischemic stroke, with reporting structured in accordance with the CARE guidelines.

Methods

This report describes a single inpatient case involving the assessment, physiotherapy diagnosis, intervention, and short-term clinical outcomes of a patient with quadripareisis following ischemic stroke. The report was prepared with reference to the CARE guidelines to support transparent reporting of the clinical course, assessment findings, interventions, follow up, and outcomes.^{3,4} No sampling strategy or population-based eligibility criteria was applied because the report concerns a single clinical case. The case was managed in the inpatient physiotherapy service of Rumah Sakit Khusus Daerah Dadi, Makassar, South Sulawesi, Indonesia.

The patient was a 79-year-old woman who had been hospitalized since 24 March 2026 and was referred for physiotherapy because of quadripareisis associated with ischemic stroke. According to the available clinical history, weakness initially developed predominantly on the left side and subsequently involved the right side. Before admission to the reporting facility, the patient had received treatment at two other healthcare facilities, where pharmacological management had been provided. Information regarding additional comorbidities, vascular risk factors, and relevant medication details was not available in the documented clinical information and was therefore not inferred.

The clinical timeline included hospitalization on 24 March 2026, approximately three weeks of reported motor impairment before the physiotherapy assessment, CT examination of the head and thorax on 12 April 2026, initial physiotherapy assessment and first treatment session on 13 April 2026, and second treatment session with follow up assessment on 15 April 2026. The available documentation confirmed that CT examinations of the head and thorax had been performed on 12 April 2026; however, the radiological findings were not available. The thoracic CT was not considered clinically relevant to the physiotherapy case and was therefore not used for diagnostic interpretation. No MRI findings were available or used in this report. No follow up data after 15 April 2026 or after hospital discharge were available.

The physiotherapy assessment included history taking, observation, palpation, examination of basic movement, neurological examination, and assessment of selected clinical outcomes. The patient was assessed for pain, muscle strength, muscle tone, and functional dependence. Pain was measured using the Numeric Rating Scale at rest, during movement, and on pressure. Muscle strength was assessed using Manual Muscle Testing based on the Medical Research Council grading system from 0 to 5.⁵ Muscle tone was assessed using the Ashworth Scale. Functional dependence was assessed using the Barthel Index. The National Institutes of Health Stroke Scale was used to describe the severity of neurological impairment, with an initial score of 24.⁶ Examinations for which numerical results were unavailable, including the Berg Balance Scale and Hamilton Anxiety Rating Scale, were not included as outcome measures. Neurological findings that were available but not repeated quantitatively were reported descriptively.

The assessment identified severe weakness and limited voluntary movement involving all four extremities, impaired coordination and balance, preserved passive range of motion, and complete dependence in activities of daily living. The initial Manual Muscle Testing findings were 1/5 on the right side and 0/5 on the left side. The initial Ashworth Scale score was 0, and the Barthel Index was 0. The physiotherapy diagnosis was organized using the International Classification of Functioning, Disability and Health framework, focusing on impairments in muscle power and voluntary movement, limitations in mobility and self-care activities, and family support as an environmental factor.

The intervention was individualized according to the clinical problems identified during assessment. Treatment was provided by a physiotherapist with an academic qualification in the Physiotherapy Profession. The patient remained lying on the treatment bed during the physiotherapy interventions. The first session was conducted on 13 April 2026 and included therapeutic communication for approximately 30 minutes, deep breathing exercise consisting of eight repetitions over approximately five minutes, Manual Muscle Belly Tonus Stimulation for three sets of eight counts over approximately five minutes, and shoulder approximation for three sets of eight counts over approximately five minutes. Passive range of motion exercise, active assisted range of motion exercise, and quadriceps setting exercise were each performed for three sets of eight counts over approximately five minutes.

