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THE EFFECT OF INTENSIVE PHYSICAL THERAPY FOR CHILDREN WITH CEREBRAL PALSY

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PURPOSE/HYPOTHESIS: The purpose of this retrospective study was to determine the effect of an intensive physical therapy (PT) program on gross motor function, walking ability and goal attainment in a cohort of children with cerebral palsy (CP). The intensive PT program involved exercise and functional practice (e.g. walking, jumping, strengthening) supervised by a pediatric physical therapist 4 hours per day, 5 days per week, for 3 weeks. The program was custom designed for each child based on functional goals. Despite the paucity of research on this model, many parents have sought out clinics in the United States that offer it and have gone to great expense and hardship to allow their children to complete it. Therefore, the data from one clinic was analyzed to determine its effectiveness. The hypothesis was that children would have significant improvement in gross motor function, walking ability and attainment of functional goals immediately following the program.

NUMBER OF SUBJECTS: The data from 47 subjects (62 total 3-week sessions) were collected from the medical record reflecting data from June 2004 to June 2007. 17 of the 47 subjects received the program twice and 2 subjects received it a third time (multiple sessions were done 1 year apart).

MATERIALS/METHODS: A retrospective chart review was completed at the outpatient pediatric clinic by an

independent researcher who was not involved in the testing or intervention. It was noted that testing was routinely completed by a physical therapist who was not involved in the intervention. Pre and post-test scores of the following outcomes were analyzed using paired t-tests ($\alpha = 0.05$): GMFM-88 total score, GMFM-66, six-minute walk test distance. Descriptive statistics were analyzed for demographic data and goal attainment. Many charts had missing data. Therefore, the number of results differs for each outcome.

RESULTS: The mean age of subjects was 6.4 (sd=2.8) years (range 3–17 years). GMFC levels ranged from levels I-IV. Post-intervention scores were significantly improved when compared to pre-intervention scores for the GMFM-88 ($n = 52$; mean increase of 5.11 (SD = 4.15) percentage points; $p < 0.001$), GMFM-66 ($n = 9$; mean increase of 3.17 (SD = 3.6) points; $p=0.03$), six-minute walk test distance ($n = 42$; mean increase of 168 (SD = 229) feet, $p < 0.001$). Goals as set by the therapist were met at 80–100% ($n = 34$); 60–80% ($n = 17$); 25–60% ($n = 6$). Five charts did not report percentage of goals met.

CONCLUSIONS: Although this intervention appeared clinically to have successful immediate effects, the lasting effects as well the significance of the impact on the child's participation in life was not determined. Therefore, a controlled study is warranted to determine the immediate and lasting effects of this model using valid and reliable outcomes at the activity and participation levels of the ICF model.

CLINICAL RELEVANCE: This model of intense practice over a three week period had positive immediate effects on gross motor function, walking ability and goal attainment in these subjects with cerebral palsy. These results form the basis for future research.