Clearance of Plasma Proprotein Convertase Subtilisin/Kexin 9 by Low-Density Lipoprotein Apheresis

To the Editor:
Proprotein convertase subtilisin/kexin 9 (PCSK9) is a secreted protein that modulates plasma low-density lipoprotein (LDL) concentrations in part by facilitating degradation of the LDL receptor. It also mediates degradation of the very-low density lipoprotein receptor and apolipoprotein E receptor 2. PCSK9 in plasma is primarily secreted by hepatocytes and is thought to have paracrine and exocrine effects, but the role of circulating PCSK9 in the modulation of LDL clearance from plasma remains unclear.1

Insights into the partitioning of PCSK9 in plasma were provided by recent studies published by Tavori, Fazio, and colleagues that demonstrated a high degree of binding of PCSK9 to LDL particles in plasma,4 as well as the data published in demonstrating a 48±11% reduction in PCSK9 (P=0.038) in association with a 59±30% reduction in LDL cholesterol (P=0.03).

Our results are concordant with the findings of Tavori et al1 and provide further evidence in support of the notion that a large proportion (≥40%) of PCSK9 in plasma is bound to apolipoprotein B–containing lipoproteins (primarily LDL) and that the majority of LDL-bound PCSK9 can be removed from plasma during LDL apheresis with dextran sulfate adsorption. Additional studies are needed to elucidate the physiological and clinical implications of these observations.

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Disclosures
P.B. Duell served as a consultant to Kaneka for purposes unrelated to this study. The other authors report no conflicts.

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