Enhancing Functional Recovery after Stroke: The Role of APPP Therapy

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Abstract

Introduction: Post-stroke spasticity frequently limits independence and slows recovery, even with standard physiotherapy. The Autoreflex Prenatal and Postnatal Therapeutic Positions (APPP), based on ontogenetic motor development, aim to regulate muscle tone by targeted reflex activation, thereby facilitating functional improvement.

Objective: To evaluate whether APPP combined with routine physiotherapy promotes greater functional recovery and spasticity reduction than conventional therapy alone.

Methods: Forty-six inpatients with mild to severe post-stroke spasticity participated. The APPP group (n=25) received APPP plus physiotherapy; the control group (n=21) received only physiotherapy. Spasticity was assessed using the Modified Ashworth Scale (MAS) at admission, mid-program (1.5 weeks), and discharge (3 weeks). Functional progress was monitored clinically.

Results: Patients treated with APPP achieved earlier and more consistent tone reduction, especially in proximal muscles with moderate spasticity. Importantly, functional improvements—such as greater ease in transfers, gait initiation, and self-care—emerged earlier and were more pronounced in the APPP group. Statistically significant benefits ($p<0.001$) appeared by mid-program and persisted through discharge. While both groups improved, functional gains in the APPP group consistently exceeded controls ($p<0.001$).

Conclusion: By accelerating tone reduction and facilitating motor control, APPP enhances functional recovery beyond standard therapy. This reflex-based approach may provide a valuable addition to post-stroke rehabilitation strategies. Larger studies are warranted to confirm long-term benefits.

Keywords

Stroke Rehabilitation, Functional Recovery, Spasticity Management, APPP Therapy, Reflex-Based Intervention.