MM-290

# Physician perspectives regarding conventional marrow testing and MRD assessments to guide decision-making in myeloma

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## Summary

This survey of primarily community-based multiple myeloma (MM) physicians (N=75) in the United States (US) investigated attitudes towards various testing modalities and how these tests modify treatment selection

Physicians reported ordering conventional karyotyping or fluorescence in situ hybridization (FISH) testing for almost 80% of their patients, as recommended in international guidelines, and measurable residual disease (MRD) testing in over 40% of patients, which guided management in a third of such cases

These findings provide insight into the evolving complexities of treatment selection in MM and highlight the importance of establishing clear pathways to guide decision-making, particularly around MRD

Physicians reported a preference for targeted treatments over standard treatments

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## Background

- Decision-making in MM is complex as there are numerous treatment options available across multiple lines of therapy
  - New drugs, such as CAR-T cell therapy and bispecific antibodies, and their associated toxicities, as well as novel targets including GPRC5D and XPO1, are increasingly complicating therapy selection[1]
  - The sequencing and combination of therapies, while factoring in patient prognosis and preferences, adds to the difficulty of selecting the optimal treatment.
- Physicians may use different testing procedures to help guide decision-making; for example, a recent survey suggested many MM physicians are interested in MRD-guided decision making.[2]
- We conducted an online survey to investigate physicians' attitudes towards:
  - Various testing modalities and how these tests modify treatment selection
  - Selection of new and targeted treatments
  - Physician-patient disease education.

## Methods

- An online quantitative survey was fielded between December 2022 and April 2023 to US board-certified hematologists and oncologists (N=75) who specialize in the treatment of MM.
- Physician inclusion and exclusion criteria are provided in **Figure 1**.
- Descriptive statistics assessed physician demographics, physician practice characteristics, testing procedures, and attitudinal survey items.

**Figure 1. Physician inclusion and exclusion criteria.**

| Inclusion criteria | Exclusion criteria |
|---|---|
| • Agree to informed consent<br>• Primary specialty of hematology and/or oncology (board-certified in ≥1)<br>• Based in the US<br>• ≥50% involvement in clinical practice<br>• Current involvement in the management of ≥30 patients with hematologic malignancies, including ≥10 patients with MM | • Employment or employment of immediate family, by a pharmaceutical company, healthcare manufacturer, advisory panel, government health care authority (including veterans affairs), or market research company, other than for clinical trials<br>• Current residence in the state of Vermont<br>• <2 years, or >30 years, of experience as an independent provider |

## Physician demographics

- Physician demographics are presented in **Table 1**.

**Table 1. Physician demographics.**

| Variable<br>Response | N=75 |
|---|---|
| **Gender, n (%)** | |
| Male | 57 (76.0) |
| Female | 15 (20.0) |
| Decline to state | 3 (4.0) |
| **Age in years, mean (SD)** | 51.7 (9.3) |
| **Location of residence and/or practice (population size), n (%)** | |
| Major metropolitan area, population >500,000 | 32 (42.7) |
| Urban area, population between 100,000 and 500,000 | 14 (18.7) |
| Suburb of a large city, population >100,000 | 20 (26.7) |
| Small city, population between 30,000 and 100,000 | 5 (6.7) |
| Rural or small town, population <30,000 | 4 (5.3) |
| **Location of residence and/or practice (region of US), n (%)** | |
| Northeast | 23 (30.7) |
| Midwest | 13 (17.3) |
| South | 25 (33.3) |
| West | 14 (18.7) |

SD, standard deviation.

## Physician practice characteristics

- Most physicians practiced in a community setting (69.3%), with a substantial number of patients with MM under their care (mean [SD]: 60.5 [57.1]) (**Table 2**).

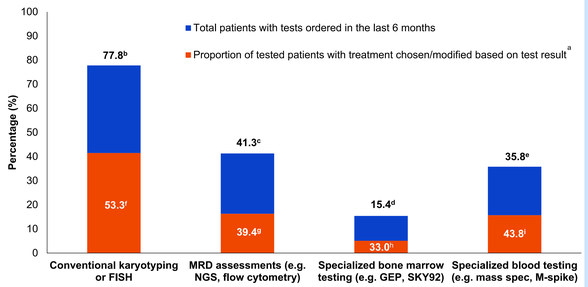
**Table 2. Physician practice characteristics.**

| Variable<br>Response | N=75 |
|---|---|
| **Years in practice, mean (SD)** | 16.2 (7.3) |
| **Percentage of time in direct clinical practice, mean (SD)** | 92.6 (8.1) |
| **Primary practice setting, n (%)** | |
| Community | 52 (69.3) |
| Academic | 23 (30.7) |
| **Number of personally managed patients with hematologic malignancies, mean (SD)** | 247.8 (188.2) |
| **Number of personally managed patients with MM, mean (SD)** | 60.5 (57.1) |
| **Percentage of patients at each treatment stage, mean (SD)** | |
| Newly diagnosed or on first-line therapy | 39.4 (14.8) |
| Early relapse/refractory setting (1–3 prior lines) | 35.2 (10.0) |
| Late relapsed/refractory setting (4+ prior lines) | 25.4 (12.8) |

## Testing procedures

- Physicians routinely ordered bone marrow karyotyping or FISH for the majority of their patients (mean [SD]: 77.8% [33.0]), while they ordered MRD assessments for a minority of their patients (mean [SD]: 41.3% [36.9]) (**Figure 2**)
  - Among cases where such tests were ordered, physicians chose or modified treatment based on the results of karyotyping/FISH half the time (mean [SD]: 53.3% [37.5]), and chose or modified treatment based on the results of MRD assessments over a third of the time (mean [SD]: 39.4% [32.5]).
- Other specialized bone marrow testing, such as gene expression profiling (GEP), were less commonly utilized (**Figure 2**).