The intervention components were selected according to the identified physiotherapy problems. Therapeutic communication was used to provide interpersonal support through communication that the patient could understand, with the aim of promoting a sense of safety and facilitating participation. Deep breathing exercise was used to support breathing regulation and relaxation in relation to the documented anxiety related problem. Manual Muscle Belly Tonus Stimulation was applied to provide sensory or proprioceptive input to weak muscles and facilitate awareness and activation. Shoulder approximation was used to provide proprioceptive input through approximation of the shoulder joint and to facilitate neuromuscular responses around the shoulder and trunk. Passive range of motion exercise was directed toward maintaining available joint mobility and reducing the risk of stiffness or contracture. Active assisted range of motion exercise was used to allow weak muscles to participate in movement with assistance, while quadriceps setting exercise was used to facilitate isometric quadriceps activation. These rationales describe the clinical purpose of each component and do not imply that any individual intervention caused the observed outcomes.

During the second session on 15 April 2026, the documented exercise and manual intervention program was continued, and infrared rays were added. Infrared rays were applied to the left and right biceps brachii, left and right quadriceps, and left and right gastrocnemius muscles. Each treatment area received five minutes of application at a distance of 50 cm. The documented clinical rationale for adding infrared rays was to provide a local thermal effect as a preparatory intervention so that the patient would be more prepared to participate in subsequent therapeutic exercise. Infrared rays had not been provided during the first session

because they were not considered a priority at that time. No standardized quantitative criterion or treatment progression threshold was documented for this modification.

Treatment response was documented during the two sessions. No dizziness, nausea, or excessive fatigue was reported in the available clinical record. However, formal physiological safety thresholds, standardized treatment stopping criteria, and treatment fidelity procedures were not documented. These missing details limit complete replication of the intervention. The same physiotherapist conducted the reported clinical evaluations.

Clinical outcomes were assessed at two time points: the initial assessment before the first physiotherapy session on 13 April 2026 and the follow up assessment on 15 April 2026 after the second documented session. Data were analyzed descriptively because the report involved one patient and two treatment sessions. No inferential statistical analysis, effect size calculation, confidence interval, or minimal clinically important difference assessment was performed. Observed changes were therefore interpreted as differences between the two documented assessment points and not as evidence of treatment effectiveness or causal effects.

Written informed consent was obtained from the patient for publication of anonymized clinical information. No patient perspective was available because no structured patient reported statement or documented patient narrative was available. No institutional ethical approval number or formal exemption documentation was available in the source information; therefore, no unsupported claim regarding the requirement or nonrequirement of ethical review is made in this report. The final ethical statement should remain consistent with the applicable institutional policy and any available documentation.

Results

The patient was a 79-year-old woman who was hospitalized with ischemic stroke and subsequently developed quadripareisis. According to the documented clinical history, weakness initially affected the left side and subsequently involved the right side. The patient had experienced motor impairment for approximately three weeks before the initial physiotherapy assessment. Before admission to the reporting facility, she had received treatment at two other healthcare facilities with pharmacological management. CT examinations of the head and thorax were documented on 12 April 2026; however, detailed radiological findings were not available and were therefore not interpreted in this report.

At the initial physiotherapy assessment on 13 April 2026, the patient was bedridden and appeared physically weak. An intravenous line was present in the left upper extremity. Marked weakness was observed on both sides of the body, with the lower extremities tending toward external rotation. Minimal muscle contraction was present in the extremities, but functional voluntary movement was not demonstrated. Verbal communication was limited, and the patient responded to questions by nodding or shaking her head. She was unable to perform left or right rolling independently. Active movement was not demonstrated, whereas passive range of motion was available throughout the four extremities.

The neurological and functional assessment demonstrated severe impairment. The National Institutes of Health Stroke Scale score was 24.7. Muscle strength assessed using Manual Muscle Testing was 1/5 on the right side and 0/5 on the left side. Pain was rated 0 at rest, during movement, and on pressure using the Numeric Rating Scale. Sensory examination was documented as within normal limits for temperature, light and coarse touch, and sharp and dull discrimination. The patient was unable to complete the documented coordination tests involving the upper and lower extremities. The initial Ashworth Scale score was 0, while the Barthel Index score was 0, indicating complete dependence in the activities assessed by the instrument.

