Poster Number # HSD69

Localizing a sequencing model using patient-level data to optimize outcomes in the first line of treatment for multiple myeloma in Greece

Timoleon Konstantinos Christodoulou[1], Christina Golna[2], Pavlos Golnas[2], Danai Evgenia Kourmpani Eleni[1], Kyriakos Souliotis[2,3]

[1] Johnson & Johnson Innovative Medicine, Greece;
[2] Health Policy Institute, Maroussi, Greece;
[3] Department of Social and Education Policy, University of Peloponnese, Greece

Key take away

The addition of daratumumab in treatment combinations in the 1L of treatment for both TE and TIE MM patients substantially prolongs time spent in 1L and OS.

Conclusions

Efficacy and time on treatment in 1L are the strongest drivers of improved long-term outcomes in patients with MM.

Our analysis demonstrates the importance of selecting the most-effective treatments for use upfront, to ensure optimal patient outcomes.

Estimates of OS used in this model are a proxy since the model does not estimate time from end of fourth line to death. The model stops at fourth line as studies have shown that only a small proportion of patients receive a fifth line therapy.[5]

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Poster

Introduction

Multiple Myeloma (MM) is characterized by the proliferation of malignant plasma cells within the bone marrow.[1] Multiple myeloma (MM) is rare, accounting for about 1.8% of all new cancer cases, yet it is the second most common blood cancer.[2] In 2022, an estimated 188,000 new cases and 121,000 deaths occurred worldwide, with higher incidences in men and older adults.[3] Incidence and mortality rates are expected to increase significantly by 2045.[3] The goal of treatment is to delay disease progression, thus prolonging survival and maintaining patient quality of life.[4] As more treatment combinations are being marketed for MM across treatment lines, it is important to ensure their sequencing will optimize treatment outcomes.

Objective

We aimed to evaluate the impact of optimizing treatment sequences in transplant-eligible (TE) and transplant-ineligible (TIE) multiple myeloma (MM) patients through a health-state transition sequencing model adapted to the Greek local clinical landscape.

Methods

- The sequencing model simulates and compares expected survival outcomes between treatment sequences in the TE and TIE setting.
- Newly diagnosed patients start a first line treatment and at relapse the patient transitions to a subsequent treatment line, up to a maximum of four treatment lines.
- Patients can transition directly to the death state from any treatment line.
- Clinical efficacy data considers randomized clinical trial data and indirect evidence (network meta-analyses and matched adjusted indirect comparisons).
- Treatment sequences were defined and validated based on Greek data to reflect current local clinical practice.
- Model outputs include average overall survival (OS) and average progression free survival (PFS) per line of treatment for each treatment sequence.

Results

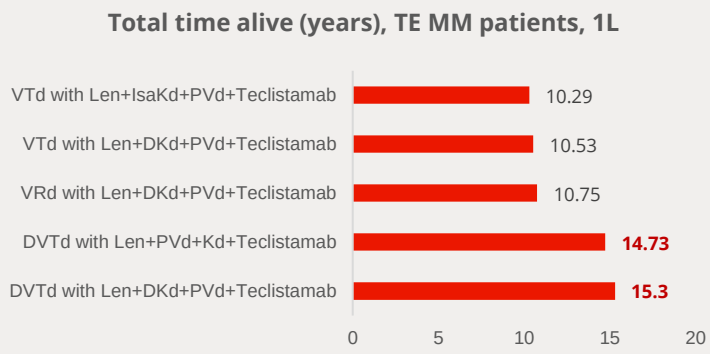
In both settings (1L TE and 1L TIE), sequences with daratumumab in frontline showed the longest average overall survival for patients. Efficacy in frontline was the driver of the extended survival outcomes.

