Is CIMT more effective than bimanual therapy in the treatment of hemiplegic CP

Paul Clark
Student PT

Introduction

- Cerebral Palsy (CP) is the most common cause of physical disability in childhood. Hemiplegic CP is characterized by motor impairments to mainly one side of the body. This results in impairments in upper extremity function/movement that has a dramatic effect on quality of life. May result in compensation and neglect of affected limb. Therapy goal: to increase functional independence, by improving the use of both hands in cooperation. Traditional therapy: splinting, passive stretching, and spasticity medication.

Constraint-Induced Movement Therapy

- Forced use of affected UE by restraining non-affected
- Intensive, repetitive training of unimanual skills to the affected side
- For children, these activities include video games, playing with toys, etc.
- Was first used in adults following a stroke, traumatic brain injury, or focal hand dystonia to overcome “learned non-use” of affected limb
- Early trials in adults demonstrated significant improvement in quality/speed of affected limb movement and increase in quality of ADL’s
- Restraint is “child friendly,” and include casts, slings, splints, gloves and mitts.

Bimanual Training

- Intensive training of bimanual coordination
- No restraints, instead task-oriented training is used that requires greater skilled use of the involved UE
- For children, these activities include playing, video games, and exercises
- Emphasis on using both hands to have fun rather than one
- This forces the child to use their affected UE in order to achieve the task at hand.

Clinical Relevance

- Both CIMT and BT are more beneficial than standard therapy, although BT seems to be the most beneficial for functional activity.
- CIMT may be superior to BT to achieve gains in unimanual capacity.
- BT has proven to be more beneficial in bimanual performance.
- Shorter periods (2 hours) of CIMT has also been effective for unimanual activity.
- More likely to be tolerated, accurate intervention time, parent compliance.

References