Based on these findings, the physiotherapy diagnosis identified severe impairment in muscle strength and voluntary movement, accompanied by impaired coordination and balance, substantial mobility limitations, and complete dependence in activities of daily living. The identified problems were organized using the International Classification of Functioning, Disability and Health framework. The clinical focus was directed primarily toward the documented motor impairments and limitations in mobility and self-care. Family support was identified as an environmental factor relevant to the patient's care context.

The patient received two documented physiotherapy sessions during the observation period. The first session was conducted on 13 April 2026 and consisted of therapeutic communication, deep breathing exercise, Manual Muscle Belly Tonus Stimulation, shoulder approximation, passive range of motion exercise, active assisted range of motion exercise, and quadriceps setting exercise. On 15 April 2026, the documented exercise and manual intervention program was continued, with infrared rays added to the treatment. The infrared rays were applied to the left and right biceps brachii, quadriceps, and gastrocnemius muscles for five minutes per area at a distance of 50 cm. The patient remained lying on the treatment bed during the physiotherapy interventions. The treatment was provided by a physiotherapist with an academic qualification in the Physiotherapy Profession. The treatment sequence and documented dosage are presented in Table 1 to distinguish the intervention components, clinical focus, and available treatment dosage across the two sessions.

Table 1. Physiotherapy Intervention Delivered During the Observation Period

Session and date	Clinical focus	Intervention	Documented dosage
First session, 13 April 2026	Communication and emotional support	Therapeutic communication	Approximately 30 minutes
First session, 13 April 2026	Breathing regulation	Deep breathing exercise	8 repetitions, approximately 5 minutes
First session, 13 April 2026	Muscle weakness	Manual Muscle Belly Tonus Stimulation	3 sets of 8 counts, approximately 5 minutes
First session, 13 April 2026	Muscle weakness	Shoulder approximation	3 sets of 8 counts, approximately 5 minutes
First session, 13 April 2026	Maintenance and facilitation of movement	Passive range of motion exercise	3 sets of 8 counts, approximately 5 minutes
First session, 13 April 2026	Facilitation of active movement	Active assisted range of motion exercise	3 sets of 8 counts, approximately 5 minutes
First session, 13 April 2026	Lower extremity muscle activation	Quadriceps setting exercise	3 sets of 8 counts, approximately 5 minutes
Second session, 15 April 2026	Continuation of physiotherapy program	Documented exercise and manual intervention program	Continued according to the clinical record
Second session, 15 April 2026	Additional modality	Infrared rays	5 minutes per area at 50 cm

Table 1 shows that the first session focused on communication, breathing regulation, sensory and neuromuscular facilitation, maintenance of joint mobility, assisted movement, and quadriceps activation. The second session continued the documented

exercise and manual program and introduced infrared rays as an additional modality. The addition of infrared rays was documented as a preparatory intervention intended to provide a local thermal effect before therapeutic exercise. No standardized quantitative progression criterion was documented for this modification.

Changes in the measured outcomes between the initial assessment on 13 April 2026 and follow up assessment on 15 April 2026 are summarized in Table 2. The outcome data are presented according to the actual assessment time points and distinguishing findings that were available for each side of the body.

Table 2. Clinical Outcomes at Initial and Follow Up Assessment

Outcome	Instrument		Initial assessment, 13 April 2026	Follow up assessment, 15 April 2026	Observed change
Pain at rest	Numeric Scale	Rating	0	0	No change
Pain during movement	Numeric Scale	Rating	0	0	No change
Pain on pressure	Numeric Scale	Rating	0	0	No change
Right sided muscle strength	Manual Testing	Muscle	1/5	Not separately documented	No change can be established
Left sided muscle strength	Manual Testing	Muscle	0/5	1/5	Increased by one grade
Muscle tone	Ashworth Scale		0	1	Slight increase in tone
Functional dependence	Barthel Index		0	0	No change

As shown in Table 2, the clearest documented change was in left sided muscle strength, which increased from 0/5 to 1/5. This represented the emergence of minimal muscle contraction but did not demonstrate functional voluntary movement. Right sided muscle strength was initially documented as 1/5, but a separate follow up value was not available; therefore, a change in right sided strength cannot be established. The Ashworth Scale changed from 0 to 1, indicating the emergence of a slight increase in muscle tone rather than an improvement in function.

