Budget Impact of Selinexor Combination Regimens in Previously Treated Multiple Myeloma: An Oncology Network Perspective

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Introduction

- Selinexor, an oral exportin 1 (XPO1) inhibitor, prevents the XPO1-mediated export of several tumor suppressor proteins (TSPs), leading to the accumulation of TSPs in the nuclei of malignant cells, and blocks protein translation of oncogenes that drive cell proliferation, ultimately causing cell cycle arrest and apoptosis.[1]
- The National Comprehensive Cancer Network (NCCN) guidelines recommend selinexor–bortezomib–dexamethasone (XVd) as a preferred regimen and selinexor–carfilzomib–dexamethasone (XKd), selinexor–pomalidomide–dexamethasone (XPd), and selinexor–daratumumab–dexamethasone (XDd) as useful in certain circumstances in patients with relapsed/refractory MM (RRMM).[2]
- Patient prognosis worsens once progression occurs after exposure to an immunomodulatory drug, proteasome inhibitor, and anti-CD38 monoclonal antibody (mAb).[3-5]
- We sought to assess the budget impact of selinexor-based combination regimens post anti-CD38 mAb therapy in the 2nd-5th treatment line from an oncology network perspective.

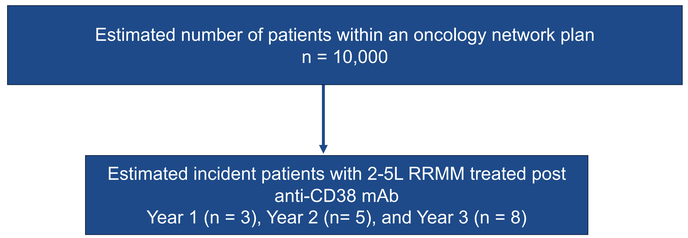
Methods

- A 3-year budget impact model was developed from a hypothetical US oncology network perspective.
- Scenarios with and without selinexor-based combinations and including 13 other NCCN guideline-supported non-selinexor combination regimens were compared.
- The model is based on incident patients with 2-5L RRMM post anti-CD38 mAb.
- Costs (2023 US dollars) attributable to primary treatment drug acquisition and administration, adverse events, routine monitoring and medical services, post-progression treatment and medical services, and terminal care were included.
- Annual and cumulative total costs and incremental cost per patient per month (PPPM) and per patient per year (PPPY) were assessed.
- One-way (deterministic) sensitivity analyses were performed to assess which model inputs have the greatest impact on the results.

Table 1: Market Share Assumption with Selinexor Uptake

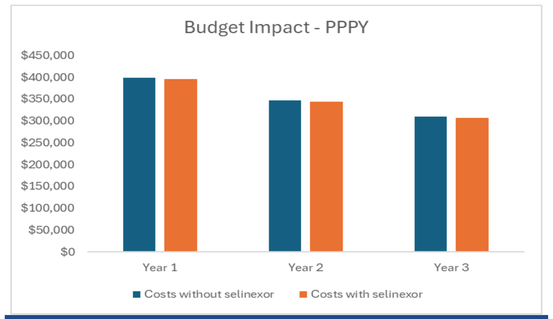
	Status Quo Scenario (Without Selinexor)			Projected Scenario (With Selinexor)		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
XVd	0.0%	0.00%	0.00%	3.15%	3.99%	4.94%
XKd	0.0%	0.00%	0.00%	1.93%	3.08%	4.66%
XPd	0.0%	0.00%	0.00%	1.28%	1.76%	2.47%
EPd	7.8%	7.81%	7.70%	7.22%	7.13%	6.65%
ERd	5.3%	4.80%	4.40%	4.85%	4.09%	3.33%
KRd	15.1%	12.80%	10.48%	14.63%	12.07%	9.50%
KPd	12.2%	11.50%	10.48%	11.69%	10.74%	9.50%
IRd	18.3%	16.60%	14.54%	17.77%	15.87%	13.59%
IPd	5.8%	5.30%	4.85%	5.23%	4.66%	3.90%
ASCT	5.0%	5.00%	5.00%	5.00%	5.00%	5.00%
Teclistamab	0.9%	1.71%	3.71%	0.29%	0.95%	2.66%
Talquetamab	1.0%	1.43%	1.90%	0.57%	0.67%	0.86%
Elranatamab	3.7%	5.51%	7.32%	3.14%	4.75%	6.37%
Ciltacabtagene autoleucel	3.7%	5.51%	7.32%	3.14%	4.75%	6.37%
Idecabtagene vicleucel	3.7%	5.51%	7.32%	3.14%	4.75%	6.37%
CyBorD	17.5%	16.53%	15.01%	17.01%	15.77%	13.87%

