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652.MULTIPLE MYELOMA: CLINICAL AND EPIDEMIOLOGICAL

Outcomes Analysis of Lenalidomide-Induced Rashes in Myeloma Patients

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INTRODUCTION Lenalidomide is an immunomodulatory drug fundamental in treating and managing patients with multiple myeloma (MM). It works through various pathways to induce T-cell proliferation and activation of natural killer (NK) cells. This mechanism of T-cell activation is hypothesized to be one of the mechanisms that cause lenalidomide-related skin reactions. Skin reactions are a well-known adverse effect of lenalidomide treatment, with some studies showing that 44% of patients developed a rash while receiving treatment. Rash development has been associated with improved outcomes with other chemotherapy agents in patients with solid tumors. Initial investigation demonstrated that lenalidomide-induced rashes in myeloma patients were associated with improved survival. Other immune-mediated adverse reactions, such as lenalidomide-related diarrhea (LRD), have also been associated with improved patient outcomes. Lenalidomide-related diarrhea and rash likely stem from the same pathways involving the activation of Th2 and NK cells.

METHODS This single-site retrospective study analyzed charts from patients with multiple myeloma whose treatment course included lenalidomide single therapy or lenalidomide plus dexamethasone therapy. Patients who were only treated with lenalidomide in combination with other chemotherapies were excluded from the study. The development of a rash while receiving lenalidomide single therapy was recorded. We also recorded the number of patients who developed severe diarrhea requiring hospitalization or a change in therapy regimen. Other adverse reactions that altered lenalidomide treatment were also recorded. Outcomes were assessed using 5-year survival (5YS), overall survival (OS), and time to next treatment (TTNT).

RESULTS We analyzed the charts of 100 patients who met the criteria for the study and found that 25 (25%) patients developed rashes compared to 75 (75%) that did not. There was not a significant difference in OS or 5YS between the rash group compared to the non-rash groups [(OS: 40.0%, 38.7%, $p = 0.90$); (5YS: 68%, 52%, $p = 0.196$) respectively]. There was a statistically significant difference in TTNT between the rash group and the non-rash group (43.0 months, 21.2 months, $p = 0.035$). We compared 31 (31%) patients who displayed immune-related adverse effects (diarrhea and/or rash) to the 69 (69%) patients who developed no rashes or diarrhea. In these groups, there was a significant difference in TNTT and 5YS ($p = 0.035$; $p = 0.017$ respectively) but not in OS ($p = 0.857$).

CONCLUSIONS TTNT was measured in this study and is similar to progression-free survival, as patients whose diseases progressed initiated another treatment. We observed similar results to previous studies showing that patients who developed rashes on lenalidomide exhibited longer TTNT. We observed that patients who developed rashes or LRD exhibited longer TTNT and had significantly higher 5-year survival. These reactions may be manifestations of an increased immune response contributing to their improved response to lenalidomide.
Many patients with multiple myeloma undergo complex treatment regimens involving multiple therapies. We observed occasions when patients developed drug rashes on bortezomib, lenalidomide, and dexamethasone triple therapy but didn't develop a rash later on lenalidomide maintenance therapy. To isolate the rash to lenalidomide, these rashes were not counted in our study, skewing the number of patients counted as developing rashes.

Disclosures No relevant conflicts of interest to declare.

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