Pain remained unchanged at 0 across all three assessed conditions. The Barthel Index also remained 0 at both assessment points, indicating persistent total dependence in the activities assessed by the instrument. Thus, the observed change in left sided muscle strength was not accompanied by a documented change in functional independence during the observation period.

No dizziness, nausea, or excessive fatigue was reported during the two documented physiotherapy sessions. However, formal physiological safety thresholds and standardized treatment stopping criteria were not documented. No patient perspective or structured patient reported outcome was available. Furthermore, no additional clinical outcome data were available after the second physiotherapy session or following hospital discharge. The reported results are therefore limited to the changes documented between 13 and 15 April 2026.

Discussion

This case report describes the short-term clinical course of a 79 year old woman with quadripareisis following ischemic stroke who received two inpatient physiotherapy sessions. The main observed changes were an increase in left sided muscle strength from 0/5 to 1/5 and a change in Ashworth Scale score from 0 to 1. In contrast, pain remained 0 at rest, during movement, and on pressure, while the Barthel Index remained 0. These findings indicate changes in selected impairment level measures without a corresponding documented improvement in functional independence. Because the case involved one patient, two treatment sessions, and no comparison condition, the observations cannot establish the effectiveness of the physiotherapy program or the contribution of any individual intervention.

The severity of the patient's neurological impairment is an important context for interpreting these findings. The initial National Institutes of Health Stroke Scale score was 24, accompanied by profound weakness, limited voluntary movement, impaired coordination and balance, and complete dependence in activities of daily living. The 2026 American Heart Association and American Stroke Association guideline emphasizes individualized assessment and rehabilitation according to the patient's neurological and functional status, while also recognizing uncertainty regarding the optimal timing, frequency, and dose of rehabilitation for individual patients.² This principle is relevant to the present case because the physiotherapy program was selected according to the documented clinical problems rather than delivered as a standardized experimental protocol. The case therefore illustrates the clinical documentation of individualized inpatient management rather than evidence of superiority of a particular treatment approach.

The change in left sided muscle strength from 0/5 to 1/5 represents the emergence of minimal observable muscle contraction. Under the Medical Research Council grading system, a grade of 0 indicates no visible or palpable contraction, whereas grade 1 indicates visible or palpable contraction without sufficient strength to produce joint movement.⁵ Although this represents a measurable change at the impairment level, it should not be interpreted as restoration of functional movement. The right side was initially documented as 1/5, but no separate follow up value was available, preventing assessment of change on that side. Therefore, the available data support only a side specific observation rather than a generalized improvement in muscle strength.

Several factors may account for a change in muscle strength during the observation period. Early neurological recovery may occur naturally after stroke, while motor performance can also vary according to attention, cooperation, fatigue, examination conditions, and day to day clinical status. Concurrent medical management may further influence neurological and functional presentation. Because the present case did not include repeated baseline assessments, a control condition, or blinded outcome assessment, these factors could not be separated from the physiotherapy episode. The observed change should consequently be regarded as a short-term clinical observation occurring during the documented period rather than evidence of a causal treatment effect.

The change in muscle tone requires an equally cautious interpretation. The Ashworth Scale score changed from 0 to 1, corresponding to the emergence of a slight increase in resistance during passive movement.⁷ An increase in the score does not represent functional improvement and should not be described as recovery. The Ashworth Scale has recognized limitations because the observed resistance may be influenced by examination technique, positioning, movement velocity, and non neural mechanical factors.⁸ Consequently, the difference between the two assessments may reflect an actual change in tone, measurement variability, or both. The present finding is therefore best reported neutrally as a change in the Ashworth Scale score rather than as a beneficial or adverse therapeutic outcome.