**Figure 2. Testing procedures.**

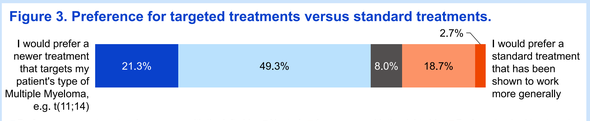



[a]Survey items about each type of test were asked only if the physician previously reported using that type of test in the past 6 months. Median [IQR]: [b]100.0 [50.0–100.0]; [c]30.0 [10.0–80.0]; [d]0.0 [0.0–25.0]; [e]15.0 [0.0–80.0]; [f]50.0 [22.5–100.0]; [g]30.0 [10.0–60.0]; [h]25.0 [10.0–50.0]; [i]30.0 [15.0–75.0].
Mass spec, mass spectrometry; M-spike, monoclonal spike; NGS, next-generation sequencing; IQR, interquartile range.

## Attitudinal survey items

- Physicians reported a preference for targeted treatments (mean [SD]: 2.3 [1.1]; **Figure 3**).

**Figure 3. Preference for targeted treatments versus standard treatments.**

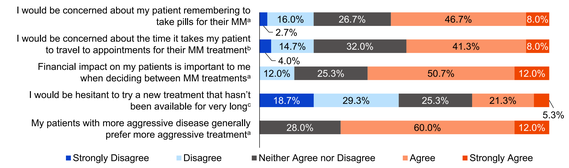



Median 1–5 Likert-type scale score [IQR]: 2.0 [2.0–3.0]; where 1 = prefers newer treatment, and 5 = prefers standard treatment.

## Attitudinal survey items (continued)

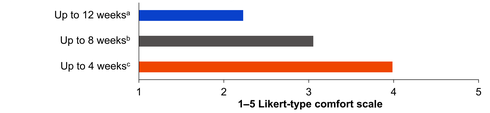
- Concerns physicians have about starting a new MM treatment and the degree of comfort they have waiting for newer treatments are shown in **Figure 4** and **Figure 5**, respectively.

**Figure 4. Concerns with starting a "new" treatment.**




Median 1–5 Likert-type agreement scale score [IQR]: [a]4.0 [3.0–4.0]; [b]3.0 [3.0–4.0]; [c]3.0 [2.0–4.0]; where 1 = strongly disagree, and 5 = strongly agree.

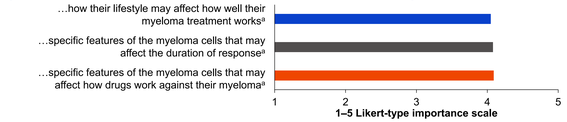
**Figure 5. Comfort with waiting specific amounts of time for CAR-T or an industry-sponsored trial (relapsed/refractory patients for whom this is the best option).**




Median 1–5 Likert-type comfort scale score [IQR]: [a]2.0 [1.0–3.0]; [b]3.0 [2.0–4.0]; [c]4.0 [4.0–4.0]; where 1 = least comfortable, and 5 = most comfortable. CAR-T, CAR T-cell therapy.

- Physicians reported it is important to educate patients about how specific features of their MM may affect response rates (mean [SD]: 4.1 [0.7]) and time to progression (mean [SD]: 4.1 [0.8]) (**Figure 6**).

**Figure 6. Importance of educating patients about the impacts of their lifestyle and specific features of their myeloma cells on their treatment response.**




[a]Median 1–5 Likert-type importance scale score [IQR]: 4.0 [4.0–5.0]; where 1 = least important, and 5 = most important.

## Limitations

- As with any self-reported survey, recall biases and false reporting (whether intentional or unintentional) may have introduced measurement error.
- Our findings may not be generalizable to the overall MM population in the US; physicians were recruited through convenience sampling via online physician respondent panels.

## Conclusions

- Conventional karyotyping or FISH testing was ordered for most patients of the surveyed physicians primarily based in a community setting; these test results were used over half the time to guide treatment choices.
- MRD assessments were ordered in over a third of cases, indicating that MRD status is a factor in decision-making for a minority of physicians' patients with MM, similar to previous results from a survey of primarily academic-based clinicians.[1]
- Physicians reported a preference for targeted treatments over standard treatments.
- Physicians reported the importance of educating patients about how their lifestyle and specific features of their MM (i.e., genetics) may affect response rates and time to progression.
- These findings provide insight into the evolving complexities of treatment selection in MM and highlight the importance of establishing clear pathways to guide decision-making.

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**References**

1. Derman BA, et al. Blood Cancer J 2022;12:108.
2. CancerMPact®. Cerner Enviza, an Oracle Company 2021.

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**Disclosures**

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