



## The 65th ASH Annual Meeting Abstracts

## POSTER ABSTRACTS

## 652.MULTIPLE MYELOMA: CLINICAL AND EPIDEMIOLOGICAL

**The Application of Gait Speed and Grip Strength As a Frailty Screening Tool in Elderly Patients with Multiple Myeloma**Jiangbo Zhang<sup>1</sup>, Hua Xue<sup>2</sup>, Rong Fu<sup>3</sup>, Jing Wang<sup>1</sup>, Songying Zhao<sup>1</sup>, Huimei Guo<sup>1</sup>, Jia Liu<sup>1</sup>, Jianmei Xu<sup>1</sup>, Yao Liu, PhD MD<sup>4</sup><sup>1</sup> Affiliated Hospital of Hebei University, Baoding, China<sup>2</sup> Affiliated Hospital of Hebei University, Baoding City, Hebei Province, China<sup>3</sup> Tianjin Medical University General Hospital, Tianjin, China<sup>4</sup> Department of Hematology-Oncology, Chongqing University Cancer Hospital, Chongqing, China

## Introduction

Gait speed and grip strength are easily obtainable objective measures of physical function, they are important diagnostic parameters for sarcopenia, and also representative geriatric index of frailty and function that performed well, even compared with more comprehensive frailty assessments. Brief screening tests for frailty that can easily fit into the clinic workflow and predict important clinical outcomes are needed. Geriatric assessment (GA) of the International Myeloma Working Group (IMWG) applying to the newly diagnosed MM, because of its subjectivity and relative complexity, obstructing widespread development in clinical. The purpose of our analysis was to examine the potential value of gait speed or grip strength as a screening test for frailty in elderly patients with MM. At the same time, efforts are ongoing to explore the significance of dynamic evaluation .

## Methods

All 47 patients aged 60 years and older who presented for an initial consultation in our hospital were eligible for participation. Gait speed and grip strength and IMWG-GA were measured in all consented patients. Gait speed was obtained using the National Institutes of Health 4-m gait speed test, while grip strength was measured using a Hand Dynamometer. And the differences in SASP (Senescent Associated Secretory Phenotype) between different gait speed groups were compared.

## Results

All enrolled patients underwent dynamic evaluation and completed 124 frequency IMWG-GA, 131 gait speed and 129 grip strength tests. IMWG-GA: fit group: 43.5%(54/124), intermediate fit: 7.3%(9/124), frail: 49.2%(61/124). Gait speed <0.8m/s: 53.4%(70/131), ≥0.8m/s:46.6%(61/131). Grip strength: Male group: <28kg group 51.5%(50/97), ≥28kg group 48.5%(47/97); Female group: <18kg group 59.4%(19/32), ≥18kg group 40.6%(13/32).

Complete and analyzable data from all cases showed high consistency between gait speed and IMWG-GA (AUC=0.83), the "4-m gait speed test" can be used as an effective predictor for frailty. And between grip strength and IMWG-GA (AUC=0.68), "Grip strength" can also be used as an effective predictor for frailty, but its performance seems to be slightly inferior to "4-m gait speed test". The combination of "4-m gait speed test" and "grip strength" can serve as an effective predictor for IMWG-GA(AUC=0.74), and its seems to be superior to using "4-m gait speed test" or "grip strength" alone.

The incidence rate of sarcopenia is 49%(23/47). We further analyzed and found that, the differential expression of IL-6 (38.51±17.59 vs 8.09±3.97 pg/ml, p<0.05) and IFN-γ(2.0±0.49 vs 0.86±0.14 pg/ml, p<0.05) in SASP between the two groups with a gait speed of <0.8m/s and ≥0.8m/s. While there was no statistically significant difference in IL-8 and IL-1b between the two groups.

We conducted a dynamic evaluation of IMWG-GA and gait speed and grip strength. As the number of treatment courses increases and the treatment effect becomes apparent, the proportion of patients with frail decreases and the proportion of patients with improved gait increases, while the difference in grip strength changes is not significant(Figure1-3).

## Conclusions

In summary, gait speed and grip strength have strong diagnostic value in evaluating elderly frailty MM, and dynamic monitoring is simple and feasible in clinical practice. The relationship between sarcopenia and frailty, as well as the role of dynamic assessment, still needs further exploration.

**Disclosures** No relevant conflicts of interest to declare.

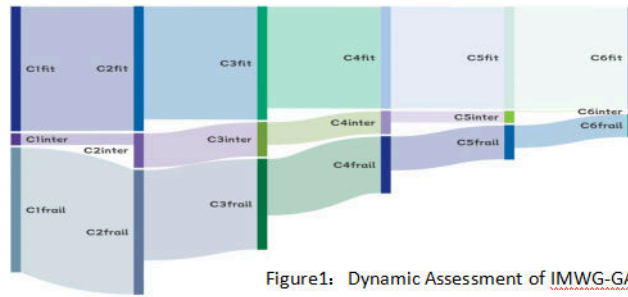


Figure1: Dynamic Assessment of IMWG-GA

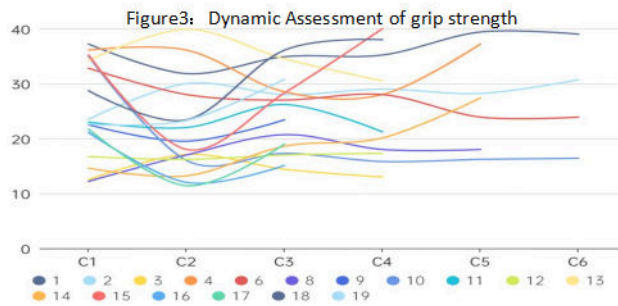
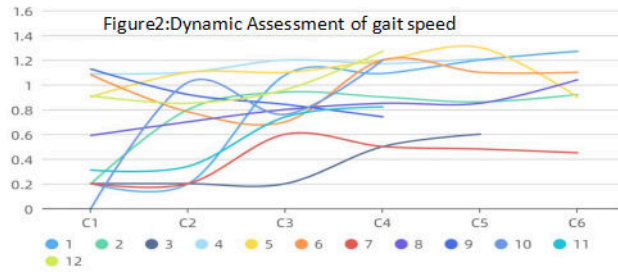


Figure 1

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