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Response to Letters to the Editor from Ferro and colleagues and Campbell

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We thank Dr. Campbell for his interest in our work. We agree that cardiomyocyte size is an important determinant of coronary microvascular density.¹ We also agree that measurement of the diffusion radius or cardiomyocyte width may provide additional information regarding the magnitude of reduction in microvessel density accounted for by cardiomyocyte hypertrophy.² Indeed, we have considered the role of hypertrophy on vessel density and have shown an inverse association between microvessel density and cardiac hypertrophy (% expected heart weight).³ Notably, subjects with heart failure with preserved ejection fraction (HFpEF) had lower microvessel density than control, even after adjusting for cardiac hypertrophy.³ These findings suggest that in addition to cardiac hypertrophy, other factors contribute to the reduction of coronary microvessel density in HFpEF.

We are grateful to Dr. Edwards and colleagues for their insightful comments. We concur that chronic kidney disease (CKD) perhaps plays a greater role in the pathogenesis of HFpEF than previously recognized.⁴⁻⁶ We particularly find Dr. Edwards's work on myocardial fibrosis in CKD interesting.⁷ While we are intrigued by the potential contribution of pro-inflammatory state in CKD to HFpEF pathophysiology and the interaction between age and CKD in HFpEF, our study is not designed to address these questions. We welcome prospective longitudinal studies investigating the intricate relationship between HFpEF and CKD.

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