ACTUAL USE IN REAL-WORLD SETTING OF ANTI-BCMA CAR T CELLS IN RELAPSED/REFRACTORY MULTIPLE MYELOMA IN EU5 COUNTRIES AND IN THE US

HSD116

MAÏ C[1], BLIN N[2], ERTL S[3], SCHNEIDER E[4], LEBERRE M[4], YILMAZ M[4], VOUTE M[1]

[1]APLUSA REAL WORLD, Lyon, France, [2]Nantes University Hospital, Nantes, France, [3]APLUSA, London, UK, [4]APLUSA, Lyon, France

ISPOR Europe 2023 #ISPOREurope

BACKGROUND

Patients with multiple myeloma (MM) previously exposed to the 3 major classes of drugs (PIs, IMiDs and anti-CD38 monoclonal antibodies) often have less than 12 months median PFS in real-world studies, especially those who have become lenalidomide refractory or triple class refractory.

This subset of patients thus represents a clear unmet need and will be potentially more frequent in the future with the development of new triplets or quadruplets in first line setting, such as D-KRd (daratumumab, carfilzomib, lenalidomide and dexamethasone) in stem cell transplant (SCT) eligible patients or D-VRd (daratumumab, bortezomib, lenalidomide and dexamethasone) in SCT ineligible patients where lenalidomide +/- daratumumab will be used until disease progression.

Anti-BCMA autologous CAR-T cells, idecabtagene vicleucel (ide-cel) and ciltacabtagene autoleucel (cilta-cel), have been developed first in R/R MM in triple exposed patients and are associated with very promising overall response rate, complete response rate and median PFS as compared to alternative treatment options in the KarMMa (1,2) and CARTITUDE-1 (3,4) clinical trials.

Even if the majority of EU5 countries (France, Germany, Italy, Spain, UK) and the US now have access to these 2 drugs, their accessibility and availability remain limited with no established price in most countries and few data available in literature in real world setting regarding their current use and positioning in treatment algorithm.

OBJECTIVES

Describe patient characteristics, indications and dynamics of prescription of both ide-cel and cilta-cel in EU5 countries and in the US in the real-world setting.

METHODS

Anonymous patient charts were analyzed based on data reported by onco-haematologists making treatment decisions for patients with MM in EU5 countries: France (FR), Germany (DE), Spain (ES), Italy (IT), United Kingdom (UK) and in the United States of America (US) over the period between October 2022 and March 2023 (i.e Q4 2022 and Q1 2023).

RESULTS

A total of 205 unique patient charts were included in the analysis with 152 patients treated in the Q4 2022 and 53 in the Q1 2023. Among them, 87 received ide-cel and 65 cilta-cel during Q4 2022 and 32 received ide-cel and 21 cilta-cel in Q1 2023.

Overall, 119 unique patients received ide-cel during the study period in either 3rd (8 patients), 4th (58 patients) or 5th line of therapy (53 patients).

Treatment with cilta-cel was prescribed in 86 unique patients over the study period with 12 in 3rd line, 36 in 4th line and 38 in 5th line. When comparing typical lines of therapy for the 2 products between the EU and the US, no difference was noted for ide-cel (51% of patients received it in 4th line and 45% in 5th line + in the EU vs. 49% in 4th line and 35% in 5th line + in the US). Regarding cilta-cel, no patients received it in 3rd line in the EU, 42% in 4th line and 58% in 5th line + vs. 30% in 3rd line, 31% in 4th line and 39% in 5th line + in the US (Fig 1.)

Important differences exist between the countries regarding the number of patients treated with each product. In EU5, France and Germany have a largest number in the period with 52 for FR and 38 for DE. In the US, ide-cel and cilta-cel were mainly prescribed during Q4 2022 with 49 treatments for ide-cel (7 unique patients in 3rd line, 25 in 4th line and 17 in 5th line) and 45 treatments for cilta-cel (12 unique patients in 3rd line, 15 in 4th line and 18 in 5th line).

Analysis of characteristics of patients treated during Q4 2022 revealed a median age of 61.9 years in the ide-cel group and 64.5 years in the cilta-cel group.

		ABECMA® ide-cel	CARVYKTI® cilta-cel
EU5	Total= 58	n= 38	n = 20
	Line of therapy		
	3rd line	**4%**	
	4th line	**51%**	**42%**
	5th line or more	**45%**	**58%**
US	Total= 94	n= 49	n = 45
	Line of therapy		
	3rd line	**17%**	**30%**
	4th line	**49%**	**31%**
	5th line or more	**34%**	**39%**

Fig 1. Treatment line distribution of CAR-T patients (Source: APLUSA MMsyndiTrack™ - Q4.22 EU5 + US)

The majority of patients treated had an ECOG status of 0-1 (83% for ide-cel and 70% for cilta-cel), ISS stage was III (high) in the majority of cases (58% with ide-cel and 53% with cilta-cel) and cytogenetic profile was high risk in 35% with ide-cel and 28% with cilta-cel. (Fig 2.)

As expected, the vast majority of patients were considered fit (56% for ide-cel and 36% for cilta-cel) or intermediate fit (36% for ide-cel and 52% for cilta-cel). (Fig 3.)

At time of treatment initiation, the majority of patients had at least one comorbidity with mild renal failure (24% with ide-cel and 20% with cilta-cel), high blood pressure (37% with ide-cel and 39% with cilta-cel) and cardiac dysfunction (4% with ide-cel and 5% with cilta-cel).

Overall, no comorbidity was noted in 32% of patients receiving ide-cel and 17% of patients receiving cilta-cel vs.68% of patients receiving ide-cel and 83% of patients receiving cilta-cel had at least one comorbidity. (Fig 4.)

