P1589 AGENTS CONTRIBUTING TO SECONDARY IMMUNODEFICIENCY DEVELOPMENT IN PATIENTS WITH MULTIPLE MYELOMA, CHRONIC LYMPHOCYTIC LEUKEMIA AND NON-HODGKIN LYMPHOMA: A SYSTEMATIC LITERATURE REVIEW

**Topic:** 30. Infections in hematology (incl. supportive care/therapy)

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**Background:** Patients with hematological malignancies (HM), such as multiple myeloma (MM), chronic lymphocytic leukemia (CLL), and non-Hodgkin lymphoma (NHL), have a higher risk of secondary immunodeficiency (SID), SID-related infections and mortality, due to both the intrinsic pathophysiology of the disease and certain cancer treatments. Here, we report the results of an interim analysis from a systematic literature review on the contribution of multiple cancer treatments to SID development.

**Aims:** To provide an overview of the cancer treatments associated with SID, including the incidence of SID and infections.

**Methods:** This review is in accordance with PRISMA guidelines on reporting reviews of the literature. On January 19, 2022, a systematic literature search was performed using the PubMed database to search for studies that mentioned in the title and/or abstract selected cancer treatments (Figure 1). Search strings included the MeSH terms for three types of HM: CLL, MM, or NHL; types of HM that are more chronic than others. Further inclusion criteria were applied, such as: published between 2011 and 2022; English language; included humans; and labeled as a clinical trial in PubMed. As shown in Figure 1, this initial search resulted in 721 entries, which were then further refined to include Phase III, Phase IV, and observational studies only, resulting in 236 studies. Publications had to report percentages of patients with any grade or grade ≥3 infections, any grade or grade ≥3 neutropenia, or hypogammaglobulinemia to be considered relevant. Of the 236 studies, 82 were considered relevant. For this interim analysis, we included the open-access publications only (n=53). The poster will report data from the full analysis, including all relevant publications.

**Results:** Out of the 53 studies, 11 included patients with CLL, 25 with MM and 17 with NHL. No studies reported the proportion of patients with hypogammaglobulinemia. Of note, not all studies reported values for both any grade and grade ≥3 events; therefore, in some instances the proportion of patients with grade ≥3 events might be higher than the proportion of patients with any grade events. Grade ≥3 infections were reported in 7.8–39% of patients with CLL, 0–50.2% of patients with MM, and 8.8–38% of patients with NHL. Across patients treated with an anti B-cell monoclonal antibody monotherapy or in combination, any grade and grade ≥3 infections were reported in 14.4–69.1% and 7.8–39% of patients with CLL, and 10–23.8% and 12–23% of patients with NHL, respectively. In the only study on MM in which patients were treated with an anti B-cell monoclonal antibody monotherapy or in combination, any grade and grade ≥3 infections were reported in 50.2% and 13.3% of patients, respectively. Comparable percentage of infections were reported in patients treated with a tyrosine kinase inhibitor or a proteasome inhibitor monotherapy or in combination across HM. The highest grade ≥3 infection rate was 50.2% in patients with MM treated with lenalidomide maintenance therapy.
Summary/Conclusion: This systematic literature review will help shed light on the actual proportion of patients who might develop SID due to various cancer treatments. These results highlight the importance of prophylactic treatment approaches, which aim to reduce the risk of infections due to SID in patients with HM.