

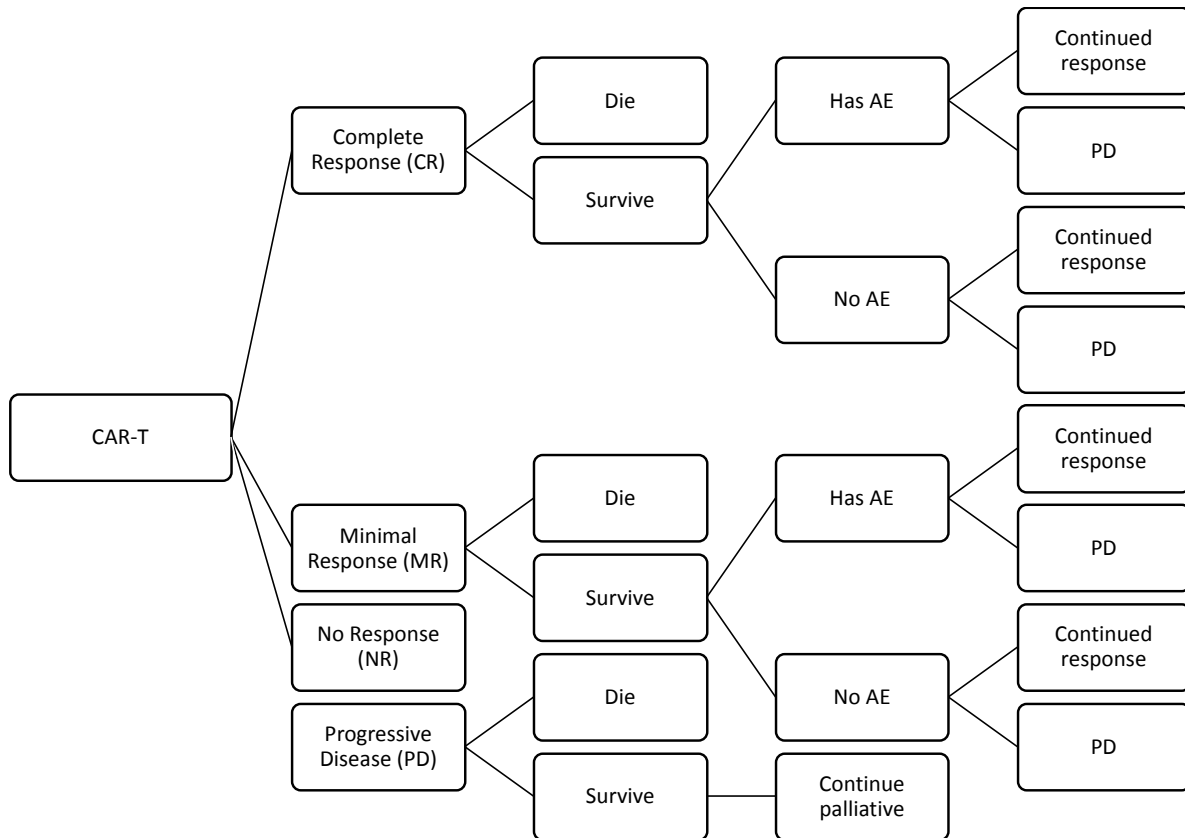
Supplement: Cost-Effectiveness Analysis of CAR T-Cell Therapies vs. Antibody Drug Conjugates for Patients with Advanced Multiple Myeloma.

Authors:

Model Details

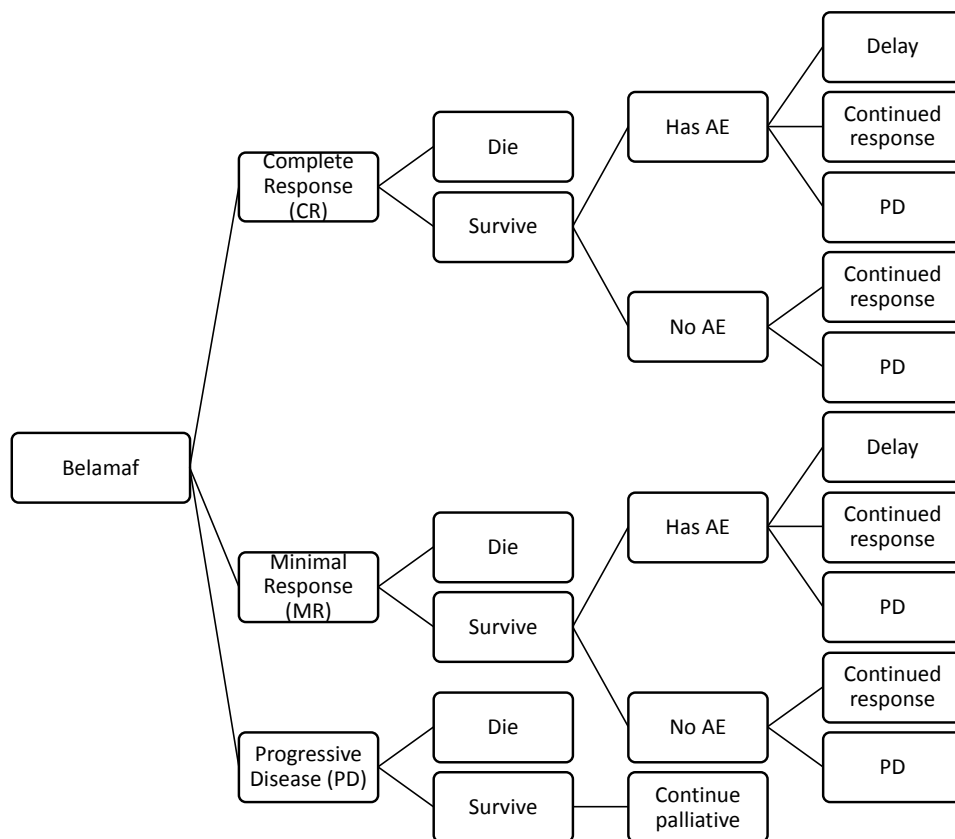
Our Markov model draws on trial data randomly sampling from the PFS and OS curves to generate both a duration in treatment and survival estimates at the patient-level ensuring our population-level curves matched the trials. We define responsiveness to treatment based on the PFS months from the trials. Simulated patients who become “unresponsive,” according to their initial category, are moved to the progressive disease state. Figure x shows an overview of the model for patients simulated to received one of the CART therapies and xx shows for patients simulated to receive belamaf.

Supplemental Figure 1. Overview of CAR-T Therapy Model



Notes: NR patients move to PD in the next cycle. For ease of presentation, we have collapsed adverse events (AE) into one category, but in the model, we break out patients simulated to have cytokine release syndrome (CRS) and neurotoxicities separately from all other Grade 3 or 4 AEs.

Supplemental Figure 2. Overview of Belamaf Model



Notes: NR patients move to PD in the next cycle (not shown here, but included). In this arm, patients with an adverse event could pause treatment for a cycle.

Cost Details

In the tables below, we provide the details of the per cycle or per treatment costs for the 3 arms. We converted monthly costs for treating Grade 3 or 4 severe adverse events from a previous study.¹⁴ However, for the costs of treating cytokine release syndrome and neurotoxicities we relied on a small study which reported hospitalization and treatment costs for 3 patients, who had an median treatment cost of \$80,904.^{16,23}

Belamaf	Costs (in 2020\$)	% of Treated that Incur
Drug and Administration (per cycle)	\$23,900	
Severe adverse events (per case with severe AE)	\$1,841	
Monthly costs among those with:		
Pneumonia	\$16,489	6%
Asthenia/fatigue	\$9,365	2%
Hypocalcemia	\$1,282	21%
Lymphopenia	\$184	13%
Neutropenia	\$184	11%
Thrombocytopenia	\$184	22%

Hypercalcemia	\$184	7%
Keratopy, blurred vision	\$1868	17%

Ide-cel

Drug and Administration (per patient)	\$442,705	
Lymphodepleting chemotherapy	\$12,981	
		% of Treated that
Severe adverse events (per case with severe AE)		Incur
Cytokine Release Syndrome (CRS) /NE	\$80,904	0.08
Without CRS/NE, monthly costs among those with:		
Febrile neutropenia	\$14,720	16%
Diarrhea	\$10,809	2%
Asthenia/fatigue	\$9,365	2%
Hypocalcemia	\$1,282	8%
Anemia	\$1,078	60%
Hyponatremia	\$184	5%
Hypophosphatemia	\$184	16%
Leukopenia	\$184	39%
Lymphopenia	\$184	27%
Neutropenia	\$184	89%
Thrombocytopenia	\$184	52%

Cilta-cel

Drug and Administration (per patient)	\$465,000	
Lymphodepleting chemotherapy	\$12,981	
		% of Treated that
Severe adverse events (per case with severe AE)		Incur
Cytokine Release Syndrome (CRS) /NE	\$80,904	0.13
Without CRS/NE, monthly costs among those with:		
Nausea	\$13,247	1%
Diarrhea	\$10,809	1%
Asthenia/fatigue	\$9,365	5%
Hypocalcemia	\$1,282	3%
Anemia	\$1,078	68%
Hyponatremia	\$184	4%
Hypophosphatemia	\$184	7%
Leukopenia	\$184	61%
Lymphopenia	\$184	50%
Neutropenia	\$184	95%
Thrombocytopenia	\$184	60%