The unchanged Barthel Index provides an important functional perspective. The score remained 0 at both assessment points, indicating persistent total dependence in the activities assessed by the instrument. This finding demonstrates that the small change observed in left sided muscle strength did not translate into a measurable change in functional independence during the short observation period. Impairment level changes and activity level changes may occur at different rates, particularly in patients with severe neurological deficits. Therefore, the present case does not support claims regarding improved activities of daily living, enhanced independence, or functional recovery.

Pain also remained unchanged at 0 under all assessed conditions. Accordingly, pain reduction cannot be considered an outcome of the documented physiotherapy episode. The absence of reported dizziness, nausea, or excessive fatigue indicates that no such adverse responses were documented during the two sessions. However, formal physiological safety thresholds and standardized treatment stopping criteria were not available in the clinical record. Thus, the absence of documented adverse events should not be interpreted as evidence of safety beyond the observed treatment sessions.

The intervention package was based on the physiotherapy problem list and included therapeutic communication, deep breathing exercise, Manual Muscle Belly Tonus Stimulation, shoulder approximation, passive range of motion, active assisted range of motion, quadriceps setting exercise, and infrared rays during the second session. Therapeutic communication and breathing exercise were used in relation to the patient's anxiety related problem and ability to participate in communication and breathing exercise. Manual Muscle Belly Tonus Stimulation and shoulder approximation were selected to provide sensory or proprioceptive input in the context of severe muscle weakness. Passive range of motion addressed maintenance of available joint mobility, while active assisted range of motion and quadriceps setting exercise were directed toward facilitating active participation and muscle activation. These clinical rationales explain the treatment selection but do not demonstrate that any individual component produced the observed changes.

Infrared rays were introduced during the second session and applied to the documented muscle areas as a preparatory intervention intended to provide a local thermal effect before therapeutic exercise. Because infrared rays were introduced only during the second session and no predefined quantitative progression criterion was documented, their independent contribution cannot be evaluated. In addition, the intervention record did not contain complete information regarding treatment fidelity or all technical implementation details. Although the area, duration, and distance of infrared application were subsequently confirmed, the limitations of the original documentation restrict complete replication of the treatment protocol.

The case has several important limitations. First, it involved only one patient and two physiotherapy sessions over approximately three days, without a control condition or repeated baseline assessment. Second, no post discharge follow up was available, limiting interpretation to the immediate documented observation period. Third, detailed radiological findings from the CT examination were unavailable, preventing analysis of lesion characteristics in relation to the neurological presentation. Additional information regarding comorbidities, vascular risk factors, and medication history was also unavailable. Finally, patient perspective, formal safety criteria, and complete treatment fidelity documentation were not available. These limitations substantially restrict causal interpretation and generalizability.

Despite these limitations, the case provides clinically relevant descriptive information about individualized physiotherapy management in a patient with severe poststroke quadripareisis. Its principal value lies in documenting the relationship between assessment findings, physiotherapy problem identification, intervention selection, treatment modification, and short-term outcomes. Importantly, the case demonstrates that a measurable change in an impairment outcome may occur without a corresponding change in functional dependence. Future case reports and clinical studies would benefit from longer follow up, repeated standardized assessments, clearly defined intervention parameters, documented safety criteria, and outcomes spanning impairment, activity, and participation.² Comparative study designs are also needed to distinguish treatment related effects from spontaneous neurological recovery and concurrent medical care.

Conclusion

This case report describes the assessment, physiotherapy diagnosis, individualized inpatient physiotherapy management, and short-term clinical outcomes of a patient with quadripareisis following ischemic stroke. During the documented observation period, left sided muscle strength changed from 0/5 to 1/5, while the Ashworth Scale score changed from 0 to 1, indicating a slight increase in muscle tone. Pain remained 0 at rest, during movement, and on pressure, and the Barthel Index remained 0, indicating persistent total dependence in the activities assessed.