Figure 1. Attrition Diagram - Patient Population



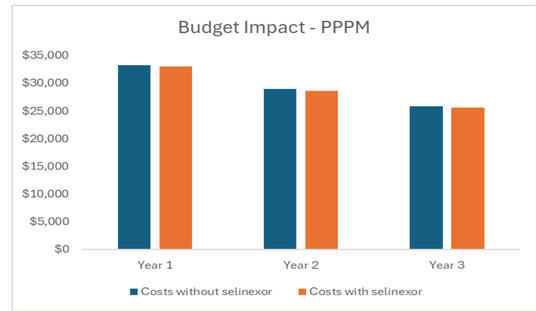
Results

Figure 2: Budget Impact: Per Patient Per Year (PPPY)



	Year 1	Year 2	Year 3
Costs without selinexor	$398,816	$346,933	$309,785
Costs with selinexor	$395,460	$343,615	$306,701
Budget impact of selinexor (PPPY)	**-$3,356**	**-$3,318**	**-$3,084**

Figure 3: Budget Impact: Per Patient Per Month (PPPM)



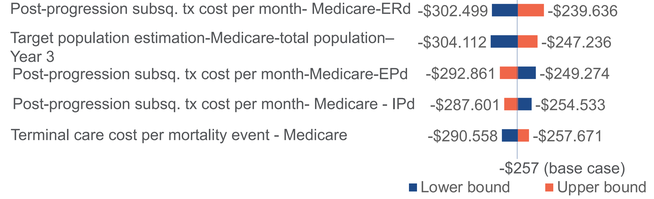
	Year 1	Year 2	Year 3
Costs without selinexor	$33,235	$28,911	$25,815
Costs with selinexor	$32,955	$28,635	$25,558
Budget impact of selinexor (PPPM)	**-$280**	**-$276**	**-$257**

- The 3-year costs for PPPY and PPPM comparing scenarios were -$3,084 (**Figure 2**) and -$257 (**Figure 3**), respectively.

Table 2. Total Budget Impact by Cost Category

	Year 1	Year 2	Year 3
Primary treatment: Drug and Administration	$802	-$5,742	-$7,062
Primary Treatment: AE Management	-$394	-$564	-$717
Primary Treatment: Monitoring	$0	$0	$0
Pre-progression: Medical Services	$60	$33	$47
Post-progression: Subsequent Treatment	-$10,282	-$13,596	-$23,002
Post-progression: Medical Services	-$77	-$102	-$173
Terminal Care	$1,278	$2,939	$7,155
TOTAL	**-$8,614**	**-$17,033**	**-$23,751**

Figure 4. One-Way Sensitivity Analysis: Tornado Diagram.



Limitations

- Clinical data and medical resource utilization data were based on external literature sources.
- Cost of AEs was calculated based on their incidence rate, a subset of all prevalent patients.
- The model relied on assumptions for future market share projections.

Conclusions

- The implementation of selinexor-based combination regimens for treatment in patients with RRMM previously treated with an anti-CD38 mAb in the 2nd to 5th line over 3 years was associated with cost-savings.
- This cost-savings is likely due to the delay and cost offset of more costly treatment options such as bispecific and CAR-T therapies.
- Future research is warranted as the increased use of newer therapies such as bispecific and CAR-T therapies in earlier lines will change the economic paradigm in RRMM.

NCODA 2024 Spring Forum, April 3 – 5, 2024, Dallas, Texas, USA

References: 1. XPOVIO®. Prescribing information. Karyopharm Therapeutics Inc. **2.** National Comprehensive Cancer Network. Multiple Myeloma (Version 2.2024). Accessed February 14, 2024. **3.** Gandhi UH, et al. *Leukemia*. 2019; 33(9): 2266-2275. **4.** Mateos MV, et al. *Leukemia*. 2022; 36:1371–1376. **5.** Nooka AK, et al. *Cancer*. 2019;125(17):2991-3000.

Disclosures: This study was funded by Karyopharm Therapeutics Inc.

Abbreviations: AE, adverse event; ASCT, autologous stem cell transplant; CyBorD, Cyclophosphamide + bortezomib + dexamethasone; EPd, Elotuzumab + Pomalidomide + Dexamethasone; ERd, Elotuzumab + Lenalidomide + Dexamethasone; IRd, Ixazomib + Lenalidomide + Dexamethasone; IPd, Ixazomib + Poalidomide + Dexamethasone; KPd, Carfilzomib + Pomalidomide + Dexamethasone; KRd, Carfilzomib + Lenalidomide + Dexamethasone; PPPM, per patient per month; PPPY, per patient per year; RRMM, relapsed/refractory multiple myeloma; XDd, selinexor + daratumumab + dexamethasone; XKd, selinexor + carfilzomib + dexamethasone; XPd, selinexor + pomalidomide + dexamethasone; XVd, selinexor + bortezomib + dexamethasone.