Cereblon as a Predictive Biomarker for Imid Therapy Sensitivity

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Editorial

Immunomodulatory drugs (IMiDs) are highly active in the treatment of hematological malignancies, including multiple myeloma (MM), non-Hodgkin lymphoma and chronic lymphocytic leukemia, but the mechanisms of action are still incompletely understood. In multiple myeloma, myelodysplastic syndrome and lymphomas, thalidomide and/or the structurally analogous compound lenalidomide, and pomalidomide; are antiproliferative, increase protein in myeloma cells assessed using immunohistochemistry is a found to correlate with poor drug response in MM cell lines and multiple myeloma, myelodysplastic syndrome and lymphomas, but the mechanisms of action are still incompletely understood. In parallel, there is mechanism of action by these agents. In parallel, there is significant clinical interest to investigate the possible role of cereblon as a biomarker for the IMiD compounds response or resistance. Nevertheless, measurement of CRBN protein is associated with a number of assay limitations. The requirement for high-quality clinical samples, such as myeloma cells enrichment by cell sorting, limits the validation of such quantified transcriptional expression of the CRBN gene method to every MM patient. In addition, the lack of a consensus protocol to amplify the CRBN gene is a crucial problem.

The positive predictive value of high CRBN expression is less robust and the interpretation of CRBN expression is complicated by the presence of multiple CRBN isoforms.

Therefore, further analysis is required to validate the putative predictive effect of CRBN for IMiDs sensitivity and standardized assays for measuring CRBN expression accurately are more than needed.

References