CORRESPONDENCE

Korean J Intern Med 2023;38:269-270
https://doi.org/10.3904/kjim.2023.003

Reply to "The causal association between sarcopenia and colorectal cancer: a Mendelian randomization analysis"

Min Cheol Kim and Kyeong OK Kim

Division of Gastroenterology and Hepatology, Department of Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea

We appreciate the critical comments by Dr. Ran on our study [1]. Sarcopenia seems to be a very complex clinical condition in which the function and quality of muscles must also be considered, in addition to the loss of muscle mass. Currently, various criteria have been proposed to define sarcopenia, but there are still no clearly unified diagnostic criteria. Therefore, variable diagnostic criteria have been applied in many studies regarding sarcopenia and this could be one of the reasons of the difficulty in studying the relationship between sarcopenia and various diseases [2-4].

Although sarcopenia has been considered as one of aging process, it is also associated with decreased physical activity, dietary habits, and chronic diseases. In addition, these factors could be aggravated by sarcopenia itself. In other words, there are many factors that interact with sarcopenia and those factors directly or indirectly affect each other [5-8]. So, there could be many confounding factors in analyzing the relationship between sarcopenia and specific diseases.

The aim of our study was to evaluate the relationship between sarcopenia and colon neoplasia [8-10]. However, since the criteria for defining sarcopenia are diverse and complex, we defined sarcopenia using three commonly used criteria among the methods that can easily measure, albeit indirectly, in actual clinical practice. And using this, we analyzed the relationship with colon neoplasia. In our study, all measurable confounding factors suggested by various previous studies were adjusted.

The limitation of our study was that we simply considered only muscle mass in sarcopenia and measured muscle mass in an indirect way. Despite these limitations, our results are meaningful in that there was significant relationship between sarcopenia and colon neoplasia after adjusting for all measurable confounding factors, and that possible mechanisms were also inferred through previous studies [11-19].

It is very interesting that the results of Medelian randomization analysis using genetic variation on the relationship between sarcopenia and colon neoplasia yielded results opposite to those of our study. We believe that the results of your study are also meaningful in that Medelian randomization analysis has little influence of confounding factors and can evaluate causality between exposure and outcome. However, there are also limitations in predicting the relationship between sarcopenia and colon neoplasia simply with genetic variation. In other words, the reason why the result of your study was different from ours is that our study analyzed based on various clinical factors rather than genetic factors. Although we cannot know

Received : January 3, 2023
Accepted : January 9, 2023

Correspondence to
Kyeong Ok Kim, M.D.
Division of Gastroenterology and Hepatology, Department of Internal Medicine, Yeungnam University College of Medicine, 170 Hyeonchung-ro, Nam-gu, Daegu 42415, Korea
Tel: +82-53-620-3835
Fax: +82-53-620-8386
E-mail: kokim@yu.ac.kr
https://orcid.org/0000-0001-5799-7436

pISSN 1226-3303
eISSN 2005-6648
http://www.kjim.org

which one has more powerful impact on the development of colorectal neoplasia, we think that race, age, and other acquired factors also must be fully considered because the development of colorectal neoplasia is associated with both genetic and environ mental factors.

In summary, sarcopenia is a very complex clinical condition that interacts with various factors, and some of those factors are also related to the development of colorectal neoplasia, so it can be difficult to find a clear association between sarcopenia and colorectal neoplasia. We analyzed the relationship considering various clinical factors rather than genetic variation. On the other hand, Dr. Ran analyzed the relationship based on genetic factors. Difference in these research approaches or methods led to different results, and more research is needed on this.

Conflict of interest

No potential conflict of interest relevant to this article was reported.

REFERENCES

1. Ran S, Zhao MF, Liu BL. The causal association between sarcopenia and colorectal cancer: a Mendelian Randomization analysis. Korean J Intern Med 2023;38:266-268.
2. Jung YS, Kim NH, Ryu S, Park JH, Park DI, Sohn CI. Association between low relative muscle mass and the risk of colorectal neoplasms. J Clin Gastroenterol 2017;51:e83-e89.
3. Hong JT, Kim TJ, Pyo JH, et al. Impact of sarcopenia on the risk of advanced colorectal neoplasia. J Gastroenterol Hepatol 2019;34:162-168.
4. Park YS, Kim JW, Kim BG, et al. Sarcopenia is associated with an increased risk of advanced colorectal neoplasia. Int J Colorectal Dis 2017;32:557-565.
5. Reisinger KW, van Vugt JL, Tegels JJ, et al. Functional compromise reflected by sarcopenia, frailty, and nutritional depletion predicts adverse postoperative outcome after colorectal cancer surgery. Ann Surg 2015;261:345-352.
6. Pedersen M, Cromwell J, Nau P. Sarcopenia is a predictor of surgical morbidity in inflammatory bowel disease. Inflamm Bowel Dis 2017;23:1867-1872.
7. Jones SE, Maddocks M, Kon SS, et al. Sarcopenia in COPD: prevalence, clinical correlates and response to pulmonary rehabilitation. Thorax 2015;70:213-218.
8. Kim TN, Park MS, Yang SJ, et al. Prevalence and determinant factors of sarcopenia in patients with type 2 diabetes: the Korean Sarcopenic Obesity Study (KSOS). Diabetes Care 2010;33:1497-1499.
9. Lee YH, Jung KS, Kim SU, et al. Sarcopaenia is associated with NAFLD independently of obesity and insulin resistance: nationwide surveys (KNHANES 2008-2011). J Hepatol 2015;63:486-493.
10. Lim S, Kim JH, Yoon JW, et al. Sarcopenic obesity: prevalence and association with metabolic syndrome in the Korean Longitudinal Study on Health and Aging (KLoSHA). Diabetes Care 2010;33:1652-1654.
11. Ong ML, Holbrook JD. Novel region discovery method for Infinium 450K DNA methylation data reveals changes associated with aging in muscle and neuronal pathways. Aging Cell 2014;13:142-155.
12. Yagi S, Kadota M, Aihara KI, et al. Association of lower limb muscle mass and energy expenditure with visceral fat mass in healthy men. Diabetol Metab Syndr 2014;6:27.
13. Wolin KY, Yan Y, Colditz GA, Lee IM. Physical activity and colon cancer prevention: a meta-analysis. Br J Cancer 2009;100:611-616.
14. Pedersen BK. Exercise-induced myokines and their role in chronic diseases. Brain Behav Immun 2011;25:811-816.
15. Braunersreuther V, Viviani GL, Mach F, Montecucco F. Role of cytokines and chemokines in non-alcoholic fatty liver disease. World J Gastroenterol 2012;18:727-735.
16. de Visser KE, Eichten A, Coussens LM. Paradoxical roles of the immune system during cancer development. Nat Rev Cancer 2006;6:24-37.
17. Balkwill F, Charles KA, Mantovani A. Smoldering and polarized inflammation in the initiation and promotion of malignant disease. Cancer Cell 2005;7:211-217.
18. Gomes MJ, Martinez PF, Pagan LU, et al. Skeletal muscle aging: influence of oxidative stress and physical exercise. Oncotarget 2017;8:20428-20440.
19. Beyer I, Mets T, Bautmans I. Chronic low-grade inflammation and age-related sarcopenia. Curr Opin Clin Nutr Metab Care 2012;15:12-22.

https://doi.org/10.3904/kjim.2023.003