

Objective: To determine the optimal time to conduct Walkbot robot-assisted gait training (RAGT) rehabilitation by comparing cognition and motor sensorimotor functions across the stroke acute, subacute, and chronic stages.

Methods: 47 stroke survivors (acute stage, $n = 18$; subacute stage, $n = 14$; chronic stage, $n = 15$) consistently underwent Walkbot RAGT for 30-min a session, three times a week, for 4 weeks. Ten clinical outcome variables, including the Mini-Mental State Examination (MMSE), Fugl-Meyer Assessment (FMA), Berg Balance Scale (BBS), Modified Ashworth Scale, Modified Barthel Index (MBI), Trunk Impairment Scale (TIS), and gait parameters, comprising steps, distance, stride length, and speed, were analyzed.

Results: Among between-group comparisons, there was a significant difference in the gait steps, and distance between the acute and other groups. Among within-group comparisons, the acute group showed significant differences in seven variables, including FMA, BBS, MBI, TIS, gait steps, distance, and speed. Compared with the subacute and chronic groups showing significant differences for three and two variables, respectively.

Conclusion: Walkbot RAGT was more effective for functional improvement in the acute stage than in the subacute and chronic stages. Our research provided clinical evidence-based insights in determining the optimal intervention timing for robotic gait rehabilitation.

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EFFECT OF FRAILTY ON CLINICAL OUTCOMES OF HIP FRACTURE PATIENTS; A SYSTEMATIC REVIEW

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Objective: To determine the impact of frailty on clinical outcomes of hip fracture (HF) patients.

Methods: Original studies published during the last 10 y were searched in PubMed and Cochrane using the key terms (frailty) AND (clinical outcomes OR adverse outcomes OR prognosis) AND (hip fracture OR femoral fracture). The PRISMA guidelines were followed in selecting articles and case reports, conference reports, review articles, meta-analyses and articles published in other languages were excluded.

Results: The original search retrieved in 117 articles. Based on selection criteria 13 quantitative studies (4 retrospective cohort studies, 6 prospective and 3 hospital databases) were considered covering 211,461 total HF patients aged ≥ 50 y. These studies have used 10 different tools to assess frailty: those were Frailty index (including number of deficits such as 51, 44, 32, 22, 19 deficits), modified frailty index, Edmonton frailty scale, Clinical frailty scale, Groningen Frailty Index and Hospital frailty risk score. Clinical outcomes included six themes such as functional outcomes, medical complications, surgical complications, readmissions, length of hospital stay and mortality at 1, 3, 6 months and 1 y post fracture. HF patients with higher degree of frailty had higher risk of short-term mortality, other medical and surgical complications, impaired functional recovery, readmissions, increased length of hospital stay and impaired quality of life (QoL).

Conclusion: HF patients with frailty experience more short-term mortality, adverse medical or surgical outcomes, impaired functional recovery and poor QoL compared with nonfrail patients. Frailty is a determinant of adverse clinical outcomes of HF patients.

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SURGICAL TREATMENT FOR FRAGILITY HIP FRACTURES DURING THE COVID-19 PANDEMIC RESULTED IN LOWER SHORT-TERM POSTOPERATIVE FUNCTIONAL OUTCOME AND A HIGHER COMPLICATION RATE COMPARED TO THE PREPANDEMIC PERIOD

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Objective: To investigate the in-hospital complication rate and short-term postoperative functional outcomes of fragility hip fracture (FHF) patients compared between the COVID-19 pandemic and pre-pandemic periods.

Methods: Using data from the Siriraj Fracture Liaison Service registry, FHF patients treated during the COVID-19 pandemic (1 March 2020 to 30 April 2021) were time-matched with FHF patients treated during the pre-pandemic period (1 March 2018 to 30 April 2019). We collected the rate of in-hospital postoperative complications, and postoperative functional outcomes at discharge and 3-months as measured by Barthel Index (BI) and the EuroQol-visual analog scale (EQ-VAS). Functional outcome measures were compared between the pre-pandemic and pandemic periods.

Results: During the study period, there were 197 and 287 patients in the pre-pandemic and pandemic groups, respectively. At the 3-month postoperative follow-up, the mean postoperative BI and change in BI scores were both significantly lower in the pandemic group indicating poorer postoperative function. Moreover, FHF patients treated during the pandemic had significantly more in-hospital complications (36.6% vs. 22.8% respectively; $p = 0.002$). There was no significant difference in the 3-month EQ-VAS or change in EQ-VAS between the 2 study groups.

Conclusion: This study revealed a higher in-hospital complication rate and lower postoperative function at 3 months among FHF patients treated during the COVID-19 pandemic compared to pre-pandemic rates. Therefore, modifications of in-hospital and post-discharge protocols should be developed for implementation during pandemic crisis periods.

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TWO-STAGE SURGERY: AN ALTERNATIVE SURGICAL MANAGEMENT FOR EWING SARCOMA PATIENT USING PERSONALIZED AND ECONOMICAL 3D PRINTED TITANIUM FOR DISTAL CLAVICLE RECONSTRUCTION

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Objective: Report a case of two-stage reconstruction surgery as an alternative strategy for managing localized Ewing sarcoma in unfavorable financial situations.

Methods: We report case of a 13-year-old boy who presented with a growing lump at left clavicle for 5 months. Plain radiograph revealed an osteolytic mass with aggressive periosteal reaction, suggesting a malignant lesion. Advanced imaging and histopathological examinations revealed that the patient had Ewing sarcoma without metastasis. A standard chemotherapy protocol was subsequently initiated. The patient responded to the treatment, and then surgical resection was planned. However, owing to rarity of Ewing sarcoma of