Letter by Reed et al Regarding Article, “Proteomic Analysis Implicates Translationally Controlled Tumor Protein as a Novel Mediator of Occlusive Vascular Remodeling in Pulmonary Arterial Hypertension”

To the Editor:

We read with great interest the paper by Lavoie et al1 and congratulate the authors on this important and pioneering study. The paper shows encouraging evidence which adds to that from our lab2 and others,3 showing that vascular cells derived from adult stem cells (in this paper, blood outgrowth endothelial cells [BOECs]) can be used to phenotype patients with cardiovascular disease and have applications as tools in personalized medicine. This is particularly important because BOECs are also being considered as autologous cell therapies4 where perpetuation of disease phenotype needs to be identified and avoided.

Furthermore, while this work clearly identifies BOECs as a relevant model of vascular endothelium in patients, we suggest, it is equally important that the vascular smooth muscle also be considered, particularly in diseases such as pulmonary arterial hypertension. To do this, blood outgrowth vascular smooth muscle cells (BO-VSMCs) originally isolated in 2002 and more recently reported in 2012,5 could be used. BO-VSMCs are not as well characterized or as commonly used as BOECs and protocols defining their isolation from patients with disease are less developed. As VSMCs are a target cell type for current pulmonary arterial hypertension mainstay therapy, BO-VSMCs could also be used to predict patient responses to current drugs, allowing for personalized pulmonary arterial hypertension therapy. In addition to target identification, we suggest that in the future it will be possible to grow both BOECs and BO-VSMCs from the same individual and fully phenotype the nature of a given patients’ vascular disease and response to therapy.

Disclosures

None.

References


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