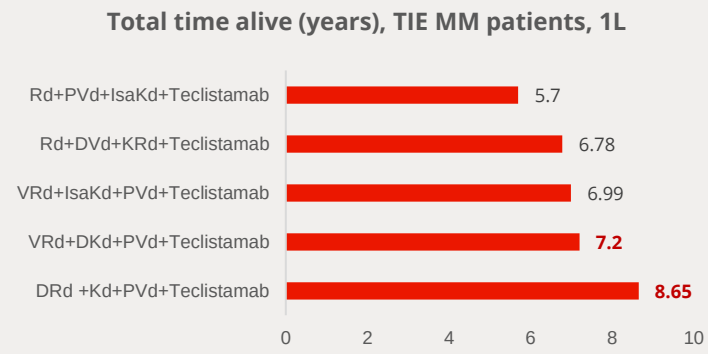
1L TE MM patients

	Time spent in line (years)
First line	
DVTd with Len+PVd+Kd+Teclistamab	13.42
DVTd with Len+DKd+PVd+Teclistamab	13.42
VRd with Len+DKd+PVd+Teclistamab	8.40
VTd with Len+DKd+PVd+Teclistamab	8.17
VTd with Len+IsaKd+PVd+Teclistamab	8.17
Second line	
VRd with Len+DKd+PVd+Teclistamab	1.20
VTd with Len+DKd+PVd+Teclistamab	1.20
DVTd with Len+DKd+PVd+Teclistamab	1.00
VTd with Len+IsaKd+PVd+Teclistamab	0.95
DVTd with Len+PVd+Kd+Teclistamab	0.58
Third line	
VTd with Len+DKd+PVd+Teclistamab	0.62
VTd with Len+IsaKd+PVd+Teclistamab	0.62
VRd with Len+DKd+PVd+Teclistamab	0.61
DVTd with Len+DKd+PVd+Teclistamab	0.48
DVTd with Len+PVd+Kd+Teclistamab	0.40
Fourth line	
VTd with Len+IsaKd+PVd+Teclistamab	0.55
VTd with Len+DKd+PVd+Teclistamab	0.54
VRd with Len+DKd+PVd+Teclistamab	0.54
DVTd with Len+DKd+PVd+Teclistamab	0.40
DVTd with Len+PVd+Kd+Teclistamab	0.34
Total time alive	
DVTd with Len+DKd+PVd+Teclistamab	**15.30**
DVTd with Len+PVd+Kd+Teclistamab	**14.73**
VRd with Len+DKd+PVd+Teclistamab	10.75
VTd with Len+DKd+PVd+Teclistamab	10.53
VTd with Len+IsaKd+PVd+Teclistamab	10.29

1L TIE MM patients

	Time spent in line (years)
First line	
DRd +Kd+PVd+Teclistamab	7.48
VRd+DKd+PVd+Teclistamab	5.36
VRd+IsaKd+PVd+Teclistamab	5.36
Rd+PVd+IsaKd+Teclistamab	4.13
RD+DVd+KRd+Teclistamab	4.13
Second line	
VRd+DKd+PVd+Teclistamab	1.03
Rd+DVd+KRd+Teclistamab	0.92
VRd+IsaKd+PVd+Teclistamab	0.81
Rd+PVd+IsaKd+Teclistamab	0.60
DRd +Kd+PVd+Teclistamab	0.47
Third line	
Rd+DVd+KRd+Teclistamab	0.70
Rd+PVd+IsaKd+Teclistamab	0.46
VRd+DKd+PVd+Teclistamab	0.45
VRd+IsaKd+PVd+Teclistamab	0.45
DRd +Kd+PVd+Teclistamab	0.35
Fourth line	
Rd+DVd+KRd+Teclistamab	0.81
Rd+PVd+IsaKd+Teclistamab	0.52
VRd+IsaKd+PVd+Teclistamab	0.37
VRd+DKd+PVd+Teclistamab	0.37
DRd +Kd+PVd+Teclistamab	0.35
Total time alive	
DRd +Kd+PVd+Teclistamab	**8.65**
VRd+DKd+PVd+Teclistamab	**7.20**
VRd+IsaKd+PVd+Teclistamab	6.99
Rd+DVd+KRd+Teclistamab	6.78
Rd+PVd+IsaKd+Teclistamab	5.70





Abbreviations: 1L – first line, DKd - daratumumab + carfilzomib + dexamethasone, DKd - Daratumumab + carfilzomib + dexamethasone, DRd – daratumumab + lenalidomide + dexamethasone, DVTd – daratumumab + bortezomib + thalidomide + dexamethasone, Isa – isatuximab, Kd – carfilzomib + dexamethasone, Len – lenalidomide, OS – overall survival, PVd – pomalidomide + bortezomib + dexamethasone, Rd – lenalidomide + dexamethasone, TE – transplant eligible, TIE – transplant ineligible, VRd - bortezomib + lenalidomide + dexamethasone.

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Disclosures

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Multiple Myeloma