Constraint Induced Movement Therapy

Angela Rice, OTR/L
Jessica Stricker, OTR/L

Objectives

- Define Constraint Induced Movement Therapy (CIMT) and protocols used at Cleveland Clinic Children’s
- Understand recent research regarding the efficacy of group based CIMT
- Identify methods and outcome measures for group CIMT at Cleveland Clinic Children’s
What is CIMT?

Constraint-Induced Movement Therapy is a family of neurorehabilitation treatments that produce a substantial improvement in the use of extremities affected by a major injury such as stroke, congenital cerebral palsy, or head injury.

What is CIMT?

- Effective Therapeutic Factors Include:
  - Intensive training of the affected upper extremity
  - Constraint of the nonaffected upper extremity
  - Shaping/grading of tasks and functional activities
  - Helping patients and parents develop strategies for continued hand/arm use in their home environment
CIMT at Cleveland Clinic Children’s Hospital for Rehab

• Protocol:
  • Consists of 3 weeks, 5 days per week, 3 hours per day
  • Includes 3 hours of aqua therapy a week (child wears cast in the pool)

CIMT at Cleveland Clinic Children’s

• Protocol cont.
  • Behavioral Contract is signed at start
  • Parents are asked to be present during all therapy sessions
  • Cast is removed on Day 14
  • Last day of treatment focused on emphasizing bilateral skills and educating parents on strategies for continued use in daily life without the use of constraint/cast
  • Individualized home programs developed in conjunction with families
CIMT at Cleveland Clinic Children's

- First day = evaluation, parent interview, video assessment (Assisting Hand Assessment) and fabrication of casts
- One cast is worn at all times on the child's unaffected UE

Recent Trend in CIMT

- Group model vs. individualized treatment
- Benefits of group model
  - Peer element
    - Allows patients to observe and learn from one another
    - Patients are able to motivate and support each other
  - Increased number of patients served in highly desired time spot (summer vacation)
Research

- Method
  - Group of 8 children aged 5.6-11.3 seen for 2.5 hours per day, 5 days per week for 4 weeks
  - Assessed with PDMS-2 and PEDI, assessed on four occasions: preintervention, postintervention, at 1-mo follow-up, and at 3-mo follow-up

- Results:
  - Fine motor skills and self care skills increased significantly
  - Spontaneous use of the affected UE increased significantly
  - Children were more willing to participate in group rather than individual therapy

- Discussion
  - Group therapy appeared to help children overcome frustration of performing CIMT
  - Group therapy can increase motivation to engage in repetitive tasks that make CIMT effective
  - Group based therapy is a feasible alternative intervention

Research

- Method:
  - 20 children ages 3 to 18 years participated in 2 week group program
  - Outcome measures included: Assisting Hand Assessment, Quality of Upper Extremity Skills Test (QUEST), and Canadian Occupational Performance Measure (COPM)

- Results:
  - Significant improvements noted in 65% of participants’ AHA scores, 80% of COPM Performance scores
  - Clinically significant improvements in at least one identified goal

- Discussion:
  - Study provided preliminary evidence that shows a group based CIMT approach can be effective for the treatment of hemiplegia
Selection Criteria for Cleveland Clinic Children’s Group CIMT

• Previously completed full CIMT program
• School aged
• Demonstrated independent gross grasp/
did not require 1:1 facilitation to participate in basic tasks
• Family/ caregiver support

Group CIMT at Cleveland Clinic Children’s

• Group model consisted of two occupational therapists to four children
• Children were between the ages of 6 years, 0 months to 8 years, 3 months
• Therapy sessions included group stretching, exercises, yoga, parachute, board games, tie dying and swimming
Outcomes

Parent Feedback

- Child gained confidence
- Enjoyed the peer element
- Child gained strength and function
- Group should be offered more than once a year
What happens after CIMT?

• CIMT is not the “solution”, but rather a big step in the right direction
• Post discharge plan to include
  – Structured daily practice
  – Righty/ Lefty jobs to ensure continued use
• Child to resume outpatient therapy with new skills acquired

Future Areas of Growth for Group CIMT

• Expand groups to include more ages and skill levels
• Bimanual group
  – Children who previously completed traditional group CIMT
  – Focus on bilateral skills
If you have any questions or would like more information on CIMT, please contact
Jessica Stricker, strickj@ccf.org
Angela Rice, ricea2@ccf.org