

Editorial



Mechanisms Linking Hyperuricemia to Increased Cardiovascular Risk

Eun Ha Kang

Division of Rheumatology, Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea

► See the article “Increased Carotid Intima-Media Thickness (IMT) in Hyperuricemic Individuals May be Explained by Hyperhomocysteinemia Associated with Renal Dysfunction: a Cross-Sectional Study” in volume 34, number 37, e237.

OPEN ACCESS

Received: Sep 2, 2019

Accepted: Sep 4, 2019

Address for Correspondence:

Eun Ha Kang, MD, PhD, MPH

Division of Rheumatology, Department of Internal Medicine, Seoul National University Bundang Hospital, 166 Gumi-ro, Bundang-gu, Seongnam 13620, Republic of Korea.
E-mail: kangeh@snuh.org

© 2019 The Korean Academy of Medical Sciences.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ORCID iDs

Eun Ha Kang

<https://orcid.org/0000-0001-9697-1159>

Disclosure

The author has no potential conflicts of interest to disclose.

Beyond gouty arthritis, hyperuricemia has been associated with increased risk of renal impairments¹ and cardiovascular (CV) events.^{2,3} Despite robust epidemiologic evidence linking hyperuricemia and CV risk, the underlying mechanism has been unclear.

Park et al.⁴ observed a significant correlation of serum homocysteine levels with carotid intima-media thickness or renal impairments among hyperuricemic patients. The finding is not surprising based on the previous report that both metabolic syndrome and renal impairments are associated with homocysteinemia.⁵ Based on their results, the authors proposed a hypothesis where hyperuricemia induces homocysteinemia through renal impairments, which ultimately leads to atherosclerosis.⁴ However, appropriate mediation analysis to support the hypothesis is not sufficient by the cross-sectional study design. Further studies are required to fully illuminate the underlying mechanisms between hyperuricemia and CV risk.

REFERENCES

1. Richette P, Perez-Ruiz F, Doherty M, Jansen TL, Nuki G, Pascual E, et al. Improving cardiovascular and renal outcomes in gout: what should we target? *Nat Rev Rheumatol* 2014;10(11):654-61.
[PUBMED](#) | [CROSSREF](#)
2. Li M, Hu X, Fan Y, Li K, Zhang X, Hou W, et al. Hyperuricemia and the risk for coronary heart disease morbidity and mortality a systematic review and dose-response meta-analysis. *Sci Rep* 2016;6(1):19520.
[PUBMED](#) | [CROSSREF](#)
3. Storhaug HM, Norvik JV, Tøft I, Eriksen BO, Løchen ML, Zykova S, et al. Uric acid is a risk factor for ischemic stroke and all-cause mortality in the general population: a gender specific analysis from The Tromsø Study. *BMC Cardiovasc Disord* 2013;13(1):115.
[PUBMED](#) | [CROSSREF](#)
4. Park JH, Song JS, Choi ST. Increased carotid intima-media thickness (IMT) in hyperuricemic individuals may be explained by hyperhomocysteinemia associated with renal dysfunction: a cross-sectional study. *J Korean Med Sci* 2019;34(37):e237.
[CROSSREF](#)
5. Fu S, Yao Y, Zhao Y, Luan F. Relationships of hyperhomocysteinemia and hyperuricemia with metabolic syndrome and renal function in Chinese centenarians. *Front Endocrinol (Lausanne)* 2018;9:502.
[PUBMED](#) | [CROSSREF](#)