E-Poster

EP-121

A Custom-Made Shoulder Orthosis Reduces Complications and Improves Functional Outcomes Among Hemiplegic Stroke Patients

Topic: Prosthetics and Orthotics

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BACKGROUND

The efficacy of the different shoulder orthoses available to prevent hemiplegic shoulder complications still remains debatable.

To evaluate how wearing a custom-made (CM) shoulder sling, capable of fitting all body morphologies while allowing movements, affected personal goals and complications among hemiplegic stroke patients undergoing outpatient rehabilitation in a hospital setting.

METHODS

We performed a prospective, single-center, non-randomized, longitudinal, pilot, cohort study on patients having a stroke within the last six months with hemiplegic shoulder pain or subluxation > 5mm. The primary outcome was achievement in Goal Attainment Scale (GAS) scores for three individualized goals to one month after (week 5), and compared to before (day 7). Secondary outcomes were changes in pain over the last 24 hours (visual analog scale (VAS)), subluxation distance, and upper-limb functional recovery, and satisfaction.

RESULTS

Twenty-two patients were included: 60% male, age 56.4±12.1 years old, body mass index 25.5±4 kg/m^2. All except two patients achieved at least one goal at week 5. GAS achievement rates (scores ≥ 0) were significantly higher at week 5 compared to day 7 (before sling) for goal 1 (76.2% vs. 4.8%; p = 0.0001), goal 2 (63.6% vs. 22.7%; p = 0.007), and goal 3 (40.9% vs. 4.5%; p = 0.005). More patients achieved two (33% vs. 0%) or three (29% vs. 4%) goals at week 5 than day 7. VAS pain score (-1.3 ± 2.3; p = 0.01) and subluxation distance (-0.41 ± 0.42 cm) were significantly reduced at week 5. Both the Chedoke Arm and Hand Activity Inventory score (+9.0 ± 13.1; p = 0.0003) and Fugl-Meyer upper-extremity score (+9.5 ± 9.5; p = 0.00002) were significantly improved after sling wearing. The end-of-study mean Quebec User Evaluation of Satisfaction with Assistive Technology score was 4.3 ± 0.5 (out of 5) for the device-related technical subdomain.

CONCLUSION

We observed improvements in patient-desired outcomes, complications and upper-limb functional recovery after CM sling wearing for 1-month without any serious adverse effects.

Trial registration: NCT04028999

Statement of Disclosures

None

Doi: 10.5606/archisprm.2026.EP-121

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