RESPONSE TO COMMENT ON ELLIOTT ET AL.

Prevalence and Prognosis of Unrecognized Myocardial Infarction in Asymptomatic Patients With Diabetes: A Two-Center Study With Up to 5 Years of Follow-up. Diabetes Care 2019;42:1290–1296

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We greatly appreciate the comments by Milei et al. (1) about our investigation of the prevalence and prognostic significance of unrecognized myocardial infarction (MI) on delayed-enhancement MRI imaging (2). The combination of silent presentation and adverse prognosis associated with unrecognized MI in patients with diabetes presents both a diagnostic and therapeutic challenge. It has been suggested that the high cardiac risk associated with diabetes may, in part, be attributed to the fact that coronary artery disease in this patient population is notoriously asymptomatic and frequently in an advanced stage at the onset of clinical manifestations. Indeed, data from the Emory Cardiac Database highlight the poor long-term prognosis among young (<40 years old, mean age 35 years) patients with diabetes and symptomatic coronary artery disease, documenting a 15-year mortality rate of 65% (3). Elegant basic science investigations into the mechanisms that may explain the clinical observation of a higher prevalence of asymptomatic coronary syndromes in patients with diabetes were very important in developing our knowledge base about ischemic heart disease complications in diabetes (4). Potentially connecting a histologic observation on cardiac autonomic nerve pathology in patients with diabetes described over 40 years ago with the current observation of prevalence and adverse prognosis associated with unrecognized MI on delayed-enhancement MRI is compelling. Future studies of asymptomatic patients with diabetes undergoing delayed-enhancement MRI imaging that are paired with autonomic nervous system testing could provide further insight into the potential link between cardiac autonomic nerve pathology and unrecognized MI.

Regarding the last point made by Milei et al. (1) on visualizing old infarctions that have undergone fatty metaplasia—as the standard inversion recovery turbo flash sequence that is employed for delayed-enhancement imaging is strongly T1 weighted—the component of the infarct that has undergone fatty metaplasia has high signal (in comparison with normal myocardium) and is well visualized. Thus, it is unlikely that additional unrecognized MIs in our patient cohort would have been visualized with the addition of T1 spin-echo imaging with and without fat saturation.

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Duality of Interest. R.J. and R.J.K. are inventors on a U.S. patent on delayed-enhancement MRI, which is owned by Northwestern University. No other potential conflicts of interests relevant to this letter were reported.

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