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REAL-WORLD TREATMENT PATTERNS AND SEQUENCING OF BCMA-TARGETED THERAPIES IN RELAPSED/REFRACTORY MULTIPLE MYELOMA: A GLOBAL MULTI-CENTER ANALYSIS

Abstract # PS1888

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INTRODUCTION

Despite expanding therapeutic options, most patients with multiple myeloma (MM) eventually relapse (1,2).

B-cell maturation antigen (BCMA)-targeted therapies—specifically chimeric antigen receptor (CAR) T-cell therapies and bispecific antibodies (BsABs)—have revolutionized the treatment landscape (3,4).

These agents differ in their mechanism, efficacy, and safety profile, leading to challenges in determining the optimal treatment sequence in clinical practice (5).

Moreover, real-world data on clinical drivers for selecting between these modalities remain limited and current guidelines only marginally address this issue (6,7,8)

AIM

This large-scale study characterized real-world treatment patterns, sequencing, and primary **determinants influencing** the selection of **anti-BCMA CAR T-cells** versus **BsABs** in **relapsed/refractory MM** (RRMM).

METHOD

- During 2025, we conducted a retrospective analysis of anonymous patient charts based on data reported by onco-hematologists making treatment decisions for MM patients in the EU5 countries (France, Germany, Italy, Spain, UK), Japan, and China.
- The cohort included
  - 460 patients receiving CAR T-cell products (ide-cel and cilta-cel) and 1,482 patients receiving BsABs (teclistamab, elranatamab and talquetamab).
- Comparative analyses focused on treatment lines, disease biology (ISS, cytogenetics), and patient fitness (age, ECOG status, comorbidities).

RESULTS

CAR T vs BsABs patient profiles

The CAR T-cell cohort (n=460) had a median age of 63.6 years. (**Fig. 2**)

Notably, 43% received CAR T-cells in early lines (2L/3L), (**Fig. 1**) reflecting a trend toward earlier intervention.

This group was characterized by high-risk features, including high-risk cytogenetics (44%) (**Fig. 3**) and ISS stage III (60%), yet maintained a favorable fitness profile (85% ECOG 0-1; 66% "fit" status).

Renal function was relatively preserved, with only a small minority exhibiting moderate-to-severe impairment. Other comorbidities were predominantly hypertension (40%), dyslipidemia (21%) and diabetes mellitus (16%).

Fig.1 percentage of patients by line of therapy

Fig.2 percentage of patients by age

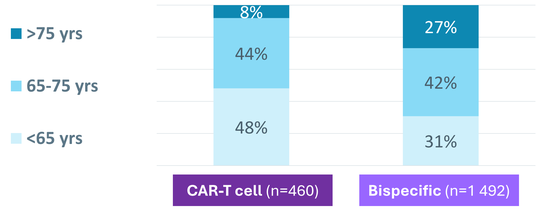
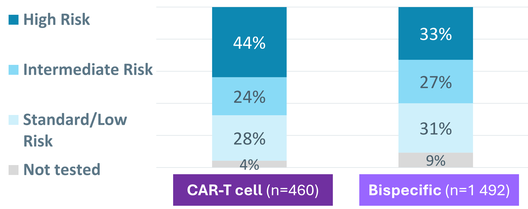


Fig.3 percentage of patients according to cytogenetic risk



In contrast, **the BsABs cohort** (n=1,482) was significantly older (median age 68.8 years) (**Fig. 2**) and primarily treated in later lines (81% in 4L/5L). (**Fig. 1**)

While ISS stage III prevalence was comparable to the CAR-T group, the BsABs population included more patients with comorbidities and a higher ECOG PS (≥2).

Direct comparison confirmed that CAR-T patients were significantly younger and treated earlier ($p < 0.05$ for all parameters).

No major disparities were observed between the three BsABs (BCMA vs. GPRC5D) or across EU5 regions, though a trend toward older age and increased cytogenetic risk was noted in Japan.

6% of "Post-CAR T" MM patients currently treated with a BsABs

Notably, 111 patients (6% of the total cohort) received a BsABs following CAR T-cell failure, predominantly in 4L (34%) and 5L (64%).

This "post-CAR T" subgroup maintained a relatively favorable performance status (78% ECOG 0-1) (**Fig. 4**) and a "fit" status in 54% of cases, suggesting that BsABs are a viable salvage strategy even in heavily pretreated, fit patients who have exhausted cellular therapies.

Fig.4 percentage of "post CAR-T" patients currently treated with a bispecific presenting with ECOG 0-1 (n=111)

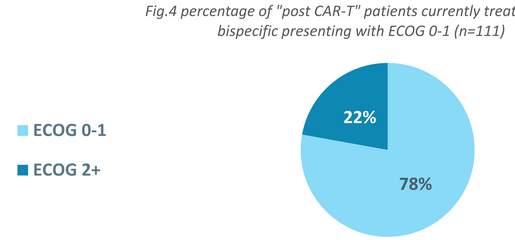
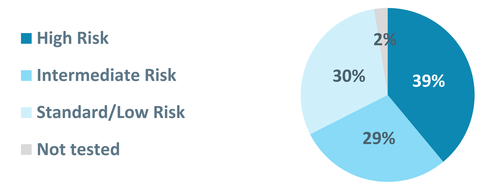


Fig.5 percentage of ISS stage (n=111)

Fig.6 percentage of cytogenetic risk (n=111)



CONCLUSIONS

These real-world data indicate that CAR T-cell therapy is preferentially allocated to younger, fitter patients in earlier lines, while BsABs serve as a versatile option for older populations and as a critical salvage strategy post-CAR T-cell exhaustion.

Age, fitness, and prior exposure remain the definitive drivers of therapeutic selection in global clinical practice.

Among patients eligible for both CAR T-cell therapy and BsABs, CAR T cells are generally used as the initial therapeutic approach, while BsABs are preferentially administered in the post-cellular immunotherapy relapse setting.

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