UW-Madison Carbone Cancer Center: Another step towards personalized cancer therapy?

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Madison, Wis. — Among patients with high-risk neuroblastoma, those with certain genetic markers gained substantial benefit from adding immunotherapy to their treatment, according to results from UW Carbone Cancer Center researchers.

The results from a randomized clinical trial were presented at the American Association for Cancer Research (AACR) Annual Meeting 2017, April 1-5. Neuroblastoma is a type of cancer often found in the adrenal glands and other sites.

Previously reported data from the clinical trial, which involved 226 patients, showed that immunotherapy, in the form of three particular drugs in addition to the standard treatment (isotretinoin) significantly improved event-free and overall survival. These data led to U.S. Food and Drug Administration approval for this dinutiximab regimen in this indication.

However, not all patients who received immunotherapy had a response and many had significant adverse events.

“We wanted to determine if certain genotypes that are related to immune cells called NK cells – KIR/KIR-ligand genotypes – could predict how patients with high-risk neuroblastoma respond to immunotherapy,” said Dr. Amy K. Erbe, a UW

Carbone associate scientist who works with pediatric oncologist and researcher Dr. Paul Sondel. “Identifying biomarkers of response to immunotherapy may allow us to personalize therapy for patients in the future, helping to spare those from adverse events unlikely to respond.”

“Our data show that a certain combination of KIR/KIR-ligand genotypes may predict benefit from immunotherapy,” continued Erbe. “However, these findings need to be validated before we can consider making clinical decisions for patients with high-risk neuroblastoma based on KIR/KIR-ligand genotype.”

Erbe and colleagues determined the KIR/KIR-ligand genotypes of the 174 patients from the phase III trial for whom sufficient DNA was available for analysis. They then assessed whether certain genotypes were associated with event-free and overall survival.

According to Erbe, the main limitation is that the number of patients in the two treatment groups was relatively small, and the subgroups with the different KIR/KIR-ligand genotypes were even smaller. Thus, the conclusions from this single study cannot be viewed as definitive and need to be validated, she explained.

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