



Nursing Home Residents with Advanced CKD or Dementia Have Higher Malnutrition Risk

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Introduction

The prevalence of chronic kidney disease (CKD) in Taiwan is worldwide top, especially the elderly population. Besides, the percentage of elderly people in Taiwan is over 7% since 2000 and still increases in decade. Malnutrition is existed in the nursing home residents, and it is preventable.

Geriatric Nutritional Risk Index (GNRI) is a simple malnutrition screening tool for elderly people and CKD patients.

Objective

To assess the nutrition status by Geriatric Nutritional Risk Index (GNRI) scores among nursing home residents.

Methods

One hundred and eleven elderly living in nursing home were recruited in this study.

Scores of GNRI and information of age, gender, medical history, anthropometric, and liver function markers (alanine aminotransferase and aspartate aminotransferase) and data of glomerular filtration rate (eGFR) were collected. The medical history included presence of diabetes, stroke and dementia. The eGFR was used to determined the stage of CKD. Subject had eGFR less than 60 mL/min/1.73m² was considered as advanced CKD.

The GNRI score was calculated by the following equation:
$$GNRI = 1.489 \times \text{serum albumin g/L} + 41.7 \times \frac{\text{actual body weight}}{\text{ideal body weight}}$$

All subjects were divided into 3 groups by scores of GNRI: Group 1: GNRI < 92, severe to moderate malnutrition; Group 2: GNRI 92-98, mild malnutrition; Group 3: GNRI > 98, no malnutrition risk. Statistics values were mean ± SD. We used one-way ANOVA and chi-square test to comparison the results among 3 groups. *P* < 0.05 was considered statistically significant.

Results and Discussion

Only eighteen subjects had GNRI > 98, but sixty-eight subjects had GNRI < 92 (table 1). Subjects with dementia or worse renal function had significantly lower GNRI scores. All subjects of stage 3 CKD had GNRI< 98.

Both advanced CKD and dementia are well-known malnutrition risk factors. CKD patients have higher inflammatory status, and results in poor appetite. Besides, patients with dementia sometimes can not remember whether they have eaten or not, and refuse to intake.

Conclusion

The nursing home residents with advanced CKD or dementia may have higher malnutrition risk, and need additional nutritional evaluation and care.

Table 1. Clinical variables for nursing home residents were classified by GNRI score ^{1, 2}

	GNRI > 98	98~92	GNRI < 92
n	18	25	68
Age (years)	75.4 ± 11.2	81.3 ± 8.9	82.0 ± 7.9
BH (cm)	156.3 ± 8.3	155.2 ± 6.7	156.8 ± 8.7
BW (kg)	58.5 ± 8.0	52.5 ± 6.9	46.0 ± 9.0
BMI (kg/m ²)	23.9 ± 1.6	21.8 ± 2.6	18.8 ± 3.9
Albumin (g/dL)	4.0 ± 0.2	3.7 ± 0.2	3.2 ± 0.3

¹BH: body height, BW: body weight, BMI: body mass index, albumin: serum albumin.
²No significant differences were found in the 3 group.

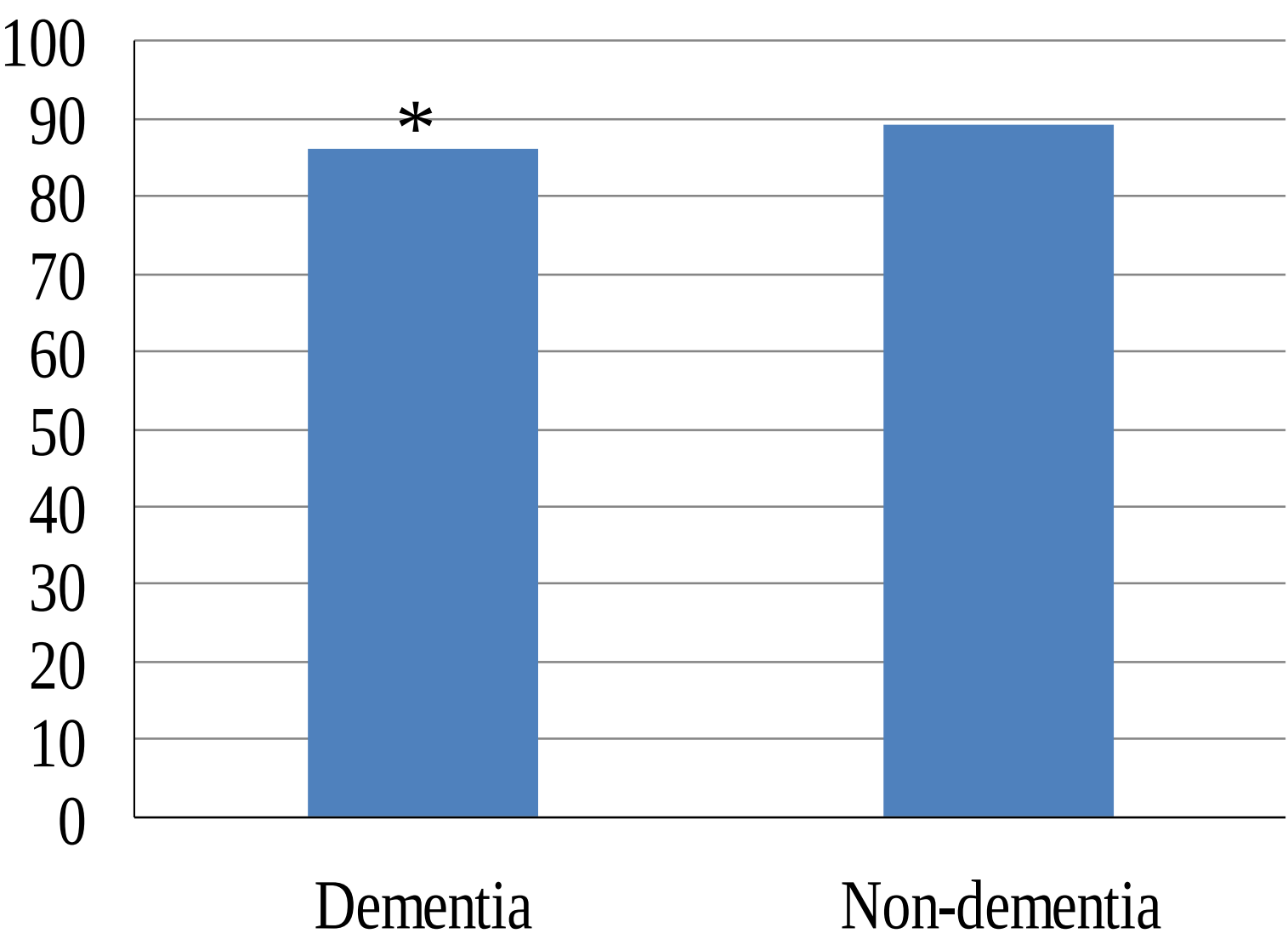


Figure 1 GNRI scores for nursing home residents with or without Dementia
* Unpaired t test, *P* < 0.05.