When comparing patient characteristics in this study versus those in clinical trials, median age appeared to be similar between our real-world series and KarMMa/CARTITUDE-1 trials (61 years in both trials).

Moreover, patients with high-risk cytogenetic features represented 35% in the KarMMA trial and 24% in the CARTITUDE-1 which was quite similar to the proportion in our study.

Renal function profile of patients appeared similar between the clinical trial participants and our real-world data; very few patients with severe renal failure (2%) defined by a creatinine clearance<30mL/min received CAR-T treatment in our study (vs. 0% in trials). Severity criteria based on extramedullary disease could not be assessed since this data was not collected in our patient charts.

	TOTAL CAR-T	ABECMA® ide-cel	CARVYKTI® cilta-cel
N size (in MM patients currently treated)	152	87	65
Age			
Mean	**63,0 yrs**	**61,9 yrs**	**64,5 yrs**
<65 yrs	**56%**	**61%**	**50%**
65-75 yrs	**37%**	**33%**	**42%**
>75 yrs	**7%**	**6%**	**8%**
ECOG score at initiation of current treatment			
0-1	**77%**	**83%**	**70%**
2+	**23%**	**17%**	**30%**
not tested		**0%**	
ISS stage at initiation of current treatment			
Stage I	**11%**	**12%**	**10%**
Stage II	**28%**	**24%**	**32%**
Stage III	**56%**	**58%**	**53%**
not tested	**5%**	**6%**	**5%**
Cytogenetic profile			
High risk	**32%**	**35%**	**28%**
Intermediate risk	**38%**	**33%**	**45%**
Standard/Low risk	**28%**	**29%**	**27%**
not tested	**2%**	**3%**	
Cytogenetic risks			
Del(13)	**4%**	**5%**	**3%**
Del1p	**9%**	**8%**	**12%**
Del 17p13	**16%**	**17%**	**14%**
t(4;14)	**12%**	**14%**	**9%**
t(11;14)	**14%**	**13%**	**14%**
t(14;16)	**10%**	**12%**	**7%**
t(14;20)	**5%**	**5%**	**6%**
Chromosome 13 deletion	**5%**	**6%**	**5%**
Gain/Amp(1q21)	**3%**	**1%**	**6%**
MYC translocation	**2%**	**1%**	**3%**
Tetrasomies	**1%**	**1%**	**2%**
TP53 mutation	**7%**	**5%**	**8%**
None of the above	**25%**	**26%**	**24%**
not tested	**1%**	**1%**	

Fig 2. CAR-T patient profile (Source: APLUSA MMsyndiTrack™ - Q4.22 EU5 + US)

	TOTAL CAR-T	ABECMA® ide-cel	CARVYKTI® cilta-cel
N size (in MM patients currently treated)	152	87	65
Frailty Status.			
Frail	**7%**	**7%**	**7%**
Intermediate	**43%**	**36%**	**52%**
Fit	**48%**	**56%**	**36%**
not tested	**2%**	**1%**	**5%**

Fig 3. CAR-T patient Frailty Status (Source: APLUSA MMsyndiTrack™ - Q4.22 EU5 + US)

	TOTAL CAR-T	ABECMA® ide-cel	CARVYKTI® cilta-cel
N size (in MM patients currently treated)	152	87	65
Comorbidities at initiation of current treatment			
None	**25%**	**32%**	**17%**
At least 1 comorbidity	**75%**	**68%**	**83%**
Mild renal insufficiency (ClCr = 50-90 mL/min)	**22%**	**24%**	**20%**
Moderate renal insufficiency (ClCr = 30-49 mL/min)	**11%**	**8%**	**14%**
Severe renal insufficiency (ClCr < 30 mL/min)	**2%**	**1%**	**3%**
Previous Deep Vein Thrombosis	**2%**	**1%**	**3%**
Grade I neuropathy	**13%**	**13%**	**14%**
Grade II neuropathy	**6%**	**5%**	**8%**
Grade III neuropathy	**1%**		**2%**
Grade IV neuropathy			
Hypertension	**38%**	**37%**	**39%**
Dyslipidaemia	**18%**	**13%**	**25%**
Cardiac dysfunction	**4%**	**4%**	**5%**
Diabetes	**14%**	**12%**	**18%**
Cancers	**4%**	**5%**	**3%**
Other comorbidities	**10%**	**14%**	**5%**

Fig 4. CAR-T patient comorbidities at treatment initiation (Source: APLUSA MMsyndiTrack™ - Q4.22 EU5 + US)

CONCLUSION

In this real-world analysis with patients treated recently with either ide-cel or cilta-cel for R/R MM, patient characteristics and number of prior lines of therapy were consistent with inclusion criteria for the phase II KarMMa and CARTITUDE-1 clinical trials, including median age, main comorbidities and high-risk cytogenetic features/ISS score.

There is however important heterogeneity in treatment availability among the European countries studied even if recent results of phase III trials (KarMMa-3 and CARTITUDE-4) might lead to broader reimbursement and improve treatment accessibility in most western countries.

REFERENCES

1. Hansen. ASCO 2022. Abstr 8042
2. Munshi. NEJM. 2021;384:705
3. Berdeja. Lancet. 2021;398:314
4. Martin. Lancet Haematol. 2022 Dec;9(12):e897-e905

CONTACT

- Christine MAÏ, MD, APLUSA REAL WORLD, Lyon, France. c.mai@aplusaresearch.com
- Nicolas BLIN, MD, Hematology Department, Nantes University Hospital, Nantes, France. nicolas.blin@chu-nantes.fr
- Marion VOUTE, APLUSA REAL WORLD, Lyon, France. m.voute@aplusaresearch.com
- Siegfried ERTL, APLUSA, London, UK. s.ertl@aplusaresearch.com

SCAN ME