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LETTER TO THE EDITOR

Raynaud's phenomenon and blood rheology: comments on the article "Raynaud's phenomenon—an update on diagnosis, classification and management"

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Overall, the recent article "Raynaud's phenomenon—an update on diagnosis, classification and management" [1] is a well-written paper that advances the research literature on Raynaud's phenomenon (RP). However, there is a physiologic aspect of RP that is not addressed in this paper that may help to explain the differences between primary RP and RP secondary to systemic sclerosis (SSc) and also could potentially lead to new treatment approaches for this nearly ubiquitous SSc symptom.

A number of published papers have documented that patients with SSc have abnormal blood rheology, with elevated overall whole blood viscosity (WBV) and red blood cell hyperaggregation [2–6]. Two recent papers have documented correlations between elevated WBV and either pulmonary artery hypertension [7] or digital ulcers (DU) [8]. Since DU are a manifestation of continued episodes of RP [9], the recent Korsten paper linking elevated WBV to DU [8] is directly relevant to the current paper.

Research studies have documented that blood rheology is essentially normal in patients with primary RP, but highly abnormal in SSc patients [2, 6]. This research also shows that therapeutic apheresis, which is known to normalize blood rheology [2, 5, 6, 10], has little or no effect on primary RP, but typically leads to significant improvement in both RP and DU in SSc patients. A recent review paper on the use of therapeutic apheresis to treat SSc [11] includes a list of more than a dozen studies that have described improvements in RP following a small number of therapeutic apheresis treatments.

This raises an interesting and important question: given that therapeutic apheresis, in contrast to conventional treatments such as calcium channel blockers and phosphodiesterase type 5 inhibitors, has no known effects on the vasoelastic properties of the microvascular system, what is the mechanism of action for rapid improvement in RP following therapeutic apheresis? Is abnormal blood rheology in itself part of the pathogenic processes in SSc and if so, how? Answering these questions might lead to completely new treatment approaches for RP that could be used in lieu of or in conjunction with conventional treatment options.

Compliance with ethical standards

Disclosures None.

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