Algorithm IDs Targeted Therapy Opportunities for Kids With Poor Prognosis

The use of the algorithm helped increase these kids' progression-free survival.

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Researchers have developed an algorithm that can identify molecular targets and pair them with targeted treatments for cancers in children who have a poor prognosis.

The use of this method helped delay disease progression or death in such children, according to a recent study that was presented at the virtual scientific program of the 2020 American Society of Clinical Oncology (ASCO) Annual Meeting.

Cornelis van Tilburg, MD, PhD, a pediatric oncologist at Hopp Children's Cancer Center Heidelberg, in Germany, and colleagues developed the algorithm to identify characteristics that make cancer susceptible to targeted drugs—for example, genetic mutations that play a role in cell growth and survival. They applied the algorithm to 525 pediatric cancer patients with poor prognosis in the INFORM (Individualized Therapy for Relapsed Malignancies in Childhood) registry.

Eight percent of the children had a cancer with a very high-priority level target, meaning it showed considerable promise for pairing with a targeted treatment. A total of 14.8% had a high-priority level target, while 20.3% had a moderate-priority and 23.6% had an intermediate-priority target. Further, 14.4% had a borderline-priority level target, while 2.5% had a low-priority and 1% had a very low-priority target. Finally, 15.4% had no actionable target, meaning their cancer had no molecular features targeted by existing drugs.

One hundred forty-nine of the children received targeted treatment, at the discretion of their oncologists, according to the targets that the algorithm identified. Of these, 20 involved a very high-priority target, mainly the genetic mutations known as ALK, BRAF and NRAS, as well as MET and NTRK fusions.

The children who received a targeted treatment had a median progression-free survival of 205 days, compared with just 114 days among the remaining children in the cohort.

However, there was no difference in the overall survival rate between the children who did and did

not receive targeted therapy as a result of the algorithm’s findings.

“This registry has opened up the genomic landscape in pediatric oncology,” van Tilburg said in an ASCO press release.“It provides a unique source of information to help match new drugs or drug ideas with suitable biomarkers in certain pediatric patient populations.”

To read a press release about the study, click here.
