Response to Letter Regarding Article, “Acute Kidney Injury and Cardiovascular Outcomes in Acute Severe Hypertension”

We thank Dr Lin and colleagues for their questions regarding the analysis from the Studying the Treatment of Acute Hypertension Registry (STAT) registry exploring the relationship between both acute and chronic kidney disease in patients with acute hypertension.1 There are two different aspects of their questions that can be addressed. First, on the mathematical or statistical level, Lin et al suggest different ways in which the data can be analyzed. The inclusion of various parameters of blood pressure (including mean arterial pressure) as well as the analysis of change in kidney function using different methods were conducted within STAT. The results and conclusions were not significantly different from those presented in the published article, so they were not included owing to space constraints.

More importantly, though, Lin et al emphasize that these data are counterintuitive to what would be expected based on studies that have been conducted in settings other than acute severe hypertension. As they have noted, patients receiving chronic dialysis have mortality rates that are significantly higher than those with chronic kidney disease or the general population, and race and the presence of diabetes mellitus are both significantly associated with worse outcomes. These findings are consistent over multiple studies in the chronic outpatient care setting. However, few studies have examined these relationships during the event of hospitalization owing to acute severe hypertension. Regardless of whether the greater mortality risk associated with acute kidney injury than end stage renal disease in acute severe hypertension reflects differences in diagnosis or pathophysiology of the acute event between the two groups, the clinical message is an important one that should draw clinical as well as research attention to this previously under-recognized high-risk group of patients with acute kidney injury.

We agree that the differences in relationships between these clinical and demographic parameters in the acute as compared with the chronic setting are intriguing. They represent a clear need to further study the associations with acute kidney injury in acute severe hypertension and to develop treatments to mitigate the risk.

Sources of Funding

STAT was supported by a research grant from The Medicines Company.

Disclosures

Dr Szczech reports receiving consulting fees from Ortho Biotech Clinical Affairs, Nabi Pharmaceuticals, Gilead, Fresenius Medical Care, Kureha, Affymax, and Acologix; lecture fees from Nabi, Biopharmaceuticals, Fresenius Medical Care, GlaxoSmithKline, Gilead, Genzyme, Abbott, Amgen, and Ortho Biotech; and grant support from GlaxoSmithKline, Pfizer, and Genzyme. Dr Granger has received research grant support and honoraria from, and is a consultant/advisory board member for, The Medicines Company. Dr Dasta is on the speakers’ bureau for Hospira, and is a consultant or speaker for PDL Biopharma and The Medicines Company; and is a consultant/advisory board member for The Medicines Company. All authors report no conflicts.

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Circulation. 2011;123:e268
doi: 10.1161/CIRCULATIONAHA.110.984963
Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circ.ahajournals.org/content/123/9/e268

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