The observed changes were limited to selected impairment level outcomes and were not accompanied by documented improvement in functional independence. Given the single case design, two physiotherapy sessions, short observation period, absence of a comparison condition, and concurrent inpatient care, these findings cannot establish treatment effectiveness or causal attribution to the physiotherapy intervention or any individual treatment component. The absence of post discharge follow up further limits interpretation of longer term outcomes.

This case highlights the importance of individualized assessment, explicit clinical reasoning, accurate documentation of intervention parameters, and evaluation of both impairment and functional outcomes in patients with severe poststroke neurological deficits. Further studies with longer follow up, repeated standardized assessments, clearly defined intervention protocols, and comparative designs are needed to clarify the effects of specific physiotherapy interventions on motor and functional recovery.

Author Contribution

Jessika Mawarani: Conceptualization, Methodology, Investigation, Data Curation, Intervention, Formal Analysis, Writing Original Draft, Writing Review and Editing.

Meutiah Mutmainnah A.: Methodology, Investigation, Clinical Assessment, Supervision, Writing Review and Editing.

Sri Wahyuni: Clinical Supervision, Methodology, Intervention Supervision, Validation, Writing Review and Editing.

All authors: Review and approval of the final manuscript.

Acknowledgments

The authors thank all individuals who provided support and contributed to the completion of this case report. The authors particularly thank the patient for her cooperation and consent to participate in the case report. The authors also acknowledge the clinical educator and clinical instructor for their guidance, supervision, and support throughout the clinical implementation and preparation of this manuscript.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest related to the preparation or publication of this case report.

Funding Sources

This case report received no financial support from government agencies, private organizations, or nonprofit institutions.

Ethics Statement

Written informed consent was obtained from the patient for the use and publication of anonymized clinical information. No institutional ethics approval number or formal exemption documentation was available in the source documentation. Therefore, no unsupported claim is made regarding the requirement or nonrequirement of formal ethical review. The ethical status of this case report should be reported in accordance with the applicable institutional policy and any available documentation.

References

1. Alt Murphy M, Munoz-Novoa M, Heremans C, Branscheidt M, Cabanas-Valdés R, Engelter ST, et al. European Stroke Organisation (ESO) guideline on motor rehabilitation. *Eur Stroke J*. 2025;10(4):1160-1188.
2. Richards LG, Ifejika NL, Stein J, Bahouth MN, Abshire Saylor M, Barrett AM, et al. 2026 guideline for adult stroke rehabilitation and recovery: a guideline from the American Heart Association and American Stroke Association. *Stroke*. 2026;57(10):e514-e658.
3. Gagnier JJ, Kienle G, Altman DG, Moher D, Sox H, Riley D. The CARE guidelines: consensus-based clinical case report guideline development. *J Clin Epidemiol*. 2014;67(1):46-51.
4. Riley DS, Barber MS, Kienle GS, Aronson JK, von Schoen-Angerer T, Tugwell P, et al. CARE guidelines for case reports: explanation and elaboration document. *J Clin Epidemiol*. 2017;89:218-235.
5. Medical Research Council. Aids to the examination of the peripheral nervous system. London: Her Majesty's Stationery Office; 1976.
6. Brott T, Adams HP, Olinger CP, Marler JR, Barsan WG, Biller J, et al. Measurements of acute cerebral infarction: a clinical examination scale. *Stroke*. 1989;20(7):864-870.
7. Vidmar T, Goljar Kregar N, Puh U. Reliability of the Modified Ashworth Scale after stroke for 13 muscle groups. *Arch Phys Med Rehabil*. 2023;104(10):1606-1611.
8. Gal O, Baude M, Deltombe T, Esquenazi A, Gracies JM, Hoskovcova M, et al. Clinical outcome assessments for spasticity: review, critique, and recommendations. *Mov Disord*. 2025;40(1):22-43.