

Effect of early physical therapy on schoolchildren with hematological cancer: a quasi-randomized controlled pilot study

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Abstract

Background: Although the treatment for childhood hematological cancers such as acute lymphoblastic leukemia (ALL) has improved, there are problems involving a decrease in motor functional capacity and health-related quality of life (HRQOL) during and after cancer treatment. Physical therapy (PT) is expected to positively impact motor functional capacity and HRQOL in patients, but the optimal time for intervention is unknown. **Procedure:** This study evaluated the effect of inpatient PT intervention in pediatric patients with hematological cancer undergoing treatment at a single tertiary hospital. Participants were assigned to two groups that started PT before or after initial treatment (early PT or late PT, respectively). We evaluated the exercise tolerance of participants using the six-minute walking distance (6MWD) and differences in the HRQOL of participants and their mothers using the Pediatric Quality of Life Inventory (PedsQL) questionnaire at (1) admission, (2) the end of initial treatment, and (3) discharge. **Results:** Thirteen pediatric patients (61.5% ALL, aged 7–13 years) included. Significant improvements were observed in PedsQL in the early PT cohort but declined in the 6MWD and PedsQL in the late PT (all $p < 0.025$). The changes in PedsQL scores for the patients and their mothers were similar. No adverse events related to PT during treatment were identified. **Conclusion:** Early PT intervention is an effective alternative to intensive rehabilitation care. Data suggest that early rather than late-PT participation can result in significant functional gains in locomotion and HRQOL in pediatric patients with hematologic and oncologic conditions during hospitalization.

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