Functional School-Based Physical Therapy Management for a Child with Pallister-Killian Syndrome: A Case Report
Cheryl R. Espinosa, BS, Doctor of Physical Therapy Student & Molly E. Collin, PT
Doctor of Physical Therapy Program, University of New England, Portland, Maine

Background & Purpose
- Pallister-Killian Syndrome (PKS) is a rare genetic disorder caused by an additional short arm in chromosome 12.
- PKS affects multiple systems, which can impact a child’s development. (Figure 1)
- Common clinical manifestations include: hypotonia, visual impairment, hearing loss, coarse facial features, intellectual disability, and congenital heart defects.
- Improvements in gross motor function have resulted from physical therapy (PT) and rehabilitation involving neurodevelopmental treatment (NDT).
- Research is limited on the effects of PT interventions to the child’s level of function.

Timeline
- 2 Years Prior to Initial Evaluation:
  - Started school and received PT, OT, speech therapy, and vision therapy
  - Presented with hypotonia, developmental delay, auditory impairment, and cortical visual impairment
  - Received PT 5x/week involving NDT and additional interventions

Case Description
- The child was a 7-year-old male who received PT 5 days a week in school.
- Past medical history included hypotonia, global developmental delay, congenital hip dysplasia, atrial septal defect, cortical visual impairment, hearing loss, and ophthalmoplegic dysphagia.
- The child used bilateral solid ankle-foot orthoses (AFOs), adaptive glasses, and hearing aids.

Interventions
- Overground Gait Training
- Standing exercise
- Overground Gait Training
- BWSTT
- New solid AFOs
- Significant improvements during BWSTT
- Overground gait training
- Standing exercise
- BWSTT

Outcomes
- Improvements in standing time (0:16 seconds to 3:05 minutes) were evident after 6 weeks. (See above)
- Improvements in the number of reciprocal steps were seen during BWSTT (3 steps to 63 steps) overground gait training (0 steps to 6 steps).
- Observational posture and strength in standing and ambulation were additionally seen.

Discussion & Conclusion
- A strength of this case report included the unique nature of the child’s diagnosis and clinical presentation.
- The child missed 1 week of school due to an ear infection, which lead to a total of 5 weeks of PT.
- The child was unable to tolerate the standing program.
- A standing exercise, BWSTT, and overground gait training may improve gross motor skills for children with PKS.
- Further research is warranted on the benefits of these interventions to elicit improvements in function and declines in disability for children with PKS.

References

Contact Information
Please address all correspondence to Cheryl Espinosa at cespinosa@une.edu

Acknowledgements
The author acknowledges Molly Collin, PT, for assistance with case report conceptualization, as well as Anitha Sani, MPT, Bella De Guzman PT, CNDT, and Katherine Shattley, PT, DPT for guidance and supervision with pediatric patient management.

Special acknowledgments to all employees of The International Academy of Hope, the child, and his parent for participation in this case report.