SAFETY OUTCOMES FOLLOWING FRONTLINE DARATUMUMAB-BASED THERAPY IN MULTIPLE MYELOMA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction

Daratumumab is a key frontline therapy for newly diagnosed multiple myeloma (NDMM), improving patient outcomes. However, a clearer understanding of its safety profile, including second primary malignancies (SPMs), severe hematologic toxicities, and infections, is critical. Robust pooled evidence specifically on these risks in frontline NDMM remains limited.

Aim

To evaluate the incidence and subtypes of second primary malignancies (SPMs), as well as hematologic and infectious toxicities, in patients receiving frontline daratumumab-based therapy for newly diagnosed multiple myeloma (NDMM).

Methods

DESIGN
Systematic review & meta-analysis of Phase II/III RCTs

POPULATION
Newly diagnosed multiple myeloma (NDMM); daratumumab vs. standard regimens

Databases: MEDLINE, Embase SCOPUS, Cochrane CENTRAL (to March 2025)

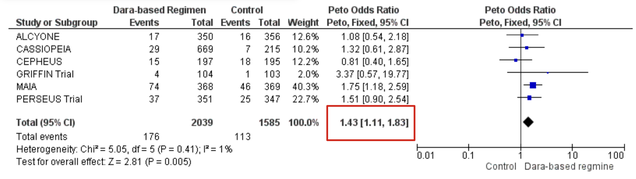
PRIMARY OUTCOMES
Second primary malignancies (SPMs)
Pooled ORs (95% CI), Peto fixed-effects model

SECONDARY OUTCOMES
Grade ≥3 hematologic toxicities
(neutropenia, anemia, thrombocypenia)
Infections
RRs (95% CI), Mantel-Haenszel random-effects model

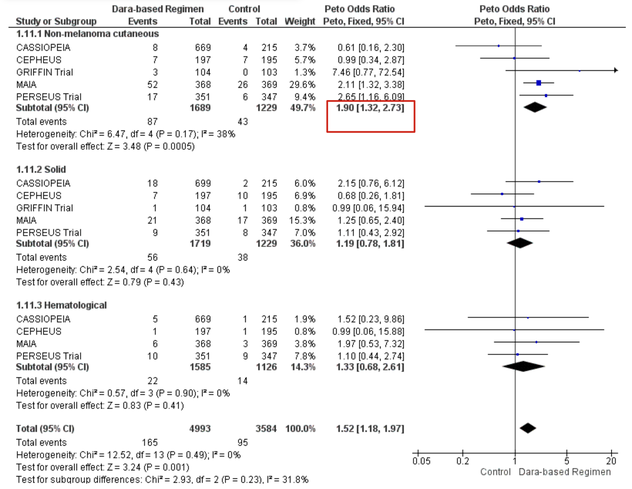
TOXICITIES
Graded per CTCAE

Results

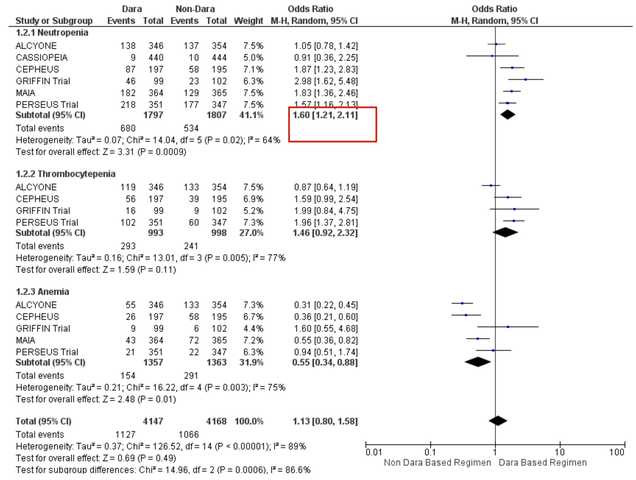
Risk of Second Primary Malignancy



Risk By Cancer Subtype



Hematological Adverse Events



Conclusions

Frontline daratumumab-based therapy in newly diagnosed multiple myeloma (NDMM) is associated with:

- **INCREASED RISK OF NON-MELANOMA SKIN CANCERS**
- **HIGHER INCIDENCE OF GRADE ≥3 NEUTROPENIA**
- **INCREASED RISK OF INFECTIONS**

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