Survival and drug treatment patterns in multiple myeloma patients exposed to an anti-CD38 monoclonal antibody, a proteasome inhibitor and an immunomodulatory imide drugs

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Background

A lack of real-world data on treatment outcomes for triple-class exposed multiple myeloma (MM) patients who have been treated with immunomodulatory imide drugs (IMiDs), proteasome inhibitors (PIs), and anti-CD38 monoclonal antibodies (mAbs) exists.

Objective

Further research is needed to understand the subsequent drug regimens used in triple-class exposed MM patients, including the interval until the next treatment and associated survival rates.

Table 1: Patient characteristics by new treatment line after the triple-exposed regimen of IMiD, PI and an anti-CD38 therapy

Characteristics at the start date of the first subsequent line of treatment after the triple-exposed regimen	**N = 65**
Age in years	
Mean (SD)	69 (8)
Sex, n (%)	
Male	36 (55%)
Female	29 (45%)
Hospital type, n (%)	
Peripheral (general) hospital	21 (32%)
Top clinical hospital	18 (28%)
Academic hospital	20 (31%)
Missing	6 (9%)
Characteristics at the start date of the second subsequent line of treatment after the triple-exposed regimen	**N = 19**
Age in years	
Mean (SD)	69 (10)
Sex, n (%)	
Male	9 (47%)
Female	10 (53%)
Hospital type, n (%)	
Peripheral (general) hospital	4 (21%)
Top clinical hospital	4 (21%)
Academic hospital	10 (53%)
Missing	1 (5%)

Methods

- This cohort study used data from the PHARMO Data Network between January 1, 2017 and December 31, 2020 to analyse MM patients who were triple-class exposed and received a subsequent treatment line during follow-up.
- Index dates were defined as the initiation dates of subsequent new treatment lines.
- The study's first endpoint was overall survival (OS), which was the time from the index date to death, end of data availability, or December 31, 2020. The second endpoint was time-to-next-treatment (TTNT), which was the time until the start of the next treatment line.
- Descriptive statistics were used to analyse patient characteristics and medication used in each new treatment line.

Results

- Among the 65 triple-class exposed MM patients who received subsequent treatment, 29% (n=19) received two additional and 6% (n=4) received three additional lines of treatment.
- In the first subsequent line of treatment, 23 different treatment combinations were used, with a mean patient age of 69 years and 45% females. The type of hospital where the new treatment was initiated was equally distributed among peripheral (32%), top-clinical (28%), and academic (31%) hospitals (Table 1).
- In the second subsequent line of treatment, 12 different treatment combinations were used, and the mean patient age was 69 years with 53% females. The treatment was more often initiated in academic hospitals (53% vs. 21% for other types) (Table 1).

Table 2: Patient outcomes by new treatment line after the triple-exposed regimen of IMiD, PI and an anti-CD38 therapy

Patient outcomes at the start date of the first subsequent line of treatment after the triple-exposed regimen	
Duration of overall survival, days	N = 65
Mean (SD)	242 (199)
Median (IQR)	217 (89-304)
Time to next treatment, days	N = 19
Mean (SD)	175 (144)
Median (IQR)	127 (79-200)
Combination therapies, n (%)	N = 65
Carfilzomib with dexamethason	11 (17%)
Cyclofosfamide with dexamethason	6 (10%)
Cyclofosfamide with lenalidomide	6 (9%)
Cyclofosfamide with pomalidomide	6 (9%)
Patient outcomes at the start date of the second subsequent line of treatment after the triple-exposed regimen	
Duration of overall survival, days	N = 19
Mean (SD)	121 (99)
Median (IQR)	78 (31-205)
Combination therapies, n (%)	N = 19
Cyclofosfamide with pomalidomide	4 (21%)
Cyclofosfamide with lenalidomide	3 (16%)
Carfilzomib with dexamethason	2 (11%)
Carfilzomib with lenalidomide	2 (11%)

- The most common first subsequent treatment line was combination therapy of carfilzomib with dexamethasone, while the second subsequent line mostly was cyclophosphamide with pomalidomide (Table 2).
- The median TTNT for the first subsequent treatment line was 127 (79-200) days, with an OS of 217 (89-304) days (Table 2).

Conclusion

The current study found no standard of care for triple-class exposed MM patients, with very heterogeneous treatments given. Despite improvements in outcomes, the limited survival benefit suggests a need for a novel treatment approach for MM patients.

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