Use of Protoporphyrins to Evaluate Heme Oxygenase Problematical

To the Editor:

In the recent report by Vera et al.1 with an associated editorial commentary by N.G. Abraham,2 cobalt protoporphyrin (CoPP) is used as an inducer of heme oxygenase-1 to demonstrate that heme oxygenase-1 prevents angiotensin II hypertension. The possibility CoPP interactions with a variety of other heme-containing proteins linked directly and indirectly to blood pressure, eg, soluble guanylyl cyclase (sGC) and cytochrome P450,3,4 should also be considered in interpreting the results. CoPP IX substitution and CoPP III have both been reported to activate purified sGC.5,6 The authors do not report the type or source of CoPP used in their studies. The effect of specific inhibitors of sGC, eg, 1H-(1,2,4)oxadiazolo [4,3-alpha]quinoxalin-1-one, on the response to CoPP infusions may help to address the role of sGC. However, if the effect of heme oxygenase-1 is partially mediated by activation of sGC by carbon monoxide, specific inhibitors of sGC may also prevent protection from angiotensin II hypertension by heme oxygenase-1.

Disclosures

None.

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