appear to trigger or exacerbate myositis with anti–HMG-CoA reductase autoantibodies (5).

Taken together with the prior report (2), the clinical findings among subjects in the Gallup Indian Medical Center indicate that physicians should have a high index of suspicion for the development of autoimmune myopathy when prescribing statins to American Indian patients. Patients who develop muscle weakness and elevated creatinine kinase levels should be tested for anti–HMG-CoA reductase autoantibodies. In those who test positive, statins should be stopped and treatment initiated to improve muscle strength and prevent permanent muscle damage.

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von Willebrand factor as an indicator of endothelial injury in COVID-19: comment on the article by Shi et al

To the Editor:

We read with great interest the article by Dr. Shi et al (1) on their efforts to "identify circulating factors contributing to endothelial cell activation and dysfunction in COVID-19." Conspicuous by its absence in this otherwise thorough investigation was any mention of von Willebrand factor (vWF), a coagulation factor and early indicator of endothelial injury (2). Increases in circulating vWF antigen precede and directly promote thrombosis by mediating platelet adhesion and preventing clearance of coagulation factor VIII (3). Shi and colleagues postulated that antiphospholipid antibodies may activate endothelial cells in COVID-19, which others have shown to be mediated by vWF (4). Patients with COVID-19 commonly have increased levels of vWF antigen, and its presence is a marker that could be used to predict the risk of death and increased length of hospitalization in patients with COVID-19 (5–9).

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Reply

To the Editor:

We appreciate Dr. Palmer-Toy et al's interest in our article. We agree that vWF is an important mediator of

thromboinflammation. After activation of endothelial cells and platelets, vWF is released from Weibel-Palade bodies and platelet alpha granules, respectively, leading to a cascade of heterotypic cellular interactions that support a procoagulant and proinflammatory milieu (1). Correlations between increases in the circulating pool of vWF and severity of COVID-19 or death resulting from complications of COVID-19 have been reported by many investigators (2–7), including Palmer-Toy and colleagues.

Because polyclonal COVID-19 antibody fractions have been shown to activate neutrophils and platelets, as well as to suppress physiologic antiviral responses, we focused on autoantibodies in our study's exploration of endothelial dysfunction in COVID-19. Of note, we reported that purified IgG fractions from patient COVID-19 serum samples, especially from patients with elevated circulating antiphospholipid antibodies, recapitulated activation of endothelial cells by intact COVID-19 serum, suggesting that the circulating antibody milieu in COVID-19 bears a foudroyant capacity to transform the endothelial surface and facilitate leukocyte adhesion. The specific targets of these antibodies and whether they ligate receptors or recognize antigens at the endothelial surface remain unknown and are worthy of investigation. Additional mechanisms of endothelial activation in COVID-19 include denudation of the protective glycocalyx, mobilization of Weibel-Palade bodies, and sex-specific steroid effects. In our opinion, defining these upstream stimuli that trigger the shift away from a quiescent state likely supersedes understanding the kinetics by which the endothelium acquires a thromboinflammatory phenotype.

Although we did not examine platelet–endothelial interactions in our study, these have been described in COVID-19 and have been shown to be, at least in part, attributable to the actions of vWF (8). Polyclonal COVID-19 IgG pools enriched in antiphospholipid antibodies may facilitate platelet–endothelial interactions through vWF string formation, as previously reported in antiphospholipid syndrome (9,10). We certainly support the intent of Palmer-Toy and colleagues to promote the exploration of endothelial and hematopoietic cell interactions in pursuit of understanding the mechanisms that differentiate normal physiologic responses from their maladaptive counterparts that result in tissue injury.

Dr. Kanthi is an inventor on an unrelated pending patent to the University of Michigan (US20180369278A1). The remaining authors have no competing interests.

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Addressing readability of online patient materials: comment on the American College of Rheumatology online information pages for patients and caregivers

To the Editor:

Health literacy is the ability to acquire, process, and comprehend health information to make informed health decisions (1). Heath literacy rates, among adults in the US and worldwide, vary considerably, and lower health literacy has been understandably correlated with worse health outcomes (2). Therefore, the current recommendation by the American Medical Association is that health care information should be written at or below a sixth-grade reading level, corresponding to 6 years of education, to meet the needs of the general population (3).