Letters to the editor

Are eating habits effective screening indicators for anemia in elderly Japanese people? The Kyushu-Asakura Project (KAP)

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Abstract

Objective: The aim of the present study was to explore whether the presence of unhealthy eating habits is an effective indicator of anemia among older people or not.

Methods: We used data from a prospective observational cohort study of all users who underwent an annual health checkup at a public clinic in a rural area. The subjects of the present study were 150 users aged 75 years and older who underwent the checkup between January and September 2010. The subjects were first divided by gender and further separated into anemic and non-anemic subgroups according to their estimated anemia prevalences: Hb < 130 g/L for males and Hb < 120 g/L for females. For each category, we compared the subjects’ lifestyles including eating habits between the anemic and non-anemic groups.

Results: Both among the women and the men aged 75 and over, there were no significant differences in any items including eating habits between the two anemic subgroups.

Conclusion: Our results suggest that the presence of unhealthy eating habits is not an effective indicator of anemia among older people.

Key words: anemia, rural area, blood test, medical checkup

Introduction

The high prevalence of anemia in elderly people is usually associated with a decline in activities of daily living and loss of motivation to go out\(^1\). Therefore, it is important for community health professionals to screen elderly people for anemia and provide patients with appropriate treatment.

Because elderly people with anemia often do not show subjective signs of illness or display symptoms that may be observed by a doctor, blood tests may be an effective screening method\(^5\). Another clue suggesting possible anemia is decreased food intake causing protein-energy malnutrition (PEM)\(^6\). A deeper understanding of the eating patterns that contribute to anemia in elderly people may encourage a more effective screening for anemia and ultimately lead to the development of appropriate preventive and treatment strategies for this condition. However, whether the presence of unhealthy eating habits is an effective indicator of anemia among older people is still unclear. The aim of the present study was to explore this issue with elderly Japanese people by using a database from an observational study performed in a rural area.

Methods

We used data from the Kyushu-Asakura Project (KAP), a prospective observational cohort study of users who underwent an annual health check at a public clinic in Asakura City (Kyushu region, Western Japan). Details of the KAP were previously published elsewhere\(^7,8\). The subjects of the present study were 150 users aged 75 years and older who underwent the checkup between January and September 2010. We abstracted information on past or present illness and lifestyle, including eating habits, from the KAP self-administered questionnaires. As for eating habits, subjects were asked three yes or no questions: “Are you normally careful not to overeat?” “Do you eat at regular times on a daily basis?” and “Do you eat vegetables on a daily basis?” As for exercise habits, subjects were asked a single yes or no question: “Do you exercise regularly?”

Eleven subjects whose data were missing were excluded from the present analysis. Thus, we finally analyzed a
total of 150 subjects aged 75 years and older. The subjects were first divided by gender and further separated into anemic and non-anemic subgroups according to their estimated anemia prevalences: Hb < 130 g/L for males and Hb < 120 g/L for females. For each category, we compared the subjects’ lifestyles including eating habits between the anemic and non-anemic groups. A statistical analysis was performed using the unpaired T-test for continuous data and the chi-square test for all other items. A P-value of less than 0.05 was considered statistically significant. All statistical analyses were performed on a personal computer using the Statistical Package for the Social Sciences (SPSS) for Windows (IBM SPSS Statistics for Windows, Version20.0, IBM Corp., Armonk, NY, USA). This study was carried out with the consent of the Nagoya University School of Medicine Ethics Committee.

### Results

The results of the study subjects are shown in Tables 1 and 2. Both among the women and the men aged 75 and over, there were no significant differences in any items including eating habits between the two subgroups.

### Discussion

Because the number of samples and the study area were limited, we would need to conduct further, larger-scale studies in order to generalize our results. However, we believe that despite this limitation, our study results provide valuable data for community health-care professionals and researchers.

While some studies have suggested that eating habits are linked with anemia among younger populations\(^8\)–\(^11\), our results suggest that this is not the case among both male and female elderly people. There are a few possible reasons for this outcome. Slightly hypoplastic or dysplastic marrow, which is common among the elderly, may contribute to senile anemia in older populations\(^12\). This may be one of the reasons why eating habits were not linked with anemia in our results. In addition, elderly people often develop anemia for reasons other than poor eating habits; this is referred to as unexplained anemia caused by advanced age\(^12\). The wide range of causes of anemia among elderly people may explain why our results failed to indicate a link between eating habits and anemia\(^12\). Moreover, a few of our subjects had PEM, which contributes to anemia. Unexpectedly, there seemed to be little connection between eating habits and PEM among our subjects. In order to generalize our results, we would...
need to carry out additional studies based on more detailed questionnaires focusing on food intake and nutrition.

**Conclusion**

We explored whether the presence of unhealthy eating habits is an effective indicator of anemia among older people or not by using a database from an observational study performed in a rural area. As a result, we found that the presence of unhealthy eating habits is not an effective indicator of anemia among older people.

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