Major Effect of the Syndrome of Rapid-Onset End-Stage Renal Disease on the Use of Arteriovenous Fistulas: High Rates of Initiation of Hemodialysis With Hemodialysis Catheter in the United States

To the Editor

Whereas classic teaching highlights reduced infection risk, fewer hospitalizations, and lower total costs associated with hemodialysis (HD) that is initiated via arteriovenous fistula (AVF) vs hemodialysis catheter (HC), and whereas the National Kidney Foundation–Kidney Disease Outcomes Quality Initiative’s first published practice guidelines regarding permanent HD access creation and maintenance in 1997, targeting a 50% or greater incidence rate for AVF, Malas et al2 have demonstrated in a retrospective analysis of 510 000 patients with end-stage renal disease (ESRD) in the US Renal Data System database that 82.6% of these patients initiated HD via HC, 14.0% via AVF, and 3.4% via arteriovenous graft. Arteriovenous fistula use increased only minimally, from 12.2% in 2006 to 15.0% in 2010.2 Furthermore, patients initiating HD with AVF had 35% lower mortality than those initiating HD with HC (adjusted hazard ratio, 0.65; 95% CI, 0.64-0.66; P < .001).2 As a consequence, survival at 1 year was 78% in the HC group compared with 84% for the arteriovenous graft group and 89% for the AVF group (Wilcoxon P < .001).2 Arteriovenous fistula use was associated with a 38% lower hazard of cardiovascular mortality (adjusted hazard ratio, 0.62; 95% CI, 0.61-0.64; P < .001) and with a 44% lower hazard of sepsis-related mortality (adjusted hazard ratio, 0.56; 95% CI, 0.53-0.59; P < .001).2

The question therefore arises as to why, despite this evidence in support of AVF use at HD initiation, we in the United States have continued to have very low AVF rates at HD initiation despite the widespread implementation of Fistula-First programs.1 Malas et al2 had proffered some solutions to this problem, such as targeted pay incentives to enhance early nephrology referrals to surgeons for AVF creation and health insurance policy changes to cover for AVF creation procedures.2

In 2010, I described, for the first time, the syndrome of rapid-onset ESRD.3 This is an acute-yet-irreversible type of ESRD following episodes of acute kidney injury among patients with chronic kidney disease.3 Our experience suggests that the syndrome of rapid-onset ESRD could at least partly explain why we are unable to achieve higher AVF rates at HD initiation.3-4 In a recent 13-year cohort analysis of patients with incident ESRD seen at the Mayo Clinic in Rochester, Minnesota, 149 of 1461 patients with ESRD (10.2%) demonstrated the features of the syndrome of rapid-onset ESRD.4 Furthermore, of these 149 patients, 147 (98.7%) initiated HD with an HC.4 Perhaps more “renoprevention” measures to reduce the incidence of acute kidney injury may be another solution to the high use of HCs for the care of patients with ESRD in the United States.

Macaulay Amechi Chukwukadibia Onuigbo, MD, MSc, FWACP, MBA

Author Affiliations: Mayo Clinic College of Medicine, Rochester, Minnesota (Onuigbo); Department of Nephrology, Mayo Clinic Health System, Eau Claire, Wisconsin (Onuigbo).

Corresponding Author: Macaulay Amechi Chukwukadibia Onuigbo, MD, MSc, FWACP, MBA, Department of Nephrology, Mayo Clinic Health System, 1221 Whipple St, Eau Claire, WI 54702 (onuigbo.macaulay@mayo.edu).

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CORRECTION

Error in Byline: In the Invited Commentary titled “Bundles of Care for Patients With Ruptured Abdominal Aortic Aneurysms: Is Endovascular Repair the Solution?” published online August 5, 2015, in JAMA Surgery,1 the degree of the second author, William Toppen, was inadvertently reported as “MD.” Mr Toppen is a fourth-year medical student, and his degree should have been reported as “BA.” We apologize to the editor, the editorial board, and the readers for this oversight. This error has been corrected.2

Peyman Benharash, MD
William Toppen, BA

Author Affiliations: Division of Cardiac Surgery, Department of Surgery, David Geffen School of Medicine, University of California at Los Angeles (Benharash); David Geffen School of Medicine, University of California at Los Angeles (Toppen).

Corresponding Author: Peyman Benharash, MD, Division of Cardiac Surgery, Department of Surgery, David Geffen School of Medicine, University of California at Los Angeles, 10833 Le Conte Ave, Los Angeles, CA 90095 (pbenharash@mednet.ucla.edu).


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Omitted Middle Initial and Incorrect Degree


CORRECTION

Omitted Middle Initial and Incorrect Degree: In the Original Article titled “Impact of Family and Gender on Career Goals: Results of a National Survey of 4586 Surgery Residents,” published in May 2010, there were typographical errors in the author byline. Crystal Piper’s full name should have been listed as “Crystal L. Piper” and her academic degree as “MS.” This article was corrected online.