Intensive NDT vs. non intensive NDT in children with cerebral palsy

Question: In children with cerebral palsy (CP) is the use of intensive neurodevelopmental treatment (NDT) more effective in improving gross motor function than non intensive NDT?

Clinical Bottom Line

1. When properly administered and measured NDT is an effective form of treatment in improving gross motor function in children with cerebral palsy.
2. Intensity of treatment is a key component of NDT based programs.
3. Intensive NDT programs yield more significant results than non-intensive NDT programs.

1. Study Design: Quasi-experimental design to determine the effect of variation in NDT intensity on gross motor function.
2. Study Patients: 34 children with mild to moderate spasticity and hemiplegia. The sample was obtained by ratio stratification and by matching, sex, age, and impairment from a total of 114 children with CP recruited from a pediatric rehabilitation agency in Greece. Children within matched pairs were randomly assigned to treatment groups.
3. Methods: For ethical reasons there was no true “control group” as both Groups A & B received NDT treatment. Since intensity of NDT was the variable of interest Group A (n=17) served as a quasi control group, receiving NDT twice a week for 16 weeks. Group B (n=17) served as a quasi experimental group, receiving NDT five times a week for 16 weeks.
4. Outcome Measures: The Gross Motor Function Measure, an observational instrument that measures change in gross motor function in children with CP over time, was used to assess performance of the children in both groups before and after treatment.
5. Results: Children in both groups improved significantly after treatment, Group A p<0.001, Group B p<0.001. However, the children in Group B performed better and had statistically significant greater improvement when compared to the children in Group A p=0.018. The study attained a power level of 99.43% to find a significant difference with an effect size of 0.794.

Appraisal and Application

Strengths: The study demonstrated strong statistical power in favor of intensive NDT versus non intensive. Matching children for severity and using a reliable and valid outcome measure further strengthened the results in favor of intensive NDT.

Limitations: This study lacks a true control since both Groups A and B received NDT as a form of treatment. Researchers could strengthen their findings by comparing NDT in varying intensities to traditional/standard care treatments in varying intensities.


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