SECONDARY HEMATOLOGIC MALIGNANCIES IN PATIENTS WITH MULTIPLE MYELOMA: A RETROSPECTIVE ANALYSIS OF RISK FACTORS AND INCIDENCE IN A LARGE URBAN HEALTH SYSTEM

M. Zimmer[1], J. Abad[2], J. Gupta[3], S. Ghosh[4], P. Kuriakose[1]

1. Henry Ford Hospital, Hematology/Oncology, Detroit, MI
2. Henry Ford Hospital, Internal Medicine, Detroit, MI
3. Henry Ford Hospital, Hospice and Palliative Medicine, Detroit, MI
4. Henry Ford Hospital, Public Health, Detroit, MI

Background

- Multiple Myeloma (MM) is a common hematologic malignancy, comprising 17% of hematologic malignancies and with an estimated 36,000 new cases annually in the United States[1]
- There is concern that MM therapies carry a risk of secondary hematologic malignancies (SHM)[2]
  - Incidence is estimated at 1-15%[3-4]
- The package insert of lenalidomide cautions against risk of acute myeloid leukemia (AML) and Hodgkin lymphoma & retrospective analyses have found the highest risk of myelodysplastic syndrome (MDS), myeloproliferative neoplasm (MPN), AML, and solid tumors as well [3,5]

Objective

- To identify patients treated for MM who subsequently developed SHM and estimate the incidence and timing of SHM development

Methods

- Retrospective, observational study

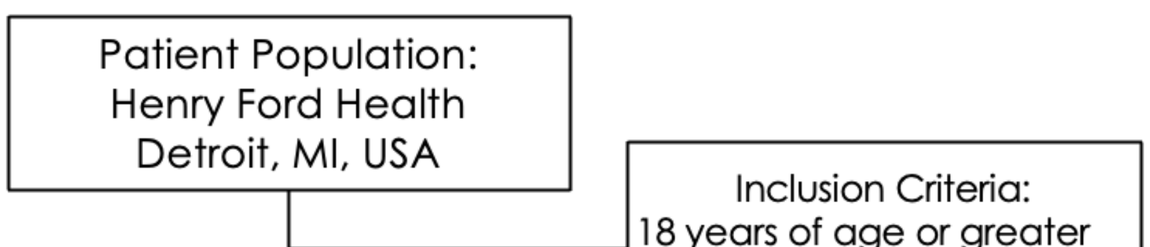


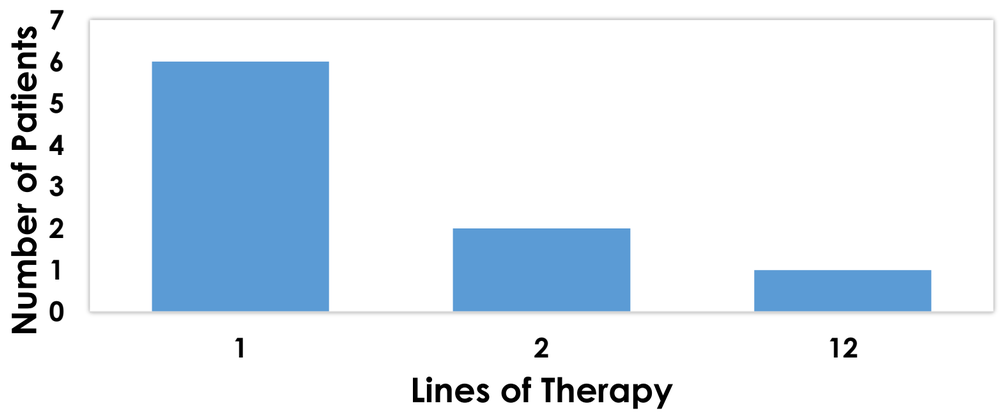
Figure 1: CONSORT Flow Diagram

Results

Table 1: Population Characteristics	All (n=9)
Demographic	
Male, n (%)	6 (66.7)
Female, n(%)	3 (33.3)
Median age at MM diagnosis, yrs (range)	62 (53-73)
Race, n (%)	
African American	4 (44.4)
Caucasian	3 (33.3)
Asian	1 (11.1)
Other	1 (11.1)

- At a median follow up of 58 months (range 35-144), most patients had received only one line of therapy:

Number of Patients by Lines of Therapy



- Five patients (55.6%) underwent auto-SCT and 66.7% of patients received maintenance lenalidomide for a median duration of 11 months (range 0-29)
- SHM were diagnosed a median of 4 years after MM diagnosis and were primarily myeloid in origin (77.8%)
- Median OS from MM diagnosis was 64 months (range 49-78) and median OS from SHM diagnosis was 5 months (range 0-9)

Discussion & Conclusions

- The incidence of SHM in our cohort was 0.2%, significantly less than reported in literature
- Most patients were not heavily pre-treated, often receiving only 1-2 lines of therapy and shorter duration of lenalidomide maintenance prior to the development of SHM
- Much about patient, disease and treatment factors still remains to be known regarding the risk of developing SHM and how they may impact MM treatment in the future

References

1. SEER Stat Fact Sheets: Myeloma https://seer.cancer.gov/statfacts/html/mulmy.html (Accessed on April 17, 2025).
2. Kotchetkov R, Masih-Khan E, Chu C, et al. Secondary primary malignancies during the lenalidomide-dexamethasone regimen in relapsed/refractory multiple myeloma patients. *Cancer Medicine*. 2017;6(1): 3-11.
3. Maclachlan K, Diamond B, Maura F, Hillengass J, Turesson I, Landgren CO, Kazandjian D. Second malignancies in multiple myeloma; emerging patterns and future directions. Best Pract Res Clin Haematol. 2020 Mar;33(1):101144. doi: 10.1016/j.beha.2020.101144. Epub 2020 Jan 11. PMID: 32139010; PMCID: PMC7544243.
4. Pedram Razavi, Gaurav Patel, Asher Chanan-Khan, Sikander Ailawadhi; Variable Risk of Second Primary Malignancy In Multiple Myeloma Patients of Different Ethnicities. *Blood* 2011; 118 (21): 678. doi: https://doi.org/10.1182/blood.V118.21.678.678
5. Takamatsu H, Matsuda T, Mizuno S, Takahashi T, Fuchida S- ichi, Hanamura I, Kataoka K, Tsukada N, Matsumoto M, Hangaishi A, Doki N, Uchida N, Sawa M, Maruyama Y, Kurahashi S, Nagafuji K, Harazaki Y, Kako S, Iida S, Ichinohe T, Kanda Y, Atsuta Y, Sunami K, Society for Transplantation and Cellular Therapy MMWG in the J. Changing trends in the risk factors for second primary malignancies after autologous stem cell transplantation for multiple myeloma before and after the introduction of proteasome inhibitors and immunomodulatory drugs. Haematologica 2023;108(12):3399-3408; https://doi.org/10.3324/haematol.2023.283202.

Contact Information

Markie Zimmer, MD
m.zimmer221@gmail.com