RESPONSE TO COMMENT ON KOROMANI ET AL.

Vertebral Fractures in Individuals With Type 2 Diabetes: More Than Skeletal Complications Alone. Diabetes Care 2020;43:137–144

Fjorda Koromani[1,2] *and Fernando Rivadeneira*[1]

Diabetes Care 2020;43:e69 | https://doi.org/10.2337/dci19-0081

We read the comment by Dr. Mormile (1) and thank her for sharing her insight about a potential role of microRNAs (miRNAs) in glucose and skeletal metabolism. Our study did not look into the underlying mechanisms, which are a subject of warranted future research. miR-146a deregulation, besides being linked to bone (2) and potentially to diabetes (3), has also been linked to immune function, hematopoiesis, and cancer, with gene knockout studies indicating a role for this miRNA as a tumor suppressor (4–6). Most of the studies on miR-146a conducted to date with health outcomes are in vitro or in animals, and those few conducted in humans are limited to small studies of very limited sample size, none of them testing associations between miR-146a, diabetes, and risk of fractures (a PubMed search on 21 February 2020 for "miR-146a" [ti] returned 645 hits, whereas the search (("Clinical Study"[Publication Type] OR "Clinical Studies as Topic" [MeSH] OR "Epidemiology"[MeSH]) AND ("Humans"[MeSH] AND "miR-146a "[ti])) resulted in 12 hits). Therefore, there is need for studies in the field of miRNAs, just as there is need for determinants from other -omics layers (i.e., genomics, epigenomics, transcriptomics, proteomics, metabolomics, and metagenomics) to dissect the complexity of the biological processes underlying bone and glucose metabolism. As such, the involvement of miR-146 in these processes remains a hypothesis, with no immediate clinical relevance for the management of patients with diabetes and vertebral fractures.

Duality of Interest. No potential conflicts of interest relevant to this article were reported.

References

1. Mormile R. Comment on Koromani et al. Vertebral fractures in individuals with type 2 diabetes: more than skeletal complications alone. Diabetes Care 2020;43:137–144 (Letter). Diabetes Care 2020; 43:e68. DOI: 10.2337/dc19-2460
2. Zhao J, Huang M, Zhang X, et al. MiR-146a deletion protects from bone loss in OVX mice by suppressing RANKL/OPG and M-CSF in bone microenvironment. J Bone Miner Res 2019;34: 2149–2161
3. Alipoor B, Ghaedi H, Meshkani R, et al. Association of MiR-146a expression and type 2 diabetes mellitus: a meta-analysis. Int J Mol Cell Med 2017;6:156–163
4. Mei J, Bachoo R, Zhang C-L. MicroRNA-146a inhibits glioma development by targeting Notch1. Mol Cell Biol 2011;31:3584–3592
5. Taganov KD, Boldin MP, Chang K-J, Baltimore D. NF-κB-dependent induction of microRNA miR-146, an inhibitor targeted to signaling proteins of innate immune responses. Proc Natl Acad Sci U S A 2006;103:12481–12486
6. Starczynowski DT, Kuchenbauer F, Wegrzyn J, et al. MicroRNA-146a disrupts hematopoietic differentiation and survival. Exp Hematol 2011; 39:167–178.e4

Downloaded from http://diabetesjournals.org/care/article-pdf/43/6/e69/630093/dci190081.pdf

[1]*Department of Internal Medicine, Erasmus University Medical Center, Rotterdam, the Netherlands*
[2]*Department of Radiology and Nuclear Medicine, Erasmus University Medical Center, Rotterdam, the Netherlands*

Corresponding author: Fernando Rivadeneira, f.rivadeneira@erasmusmc.nl

© 2020 by the American Diabetes Association. Readers may use this article as long as the work is properly cited, the use is educational and not for profit, and the work is not altered. More information is available at https://www.diabetesjournals.org/content/license.